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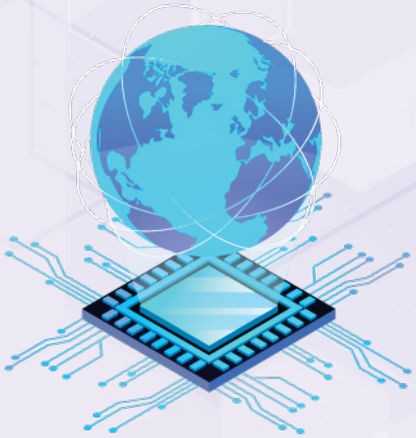
COMPUTER APPLICATION

with Cyber-Safety, Scratch & Python

(CBSE CODE 165)

Revised & Updated Edition



Strictly as per the revised CBSE syllabus

- Concise, comprehensive and easy language.
- Solved questions with each chapter.
- Latest recommended technology and software.
- Hands on projects for practical learning.

10

An ISO Certified Company

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10

Based on Updated CBSE Syllabus

CONCEPT BY	COMPOSED BY	CONTRIBUTIONS	DESIGNED BY
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PREFACE

With sudden increase in the usage of computer and software globally, schools are focusing on computer education with the BEST (BEYOND IMAGINATION, EXCELLENT, SYSTEMATIC, TEACHING PLAN) learning technique. But the study material used was not fulfilling the requirement of modern BEST based training, followed with traditional educational methodology with outdated software versions.

Computer Applications for Class IX is the latest and advanced computer book which has been prepared, keeping in mind the interest of students and teachers in the field of Information Technology. In compliance with the prescribed curriculum, this book covers basics of information technology, cyber safety, Office productivity tools and programming basics with Scratch and Python.

The book is designed with an interactive and hands-on approach to communicate the essential aspects of computer. We have used simple language in the entire series for precise and better understanding.

Salient features of the series :

- "Chapter focuses on"- a brief overview of the chapter.
- Use of more pictures to make theory interesting.
- "You have learned"- a complete summary of the chapter.
- "Activity Time" and "Lab Activities"- for practice.
- "Tips" and "Do You Know"- for additional information.
- All the definitions have been highlighted for better impact.
- Usage of latest technology and softwares to make the learning effective & industry relevant.

We welcome your valuable feedback to improve the content and the presentation of the chapters. Please contact us at eduitspl@gmail.com.

COURSE STRUCTURE

Learning Outcomes:

1. Ability to create a simple website
2. Ability to embed images, audio and video in an HTML page
3. Ability to use style sheets to beautify the web pages.
4. Ability to write iterative programs with Scratch/Python.
5. Ability to Interface a web site with a web server and record the details of a user's request.
6. Ability to follow basic cyber ethics
7. Ability to familiarize with network concepts.

Distribution of Marks and Periods

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
1	Networking	10	05	05
2	HTML	20	30	50
3	Cyber ethics	10	05	10
4	Scratch/Python Theory	10	15	60
5	Practicals	50	-	-
	Total	**100**	**55**	**125**

Unit 1: Networking

- **Internet:** World Wide Web, web servers, web clients, web sites, web pages, web browsers, blogs, news groups, HTML, web address, e-mail address, downloading and uploading files from a remote site. Internet protocols: TCP/IP, SMTP, POP3, HTTP, HTTPS. Remote login and file transfer protocols: SSH, SFTP, FTP, SCP, TELNET, SMTP, TCP/IP.
- **Services available on the internet:** information retrieval, locating sites using search engines and finding people on the net;
- **Web services:** chat, email, video conferencing, e-Learning, e-Banking, e-Shopping, e-Reservation, e-Governance, e-Groups, social networking.
- **Mobile technologies:** SMS, MMS, 3G, 4G.

Unit 2: HTML

- **Introduction to web page designing using HTML:** create and save an HTML document, access a web page using a web browser.
- **HTML tags:** html, head, title, body, (attributes: text, background, bgcolor, link, vlink, alink), br (break), hr(horizontal rule), inserting comments, h1..h6 (heading), p (paragraph), b (bold), i (italics), u (underline), ul (unordered list), ol (ordered list), and li (list item). Description lists: dl, dt and dd. Attributes of ol (start, type), ul (type).

- **Font tags** (attributes: face, size, color).
- **Insert images:** img (attributes: src, width, height, alt), sup (superscript), sub (subscript).
- **HTML Forms:** Textbox, radio buttons, checkbox, password, list, combobox.
- **Embed audio and video** in a HTML page.
- **Create a table using the tags:** table, tr, th, td, rowspan, colspan.
- **Links:** significance of linking, anchor element (attributes: href, mailto), targets.
- **Cascading style sheets:** colour, background-colour, border-style, margin, height, width, outline, font (family, style, size), align, float.

Unit 3: Cyber ethics

- **Netiquettes.**
- **Software licenses** and the open source software movement.
- **Intellectual property rights**, plagiarism and digital property rights.
- **Freedom of information** and the digital divide.
- **E-commerce:** Privacy, fraud, secure data transmission.

Unit 4: Scratch or Python (Theory and Practical)

Alternative 1: Scratch

- Revision of the basics of Scratch.
- Sprite, tempo, variables, and events.
- Coordinates and conditionals.
- Drawing with iteration.
- Update variables repeatedly, iterative development, ask and answer blocks.
- Create games, animated images, stories and songs.

Alternative 2: Python - (provided as an option to children with special needs)

- Revision of Python basics.
- Conditionals: if, if-else statements.
- Loops: for, while (e.g., sum of first 10 natural numbers).
- Practice simple programs.

Lab Exercises

- Create static web pages.
- Use style sheets to enforce a format in an HTML page (CSS).
- Embed pictures, audio and videos in an HTML page.
- Add tables and frames in an HTML page.
- Decorate web pages using graphical elements.
- Create a website using several webpages. Students may use any open source or proprietary tool.
- Work with HTML forms: text box, radio buttons, checkbox, password, list, combo box.
- Write a blog using HTML pages discussing viruses, malware, spam and antiviruses
- Create a web page discussing plagiarism. List some reported cases of plagiarism and the consequent punishment meted out. Explain the nature of the punishment in different countries as per their IP laws.
- Create simple stories with Scratch (involving at least two objects/characters) and iteration OR write programs for finding the sum/product of first n natural numbers using Python

Breakup of marks for the Practicals

Serial No.	Unit Name	Marks
1.	**Lab Test**	**30 Marks**
	HTML (design one web page based on a diagram)	15
	Scratch or Python (write one program)	15
2.	**Report File + viva**	**10 Marks**
	Report file: • At least 10 HTML pages, and at least 5 Scratch/Python programs.	8
	Viva voce (based on the report file)	2
3.	**Project (that uses most of the concepts that have been learnt)**	**10**

CONTENTS

INTRODUCTION TO THE INTERNET

1

CHAPTER FOCUSES ON

- ✓ Introduction to Internet
- ✓ History of Internet
- ✓ Communication and working of Internet
- ✓ Who Manage the Internet?
- ✓ Application of Internet
- ✓ Important terminologies related to Internet

INTRODUCTION TO INTERNET

The Internet has provided an important medium to share the knowledge and stay in touch with each other anywhere in the world. Internet is the quickest and easiest way of communication with others. You can use email to share the information, pictures, videos etc. over the internet.

Remember those days when you have to wait for hours in a long queue to deposit or withdraw money from a bank. Well, these days are now history.

Now you can save your time and energy by using services of e-banking, online reservation, etc.

The Internet is a worldwide, publicly accessible network of interconnected computer networks that used to transmit data across the world. The Internet is a global network of computers, each computer connected to the Internet must have a unique address. This address is known as an IP address.

It is a 'network of networks' that consists of millions of domestic, academic, business, and government networks, which together carry various information and services, such as electronic mail, online chat, file transfer, the interlinked Web pages and other documents of the World Wide Web.

Internet is also used for providing services like E-banking, Blogging, Online shopping, Social networking etc. You will learn about all these services in the next chapter.

History of Internet

The Internet's growth has become explosive and it seems impossible to escape the bombardment of www.com which is seen constantly on television, magazines and heard on radio. Because the Internet has become such a large part of our lives, a good understanding is required to use this new tool most effectively.

The foundation of Internet was laid by the Department of Defense, USA in 1969. This network was named as ARPANET. This was the first step towards the creation of the Internet. Internet, however, came to the existence in proper way in the 1990's.

The Internet was the result of some visionary thinking by people in the early 1960s that saw great potential value in allowing computers to share information on research and development in scientific and military fields. ARPANET was the biggest step in development of internet.

Some key points of internet history:-

- The Internet matured in the 70's as a result of the TCP/IP architecture.
- Similarly, BITNET (Because It's Time Network) connected IBM mainframes around the educational community and the world to provide mail services beginning in 1981.

DO YOU KNOW?

J.C.R. Licklider of MIT first proposed a global network of computers in 1962, and moved over to the Defense Advanced Research Projects Agency (DARPA) in late 1962 to head the work to develop it.

- In 1986, the National Science Foundation funded NSF-Net as a cross country 56 Kbps backbone for the Internet. As the commands for e-mail, FTP, and telnet were standardized, it became a lot easier for non-technical people to learn to use net.

In 1991, the first user friendly interface to the Internet was developed at the University of Minnesota. As the Internet has become faster and increasingly accessible to non-technical communities, social networking and collaborative services have grown rapidly, enabling people to communicate and share interests in many more ways.

Communication and working of internet

Internet refers to a collection of infinite number of computers that are spread across the globe. It is a global network of similar or dissimilar networks across the world, with a purpose of sharing resources and to communicate with each other. It is also called as network of networks.

In a network, multiple computers across the world are connected with each other through different devices like wires, satellite etc. All computers network use protocol for communication. In this way different computers communicate with each other through internet as a single platform.

Protocols

It is a set of rules that govern communication between computers. Protocols specify secure interactions between the communicating computer devices. A network protocol defines rules and convictions of communication between network devices. For example, FTP and TCP/IP.

Address of your Computer over the Internet

The Internet is a global network of computers. Each computer connected to the Internet, must have a unique address. This address is known as an IP address. If you connect to the Internet through an Internet Service Provider (ISP), you are usually assigned a temporary IP address for the duration of your dial-in session.

Some Networking Devices

1. **Modem and it's working:** Modem takes it's name from the words Modulator- Demodulator which is actually a device and used for conversion of data signals. It enables a computer to receive and transmit data over the network.

   Computer information is stored digitally whereas information transmitted over telephone lines in the form of analog signals.

   A modem converts between these two forms:-

   Mo-Modulation:- Conversion of digital data to analog data.

   Dem-Demodulation:- Conversion of analog data to digital data.

Modem


Router

Repeater

2. **Router:-** Router is a small physical device that join multiple networks together.
3. **Repeater:-** Repeater is a network device that retransmits a received signal with more power to an extended geographical area. A repeater is implemented in computer networks to expand the coverage area of the network.

4. **Gateway:-** Gateway is a network point that acts as an entrance from one network to another network. A network gateway can be implemented completely in software or hardware, or as a combination of both.

Who Manages The Internet?

1. World Wide Web consortium (W3C)

The World Wide Web Consortium (W3C) is the main international standards organization for the World Wide Web (abbreviated WWW or W3). It was founded by Tim Berners-Lee at MIT, USA.

2. Internet Engineering Task Force (IETF)

The IETF's mission is "to make the Internet work better". It makes the Internet work better from an engineering point of view. It helps to standardize the working of internet.

3. Internet Corporation for Assigned Names and Numbers (ICANN)

On internet we communicate with each other with help of an address which is unique. ICANN issues and controls this unique address. ICANN coordinate the global Internet's system of unique identifiers, and to ensure stable and secure operation of the Internet's unique identifier systems.

Applications of Internet

- **E-mail:** By using internet we can communicate in a fraction of seconds with a person who is sitting in the other part of the world. Today for better communication, we can avail the facilities of e-mail.
- **Social Networking:** Today social networking sites have become an important part of the online community. A number of people use this facility to remain in touch with their nears and dears.
- **E-Commerce (Online Shopping):** In today's busy life most of us are interested to shop online. In countries like USA, most of consumers prefer to shop from home. We have many shopping sites on internet like amazon.com, snapdeal.com, ebay.com, flipcart.com, junglee.com, etc. Virtually anything can be bought or sold on the internet.
- **Entertainment:** On internet we can find all forms of entertainment from watching films to playing games online.
- **Information:** Information can be taken on any topic on the internet. It can be from any source worldwide that has a presence on the Internet. For example, Agriculture Advisers, Colleges, Universities, Banks, Purchasers and Supply companies.
- **Business tools:** Online management and business tools are very popular. For example, online banking or currency converters.
- **Discussion groups:** It is used to exchange your views with others over the Internet about your interests and views. Discussion groups are also very famous now a days.
- **Other Services:** Many services are provided on the internet such as online banking, job seeking, purchasing tickets for your favorite movies, paying bills, etc.

ACCESSING THE INTERNET

Dial-up Connection

A dial-up connection is used when your computer connects to internet via public switched telephone network (PSTN). Dial-up connection is a temporary connection.

Some features of a Dial-up connection:

- Ties up a telephone line for connecting to the Internet.
- Speed is up to a maximum of 56 Kbps.
- Internet is not always connected.

- Good availability since it does not require any extra infrastructure other than telephone lines.
- Not suitable for online gaming and video chat where we need high speed.

Broadband Connection

Broadband is made of two words Broad and Bandwidth. Broadband is often used to refer to a high bandwidth. Having a broadband connection means your web pages will load much faster than they do using your phone line. It provides a speed of 512 kbps or more.

Some features of a broadband connection:

1. It facilitates fast data transfer in large volumes.
2. The broadband Internet provides fast connecting speeds that are many time higher than the traditional dial-up connection.
3. A broadband Internet connection can be kept connected to the Internet continuously without attracting any additional charges. This also avoids frequent dialing or logging on to the provider's service while accessing the Internet.
4. We can make a telephone call while working on the Internet.
5. The running cost is comparatively less in case of broadband connections as compared to dial up services.
6. There are also many attractive plans for continuous users and business people.

Wireless Connection

Wireless networking is a method of transferring data between computers and other networking devices using radio frequency waves called Wi-Fi signals, or wireless signals, rather than physically connecting devices with cables. Computers must have a wireless adapter for wireless connectivity.

Advantages:

i. **Access:** A Wi-Fi network allows much easier access compared to a wired network. You can move computers without having to rewire or change settings. Laptops become truly portable, allowing you access anywhere within the wireless range.

ii. **Tidiness:** A Wi-Fi network means that you are no longer required to have large numbers of cables connecting across your office. You can also allow access to shared printers and other devices, which further reduces the number of cables and wires needed.

iii. **Easier Upgrading:** One of the main advantages of a wireless network is that you can add another computer more easily than on a wired network. This reduces the cost of upgrading or adding to your computers.

iv. **Connect while Travelling:** If you have a laptop with the internet data- card, you can connect to the internet while travelling.

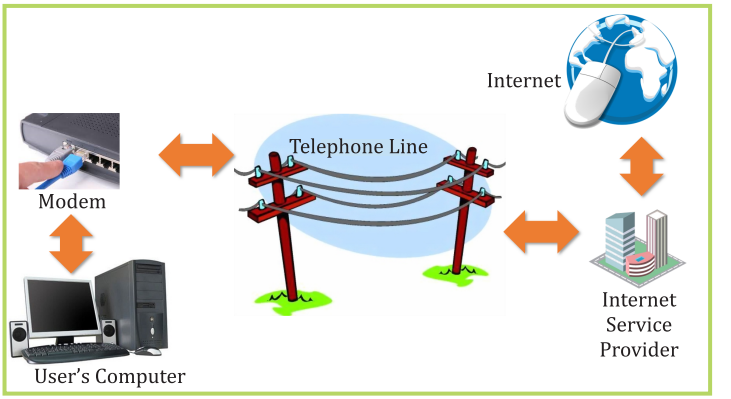
Connecting Your PC to Internet (using broadband connection)

You need to subscribe to an Internet Service Provider (ISP) and a device known as modem to access the internet. Following items you will need to connect your PC to the Internet:

DSL modem, Ethernet cables/phone cable and/or installation disc/PC suite Disc.)

Once you have all the above items, you will need to connect your computer with modem. Follow these steps to connect PC to internet:-

1. Plug the device (modem) into an electrical outlet.



2. Plug one end of a phone cord or cable into the wide area network (WAN) port of the device, and then plug the other end into the wall jack (splitter). The WAN port should be labeled 'WAN'. (DSL users: Do not use a DSL filter on the phone line.)
3. Plug one end of an Ethernet cable into the local area network (LAN) port on the device, and then plug the other end into the networking port of the computer that you want to connect to the Internet. The LAN port should be labeled 'LAN'. (If you are connecting wirelessly, skip this step.)
4. Open the Connect to the Internet wizard by clicking the Start button ® Control Panel, clicking Network and Internet ® Network and Sharing Center ® Set up a connection or network.
5. The Set Up a Connection or Network dialog box appears.
6. Click on Connect to the Internet option and follow the instructions to complete the wizard.

SOME IMPORTANT INTERNET TERMINOLOGIES

i. **World Wide Web (WWW):** World Wide Web is the largest collection of Information on the Internet. It contains millions of websites that provide information in the form of text, animation, picture and videos. Thus, Internet is like a library that contains millions of books.

ii. **Web:** The Web is a system of interlinked hypertext documents accessed via the Internet. It is just the short form of World Wide Web or WWW.

iii. **Web Servers:** Web server can refer to either the hardware (the computer)or the software (the computer application) that helps to deliver content that can be accessed through the Internet.

iv. **Website:** A Website is a collection of related web pages that provide information about many things such as a person, business organization, educational and games institutes. A website is like a book that contains many pages.

v. **Homepage:** When we enter the website address, the website will be opened. The first page of any website is known as Homepage. It consists of text, audio, video, pictures, animation and links.

vi. **Web Pages:** It is the part of a Website. It is stored in an electronic form on a computer connected to the Internet.

vii. **Hypertext Transfer Protocol (HTTP):** It is a network protocol, used to deliver all files and other data (collectively called resources) on the World Wide Web, whether they're text files, images, audio, or video files. HTTP defines that how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

Working of HTTP protocol

a. When the client opens a web browser, HTTP protocol connects to a web browser.
b. In second step, it sends a request to server.
c. In final step, server responds to client and user can see all the pages on the screen.

viii. **Web Browser:** It is an application software used to retrieve and display web pages. It can display information in different formats such as audio, video, text, images or with combination of all. It helps to work with the internet. Some popular web browsers are Internet Explorer, Mozilla Firefox, Google Chrome, Safari, etc.

There are two type of browsers:-

a. Text web browsers:- They support only text contents. 'Lynx' is a browser of this category.

b. Graphical web browser:- They are more advanced than text browsers. They support both text and graphical information. Internet Explorer, Mozilla Firefox, Google Chrome, etc. modern browsers belong to this category.

ix. **HTML:** A HTML stands for Hypertext Markup Language. It is a computer language which is used to create and design websites. HTML defines the structure and layout of Web Document.

x. **Website Address:** It is the address of a website on the internet. Every website on the internet has its unique web address, without which it cannot be acessed. It is also called Uniform Resource Locator (URL).

xi. **E-mail:** An e-mail address defines the location of an individual's mailbox on the Internet. An e-mail address consists of two parts separated by '@' (at the rate of) symbol. It is possible to send messages to anyone around the world if you know the person's e-mail address.

WEB CLIENT

Web client is an application that communicates with a web server using an HTTP protocol. A web client is defined as a computer that receives from and gives information to the web server. Example of web client is a web browser. It is also called as thin browser because it does not execute heavy-duty operations such as querying databases, performing complex business tasks, or connecting to legacy applications. It consists of the following two components:

- Dynamic web page
- Web browser

Dynamic web pages are produced by components that run in the web tier whereas a web browser delivers web pages received from the server.

Glossary

BITNET	:	Because It's Time NETwork.
FTP	:	Fill Transfer Protocol.
TCP	:	Transmission Control Protocol.
IP	:	Internet Protocol.
ISP	:	Internet Service Provider.
W3C	:	World Wide Web Consortium.
IETF	:	Internet Engineering Task Force.
ICANN	:	Internet Corporation for Assigned Names and Numbers.

You have learned

- ✓ The foundation of network was laid by the Department of Defense, USA in 1969.
- ✓ In a network multiple computers are connected with each other through different devices like wires, satellite, etc.
- ✓ A network protocol defines rules and conventions for communication between network devices.
- ✓ TCP uses a set of rules to exchange messages with other Internet points at the information packet level.
- ✓ IP uses a set of rules to send and receive messages at the Internet address level.
- ✓ W3C is the main international standards organization for the World Wide Web.
- ✓ File Transfer Protocol, or FTP is a protocol used for transferring files from one computer to another - typically from your computer to a web server.
- ✓ HTTP is a network protocol used to deliver all files and other data (collectively called resources) on the World Wide Web.

Solved Questions

1. What is Internet?

Ans. Internet refers to a collection of infinite number of computers that are spread all across the globe. IT is a global network of similar or dissimilar network across the world with a purpose of so that users can share resources and communicate with each other. It is also called as network of networks.

2. Who manages the Internet?

Ans. Following are the organization who helps to manage the Internet:-

- W3C (World Wide Web consortium)
- INTERNET ENGINEERING TASK FORCE
- ICANN (Internet Corporation for Assigned Names and Numbers)

3. What is a Dial-up connection?

Ans. A dial-up connection is used when your computer connects to internet via public switched telephone network (PSTN). Dial-up connection is a temporary connection that ties up a telephone line for connecting to the Internet. Its Speed is up to a maximum of 56 Kbps.

4. Define the following terms:

a) Surfing

b) Searching the Internet

Ans. a) Surfing:- It means retrieving information from website using internet.

b) Searching the Internet:- Exploring various websites and web pages on the internet for the desired information.

5. What is the application of the Internet?

Ans. Following are the applications of Internet:-

- Provides information about latest news.
- Provides information about medical issues.
- Provides information about latest jobs in different fields.
- Allow facilities of social networking.
- Allow us to send SMS to mobile phones free of costs.

6. Define TCP/IP and its application.

Ans. Transmission Control Protocol (TCP), which uses a set of rules to exchange messages with other Internet points at the information packet level.

- Internet Protocol (IP) uses a set of rules to exchange messages over the internet.
- Additional protocols that include the Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP), each with defined sets of rules to use with corresponding programs elsewhere on the Internet.

7. Write a short note on history of internet.

Ans. Internet was firstly developed in USA and used by the Department of Defense. This network was known as ARPANET which was established in 1969. This was regarded to be the first step towards the creation of the Internet. Internet, however, came to be used more widely in the 1990's and ARPANET was shutdown in 1990's.

In 1991, the first friendly interface of the Internet was developed at the University of Minnesota.

8. Define Modem.

Ans. Modem takes it's name from the words Modulator-Demodulator which is actually a device, used for conversion of data signals. It enables a computer to transmit data over the network. Computer information is stored digitally whereas information is transmitted over telephone lines in the form of analog waves.

9. What is a Web server?

Ans. It is a computer program that opens the web page and response when a client computer request to it.

10. What is a Web site?

Ans. Web site is collection of Web-pages and it contains text, images, videos and other multimedia elements.

Exercise-1

A. Choose the correct answer.

1. The 'www' uses the protocol

   a) FTP b) HTTP

   c) Web d) All of these

2. The ARPANET was shut down in

   a) 1995 b) 1994

   c) 1992 d) 1990

3. A web-site is a collection of

   a) Graphic files b) HTML pages

   c) Audio video files d) All of these

4. The full form of WWW is _____

   a) World white web b) World whole web

   c) World wide web d) None of these

5. A ___ is a network point that acts as an entrance for another network.

   a) Gateway b) Back-bone

   c) Cables d) Internet

6. ISP stands for

   a) Internal service provider b) Internet service provider

   c) Internet setting program d) International service provider

7. Some popular ISPs in India are

   a) Airtel b) BSNL

   c) Reliance d) All of these

8. You can subscribe for an internet connection to an___

   a) Company b) Organization

   c) ISP d) None of these

9. URL is a _____ of a web page

   a) Temporary Address b) Unique address

   c) Permanent Address d) None of these

10. Internet explorer is a

    a) Web browser b) Web server

    c) Search engine d) None of these

B. Short answer type questions.

1. How many types of web browsers are there?
2. What is the full form of IETF?
3. What is use of a search engine?
4. Write two points about ARPANET.
5. What is the use of Website address?
6. Define Internet.
7. What is a Broadband connection?
8. Write any two points about HTTP?
9. Describe a website.

C. Long answer types questions.

1. Explain working of a web browser.
2. Explain working of a web server.
3. What are the uses of Internet?
4. Describe the e-mail services.
5. How is WWW different from the Internet.
6. Differentiate Dial up connection and Wireless connection.
7. Differentiate Dial up connection and Broadband connection.
8. Write a short note on history of Internet.
9. Explain working of Protocol with example.
10. Explain working of TCP/IP protocol.

Exercise-2

A. Fill in the blanks.

1. WWW stands for _____.
2. Google Chrome is a _____ based browser.
3. A software used to open web pages on the Internet is called a _____.
4. Airtel is an example of _____.
5. _____ is responsible for developing and promoting internet standards.
6. ARPANET was shutdown in _____.
7. _____ provides a quick way of communication over the internet.
8. ISP stands for _____.
9. W3C stands for _____.

B. State true or false.

1. Google is a web browser.
2. Mozilla is a search engine.
3. IETF stands for International Engineering Task Force.
4. Dial-up connection provides speed up to 256 kb/s.
5. Broad band connection provides speed up to 256 kb/s.
6. Wire- less provides flexible internet connection without wire.
7. Web server is less power-full than client computer.
8. HTML stands for Hyper Text Makup Language.
9. URL stands for Uniform resource locator.
10. A web browser allows you to see calendar.

C. Practical/ Lab Activity

1. The RBI is planning to expand its connectivity with all major banks of India. The plan includes providing TCP connectivity through HTTP for easy access points and seeking help from some ISP's to join hands in this venture. In addition, there is a plan to set up IIS and SMTP servers. Some banks will go for the ADSI, line while others will use leased line connectivity to access these services. The RBI is also talking help of IIT professors in this venture. [CBSE sample paper 2011, Term II]

   Discuss the advantages and disadvantages of TCP and HTTP protocols as far as above mentioned news concerned.

2. A school has two separate computer networks. One is used for keeping pupil and other staff records. The other is for pupils to use in lessons to help with their learning and also to store their work.

   Peoples use the Internet quite frequently in their lessons to help them with their work. Discuss the advantage and disadvantage of this as far as peoples are concerned.

3. Shyam is a business person who travels a lot. He want an internet connection that will help him to keep in touch with his business all the time.

   a) Suggest the type of internet connections that he should use.

   b) List two ways of accessing the internet through a wireless connection.

4. Suppose you are studying in Xth class. Your teacher told you to gather information on the topic independence of India. List the entire networking device, which you used to gather the information about the topic.

INTERNET AND WEB SERVICES

2

CHAPTER FOCUSES ON

- ✓ Retrieve Information from internet
- ✓ Application of E-mail
- ✓ Chatting and video conferencing
- ✓ Blogs, Newsgroup, E-learning and E-commerce
- ✓ Online shopping and reservation
- ✓ Social networking and Web 2.0

In this chapter, we are going to learn about information retrieval from internet, different web services available on internet (with their uses).

Note: A web browser lets you view all the beautiful pictures, text, 3D images, videos and animations present in the websites.

Retrieving Information from INTERNET

To retrieve information from the web-sites you need their unique address known as URL stands for Uniform Resource Locator. A URL is a formatted text string used by Web browsers, e-mail clients and other software to identify a network resource on the Internet. Network resources are files that can be plain Web pages, other text documents, graphics, or programs.

URL strings consist of three parts (see figure 1):

1. Network Protocol
2. Host Name or Address
3. File or Resource Location

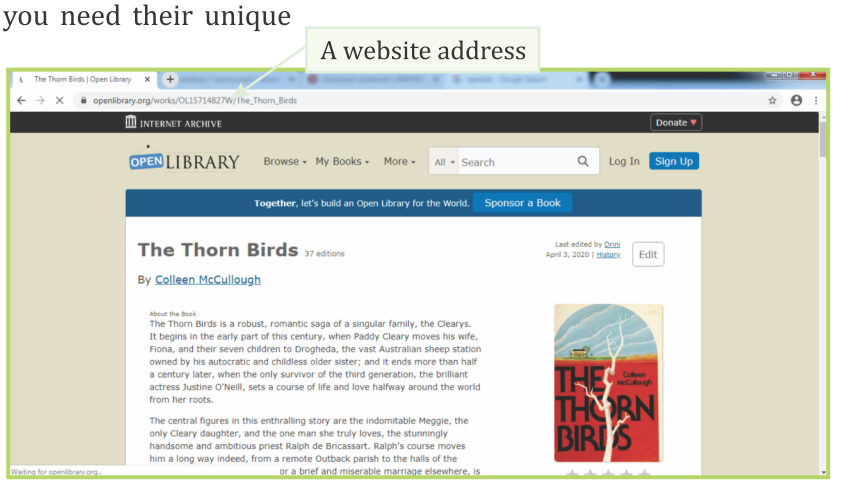


Figure 1

E-MAIL (ELECTRONIC MAIL)

E-mail or Electronic mail is a method to exchange messages in digital form. It is one of the most important means of communication. These days e-mail operates across the country on either a small network or on a global network. An e-mail message consists of three components, the message envelope, the message header, and the message body. The message header contains control information, including, a composer's email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp.

Getting Started with E-mail

The most widely used Internet-based communication tool is e-mail. The term e-mail refers to electronic mail. E-mail is a communication system that sends and receives messages through the Internet by using specific email addresses or e-mail IDs. There are so many mail servers available such as Yahoo, Gmail, Hotmail and Rediffmail. E-mail helps in sending and receiving of messages. Through e-mail we can send any kind of information such as text messages, music files, video files, images etc. It stores the mails in the inbox and allows the user to read them at any time.

Note: An e-mail account is required to send or receive mails.

Advantages of E-mail

E-mail offers many advantages over traditional mailing system. Some of the advantages are as follows:

- An e-mail is very fast. It is received and delivered within the seconds from anywhere in the world.
- E-mail is very cheap mean of communication as compare to other system.
- Sending and receiving an e-mail is very easy and convenient. Many types of files such as text files, audio, videos and images can be sent as an attachment through an e-mail.

E-mail Address

An e-mail address defines the location of an individual's mailbox on the Internet. An e-mail address consists of two parts separated by '@' (at the rate of) symbol.

It is possible to send messages to anyone around the world if you know the person's e-mail address.

A website name and an e-mail address

A website name: **http://www.abc.com**

An e-mail address: **Info@abc.com**

Some popular e-mail service providers allow you to create a free e-mail account.

- http://www.gmail.com
- http://www.mail.yahoo.com
- http://www.hotmail.com
- http://www.rediffmail.com

Keep one important thing in our mind that we are taking Gmail.com as e-mail service provider and all the options are based on Gmail's e-mail account interface.

To create an e-mail account in Gmail.com, just follow the given steps-

1. Open the Browser (e.g. Internet Explorer).
2. Type www.gmail.com in the address bar of the browser.
3. Click on 'Create an Account' button given on the top-right side of the Gmail.com home page.
4. Fill the form carefully according to the given instructions.
5. At last, click on 'I Accept. Create my account.' button.

Look at the images given below (figure 2a and 2b).

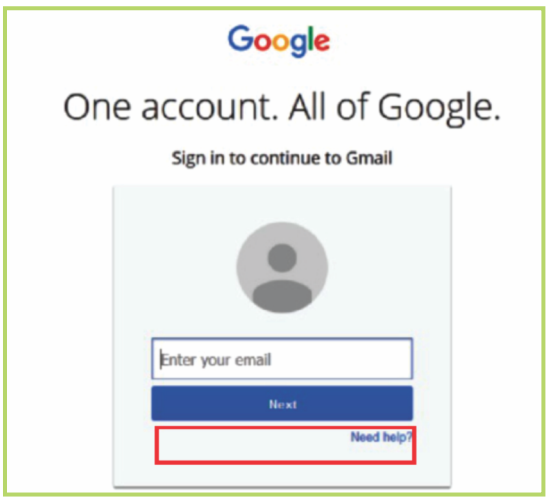


Figure 2a

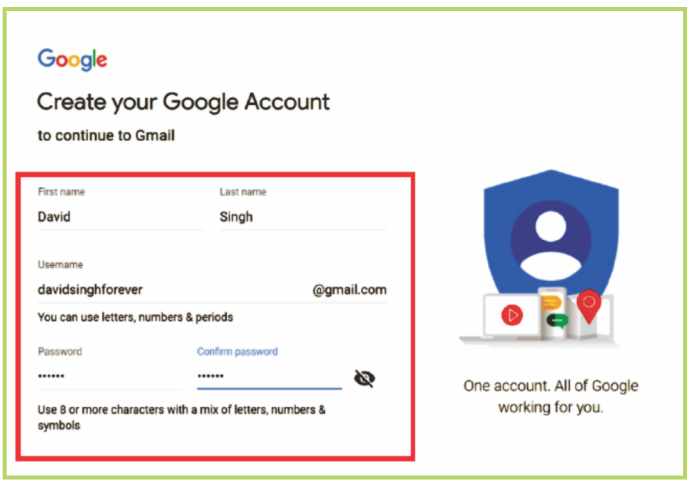


Figure 2b

E-mail Account Interface

As soon as your e-mail account will be created you will see your e-mail account interface. You can also login into your e-mail account using your e-mail and password. To login you need to enter the username and password at the home of www.gmail.com (figure 3).

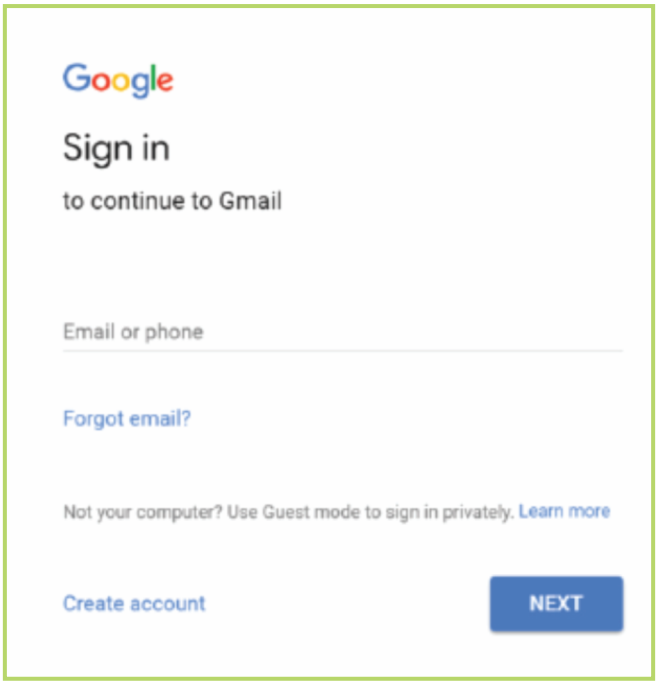


Figure 3

After logging into your account, the e-mail account interface appears. This will look like as the image given below :-

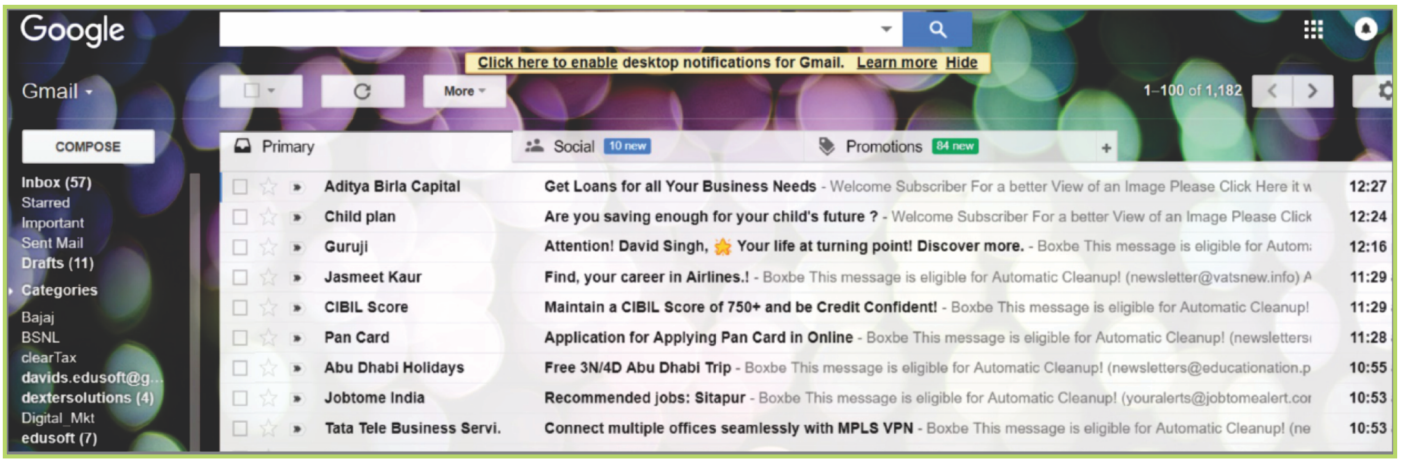


Figure 4

E-mail Account Components

An email account consists of the following major components (figure 4).

(a) **Inbox-** This is the place where all incoming mails are being stored.

(b) **Sent Mail-** This is the place where all sent mails are being stored.

(c) **Drafts-** This is place where those mails are stored which we have composed but do not wish to send right now and keep them for later use.

(d) **Trash-** This is the place where all deleted mails are stored.

(e) **Chat-** This is the place where all chatting messages are being stored.

(f) **Spam-** This is the place where unauthorized mails are stored.

(g) **All Mail-** It shows all the mails of Gmail such as Deleted, Incoming, Spam mails, etc.

Send an E-mail

If you want to send a mail to anyone, you just need to follow the given steps:

(a) Click on 'Compose Mail' button.

(b) Type the e-mail address of receiver.

(c) Type the subject name.

(d) Type the message and click on 'Send' button (figure 5).

The e-mail will be sent to the mailing address within seconds.

Additionally, Gmail.com provides tools to format you e-mail message. For that, it has fonts, color, size, links, bullets, etc. that we are generally use in WordPad or MS Word for creating or designing the documents.

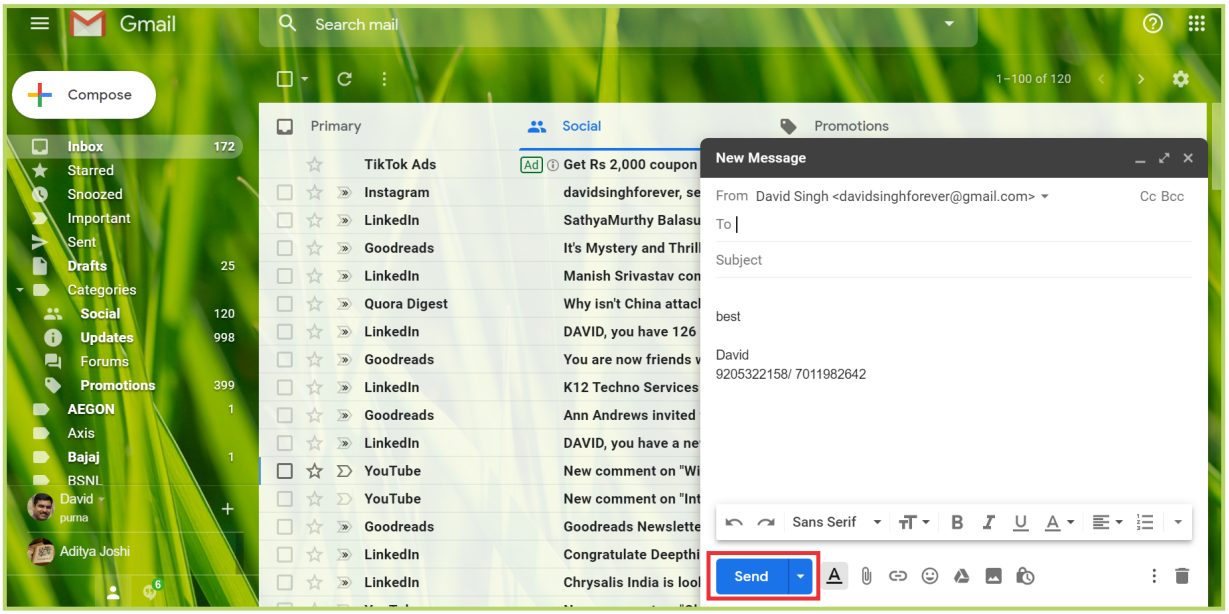


Figure 5

Forward and Reply an Incoming Mail

Forward mail option is used to send a copy of the received mail to others. For this, you just need to do the following steps-

1. Open the mail from 'Inbox'.
2. Click on 'Forward' link button.
3. Type the e-mail addresses to whom you want to send the mail. (You don't need to type message this time.)
4. Click on 'Send' button.

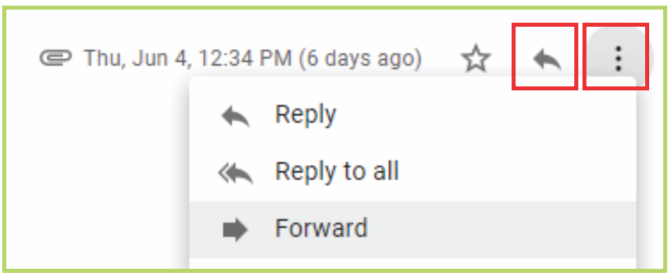


Figure 6

Note: You can send email to multiple person by separating the email addresses using comma (,).

Reply mail option is used to reply the answer/opinion/suggestion, etc. to the person who has sent you the mail. For this, you just need to do the following steps -

1. Open the mail from 'Inbox'.
2. Click on the 'Reply' button.

3. Type the message. (You don't need to type email address this time).

4. Click on 'Send' button.

The message will be sent to the same person from whom you have received the mail along with the copy of same mail.

Create a Draft of Mail

Sometimes, we are creating an e-mail to send someone but suddenly decide not to send it and wish to save this mail and send it later. For this purpose the Draft is used. It is also used if you are typing an e-mail and unfortunately you lose the connection at that time the mail will automatically be saved into the Draft.

E-mails are automatically saved after few seconds. If you neither want to send nor save then click on Discard button, the mail will be discarded (figure 7).

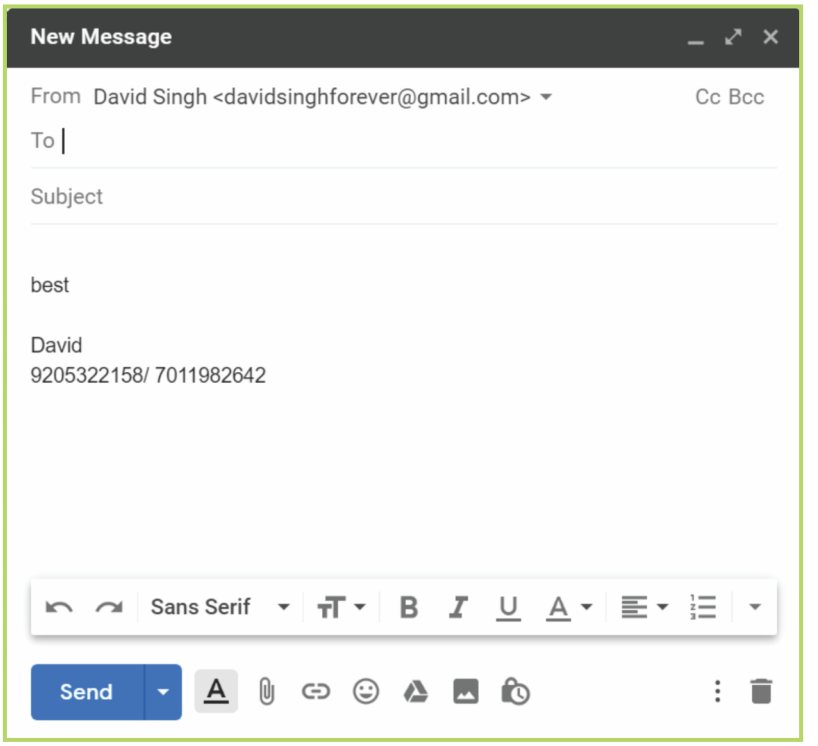


Figure 7

Delete Mails

We can delete the mails very easily. To delete the mail, follow the given steps -

1. Select the mail(s) in 'Inbox', which you want to delete.

2. Click on 'Delete' button.

Figure 8

Note: Deleted mails can be regained into Inbox. You just need to click on trash and select the mail from there. Now click on 'Move' to button and then click on 'Inbox'. The mail will be moved to 'Inbox' again.

Add/Manage E-mail Contacts

E-mail server (For example, www.gmail.com) manages the address book automatically. It saves all e-mail addresses to which you have ever sent the mail at least once. But if you want to add the details of person, you can do so. To manage the detailed address book follow the given steps-

1. Click on Gmail list box and select 'Contacts' option (figure 9a). A new frame appears.

2. Select the 'Create Contact' button, a text box appears [figure b(i)].

3. Click on 'Create a Contact' button, a text box appears below the button [figure 9b(ii)].
4. Enter the name of the person.
5. Click on 'Add' button. The entered name appears in the contact list.
6. Click on the new contact name to enter other fields. A form appears to enter the other fields [figure 9b(iii)].
7. Enter the required fields and go back to contact list by clicking on back button.

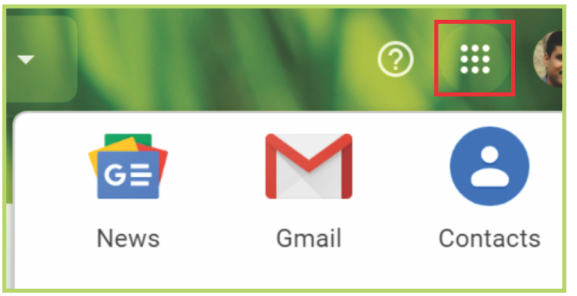


Figure 9a

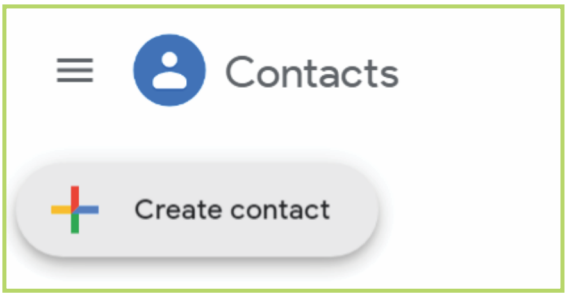


Figure 9b(i)

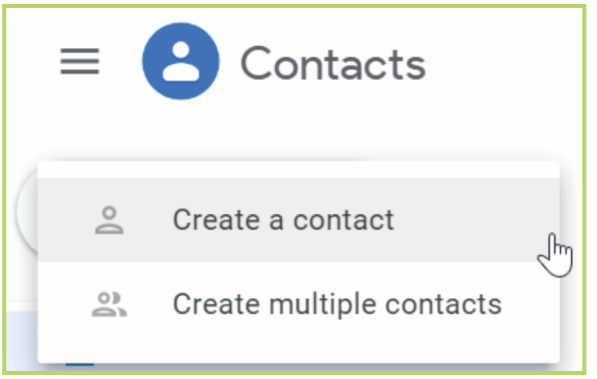


Figure 9b(ii)

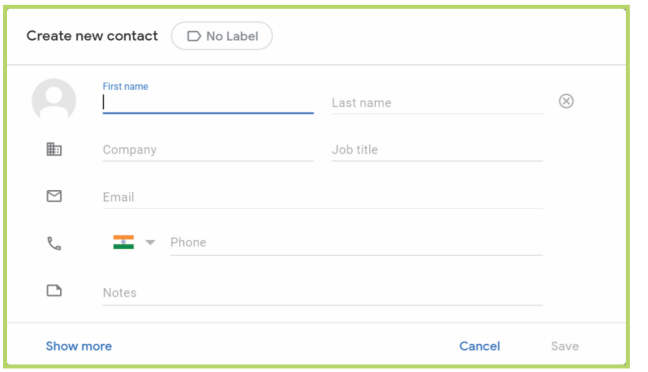


Figure 9b(iii)

To view all the contacts at once-

- Click on Gmail list box and select 'Contacts' option (figure 10a). A new frame appears.

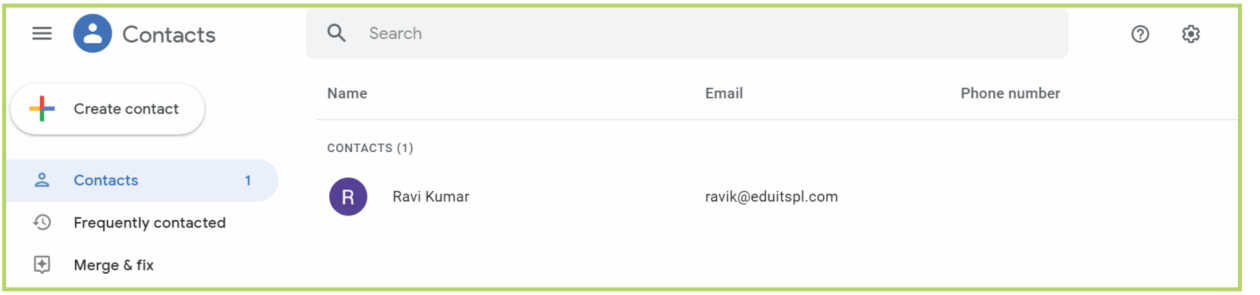


Figure 10a(i)

To export the (selected) contacts -

- Click on 'Gmail' list box and select 'Contacts' option [figure 10a(i)].. A new frame appears.
- Select the required contacts and click on 'More' button [figure 10a(ii)].. Select the 'Export' option.
- The 'Export Contacts' dialog box appears.
- Select the required fields and click on 'Export' button (figure 10b).

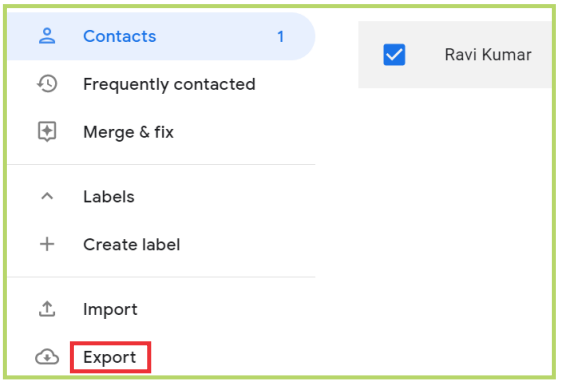


Figure 10a(ii)

On line web applications keep changing rapidly. In recent versions of Gmail web application, the Contact option is found in Google Apps drop-down menu. This menu is located on in top-right corner ( ).

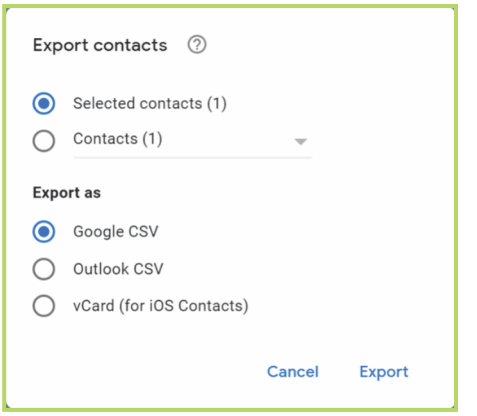


Figure 10b

To export all contacts -

- Click on 'Gmail' list box and select 'Contacts' option. A new frame appears.
- Click on'Export' option.
- The 'Export Contacts' dialog box appears.
- Select the 'All contacts' option and the export format.
- At last Click on 'Export' button.

CHATTING ON INTERNET

Chatting is a way through which we can make text/audio/video conversation with anyone instantly. Type your message and he will reply. This way is also known as Instant Messaging. Even there is no charge for it. Now a days, technology has grown up at the stage like where we can talk with anyone on internet. Talking with anyone on internet is called voice chatting.

Apart from voice chatting, if we have Head Phone, Microphone and Web Camera like devices with good internet connection, then we can chat with anyone by face to face. This is called the video chatting.

The most common types of chat are:

(1) **Internet Relay Chatting (IRC):** This is most common chat medium. IRC has become very popular as more people get connected to the Internet because it enables people connected anywhere on the Internet to join in live discussions. IRC is not limited to just two participants.

It is an application layer protocol that facilitates transfer of messages in the form of text. The chat process works on a client/server model of networking.

(2) **Web Chatting:** A web chat is a system that allows users to communicate in real time (using easily accessible web interfaces). It is a type of internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software.

(3) **Instant Messenger Chatting:** It is a type of online chat which offers real-time text transmission over the Internet. These are special application programs which need to be downloaded separately. These are also known as Messenger Services Applications. These are used by the registered users. It has all the chat facilities and commands. We just need to open the messenger and start using it. Some of the most popularly used messengers are Yahoo Messenger, GTalk, RedisffBol, MSN Messenger, Skype, etc.

Chatting From E-mail Inbox (Instant Relay Chatting)

These days, most of the popular e-mail service providers are offering Instant Relay Chatting from e-mail inbox. Users do not need to install any other application to chat with anyone. But these chatting services have some limited means of chatting options.

Steps to chat with someone using gmail.com (instant messenger) are given below:

1. 'Sign In' to your Gmail account.
2. Search the person online from left side of the taskbar (Green or Red or Yellow bullet symbols show that person is online).
3. Click on the name of the person. A chat box will appear.
4. Now start chatting.

Note: We can chat only when both the user are using the same service provider's email and chat service. If you want to use some other email account and then chat with someone, you have to use websites like Facebook, Skype, etc. These Websites facilitates its user to chat with anyone but he/she must be a Facebook user.

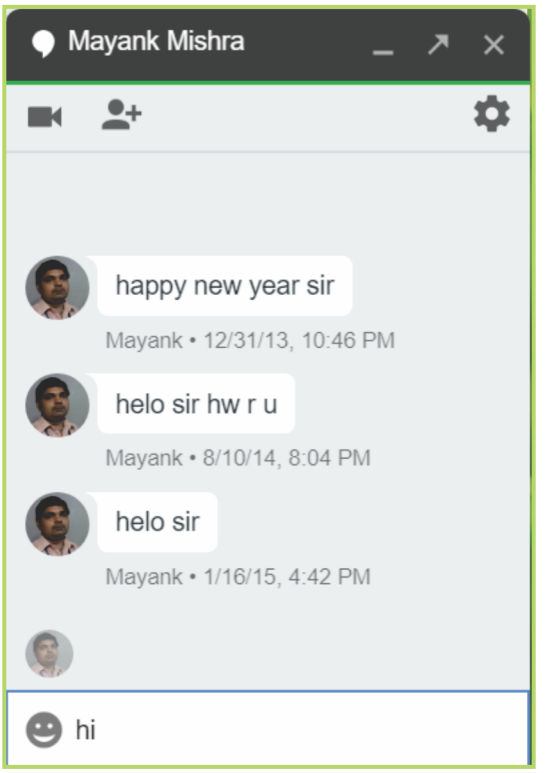


Figure 11

VOICE CHATTING

We can chat with our friends not only with text and typing but with sounds as well. This is called voice chatting.

Using this facility, we can talk with someone just similar to talking on phone or mobile. It is free of charge for unlimited time. For this facility, we need to have a good internet connection, a multimedia computer with Head-Phone with Microphone.

Voice chat is a modern form of communication used on the Internet. The means of communicating with voice chat is through any of the messengers, mainly Skype, Yahoo! Messenger, GTalk, Facebook, AOL Instant Messenger, in Speak Communicator or Windows Live Messenger etc. Voice chat has led to a significant increase in distant communications where two or more people from opposite ends of the world can talk almost free of cost.

VIDEO CHATTING OR VIDEO CONFERENCING

Video Chatting is also known as face to face chatting. It is technique using which we can talk with someone face to face. For making video calls we should have a good integrated camera as well as high speed internet connection for uninterrupted video chatting.

Video conferencing is conducted with the help of telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously (figure 12). It has also been called 'visual collaboration' and is a type of groupware.

Figure 12

Note: Video chatting is used personally but Video conferencing is used professionally. It means video chatting is done from home or café but Video conferencing is done by employers from offices for their business purposes. Web camera is required for both video chatting and conferencing.

Components of Video Conferencing

Video conferencing can conveniently be broken down into three components:

- The **Conference Environment**, that is the classroom, conference room or any other suitable environment to do video conference.
- The **Conference Equipment**, that converts the images and speech of the participants into a format that enables transmission to a remote site over the network.
- The **Conference Network** that links the sites together.

Types of Video Conferencing

Video-enabled meetings happen in two distinct ways:

1. **Point-to-Point Video conferencing:** In point-to-point, the simplest scenario is whereone person or group is connected to another. The physical components (i.e. microphone and camera) that enable the meeting to take place are often integrated into desktop computing solutions, like a laptop or tablet, or can be combined into dedicated, room-based hardware solutions.

   Where desktop solutions tend to be used by individuals, room-based solutions utilise dedicated VC technology where groups of people can be seen, heard and can naturally participate in the meeting.

2. **Multipoint Video conferencing:** In multipoint video conferencing, three or morelocations are connected together, where all participants can see and hear each other, as well as see any content being shared during the meeting.

Advantages of Video Conferencing

Some advantages of video conferencing are:

- **Fast and Convenient for Meetings:** As the video conference can be held during working hours, people need not to travel to get to the location of the conference. This makes Internet video conferencing a fast and convenient way to hold meetings.
- **Saves Money:** The initial video conferencing cost is fairly high but ultimately costs are reduced as people will not have to travel or fly to the other side of the world to attend the meetings.
- **Saves Time:** Just walking into another room in your office building takes less time than travelling to another location to attend a meeting. As every person necessary to make decisions can join the video conference, this is the ultimate way to speed up corporate decisions.
- **Useful Real-time Technology:** It is a useful technology for real-time telemedicine and telenursing applications. It helps the doctors in discussing cases and providing diagnosis to patients across the globe.

Disadvantages of Video Conferencing

Some disadvantages of video conferencing are:

- **Setup can be Relatively Expensive:** The initial setup costs for video conferencing technology can be quite costly, depending upon how big a group of people should be able to converse via this technology.
- **The Lack of Familiarity with Technology Used can be Disconcerting:** People who need to use video conferencing should be trained to handle the equipment. Someone has to maintain the system and needs to know what has to be done in case of failure or other problems that might arise.
- **The Problem of Time Zones:** People in different countries or even in different parts of the country live in different time zones. This can make it complicated to set up video conference meetings.

- **Extra Space Needed:** As the devices and the screen have to be set up in a permanent environment to keep the connection stable and to keep the entire setup running, it is best to set aside a special room within the office building for video conferencing. This will take up office space that could otherwise be used for personnel or normal meetings.

SKYPE (TEXT CHAT, VOICE CHAT, VIDEO CHAT AND MORE)

Skype is a software application that allows users to make voice and video calls and chat over the Internet. Calls to other users within the Skype service are free, while calls to both traditional land line telephones and mobile phones can be made for a fee using a debit-based user account system. Skype has also become popular for its additional features which include instant messaging, file transfer, and video conferencing.

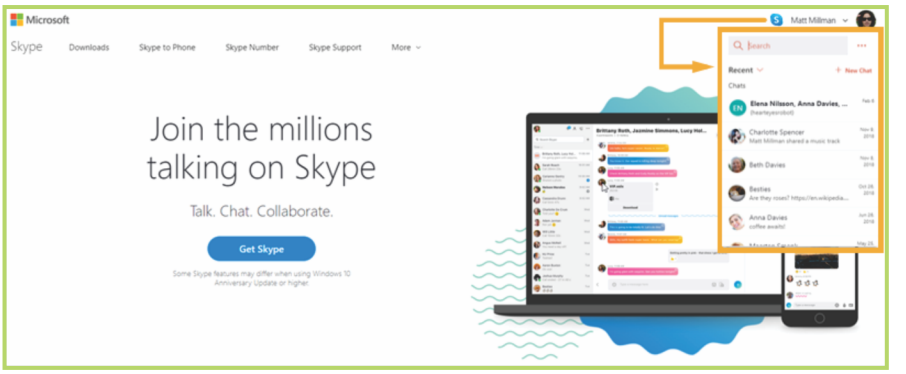


Figure 13

Note: Skype is a platform independent language. It can be installed on any operating system. We can create e-mail account from any e-mail service provider website and use that account on Skype.

Steps to use Skype are,

1. Download Skype application from Skype.com.
2. Install Skype application.
3. Create a Skype account using any email account.
4. Add friends by asking their mail IDs.
5. Now, you can start Text Messaging/Voice Calls/Video Calls/File Transfer.

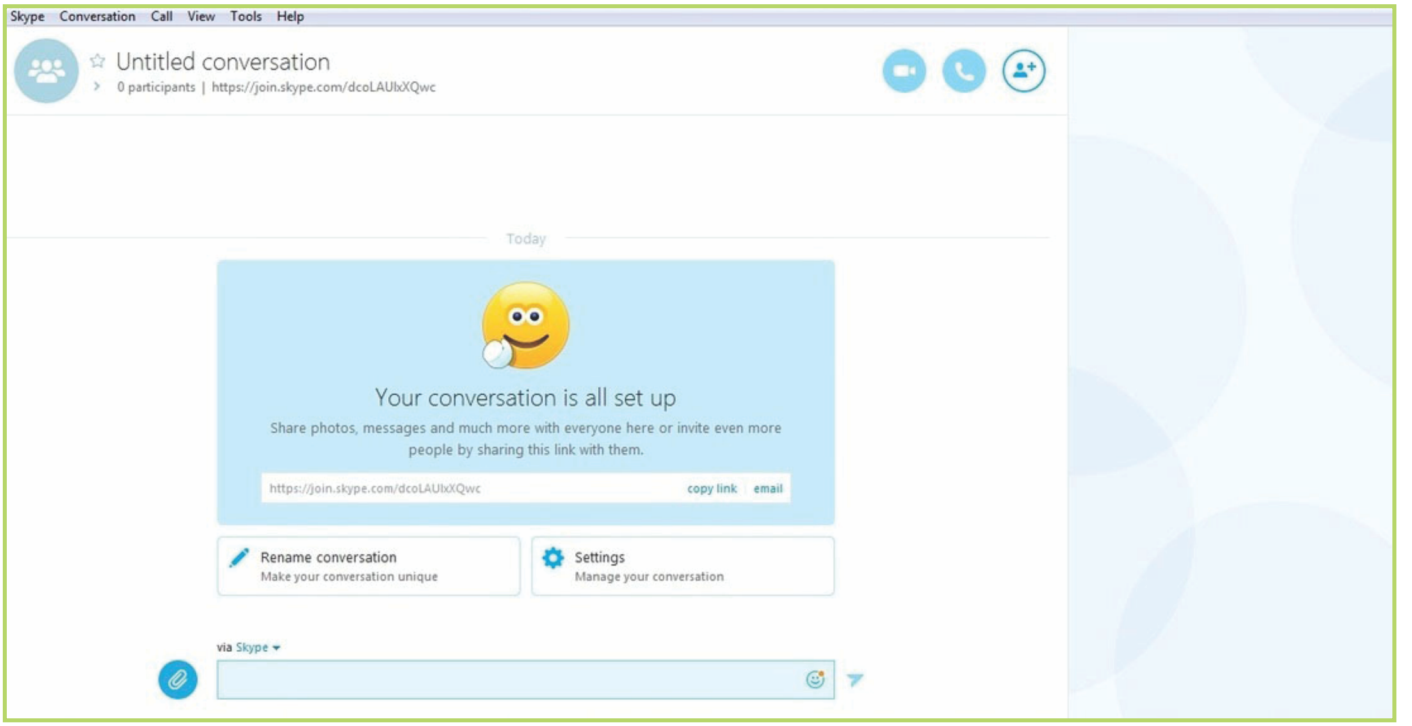


Figure 14

Locating Sites using Search Engine

A search engine is a computer program that searches for information on the web. The most popular search engine is Google. Some other search engines are Yahoo Search and Bing. The various search engines available today are:

Google: It was originally called BackRub. It is the most popular search engine globally.

Bing: It was launched in 2009 by Microsoft. It is the latest web-based search engine that also delivers Yahoo's results.

Ask: It was launched in 1996 and was originally known as Ask Jeeves. It includes support for match, dictionary, and conversation question.

AltaVista: It was launched by Digital Equipment Corporation in 1995. Since 2003, it is powered by Yahoo technology.

AOL Search: It is powered by Google.

LYCOS: It is top 5 internet portal and 13th largest online property according to Media Matrix.

Alexa: It is subsidiary of Amazon and used for providing website traffic information.

To locate a website on the internet, follow the given steps:

Step 1: Open the Google home page.

Step 2: Type the website address on the address bar.

OR

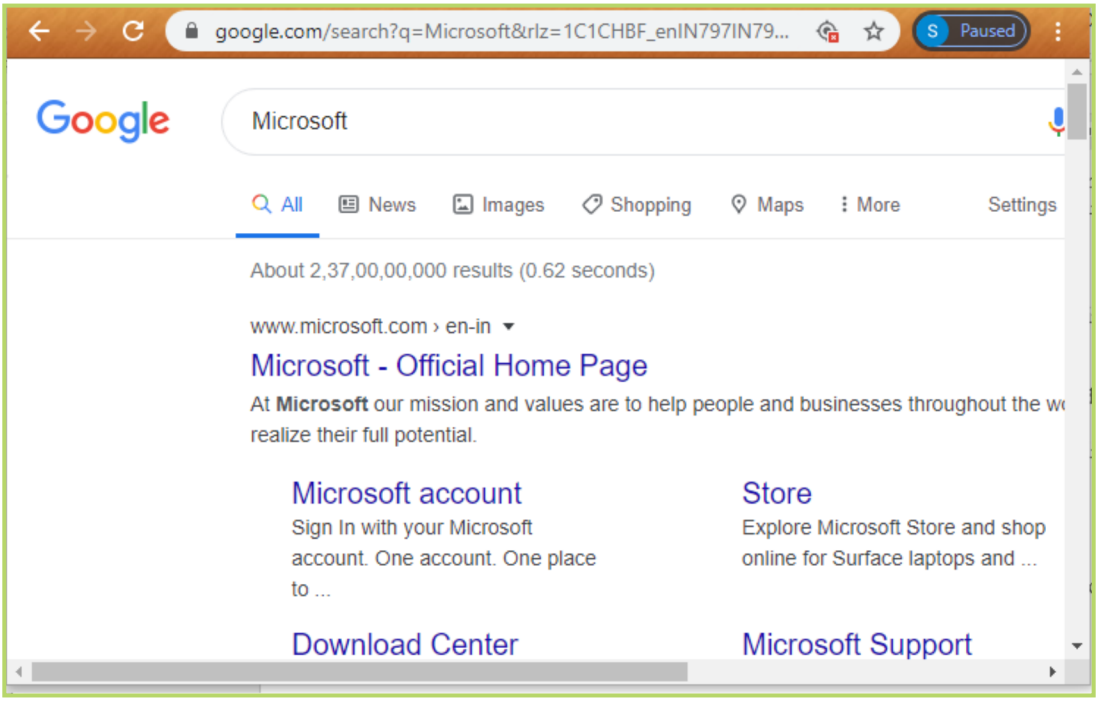


Figure 15: Search the data and click on the corresponding website

Step 2: Type the data to be search for and press the Enter key. A number of websites will appear. Click on the name of the website to open its home page.

Finding People On Internet

There are various using which you can search for people on the internet. In India, Indian People Directory(IPD) is a database that contains public information that can be used to find friends and family with whom you've lost touch. You can search for people using names and locations or phone numbers. You can also search using email addresses.

Step 1: Open Google home page.

Step 2: Type the address www. indianpeopledirectory.com and press Enter key. The interface of IPD appears.

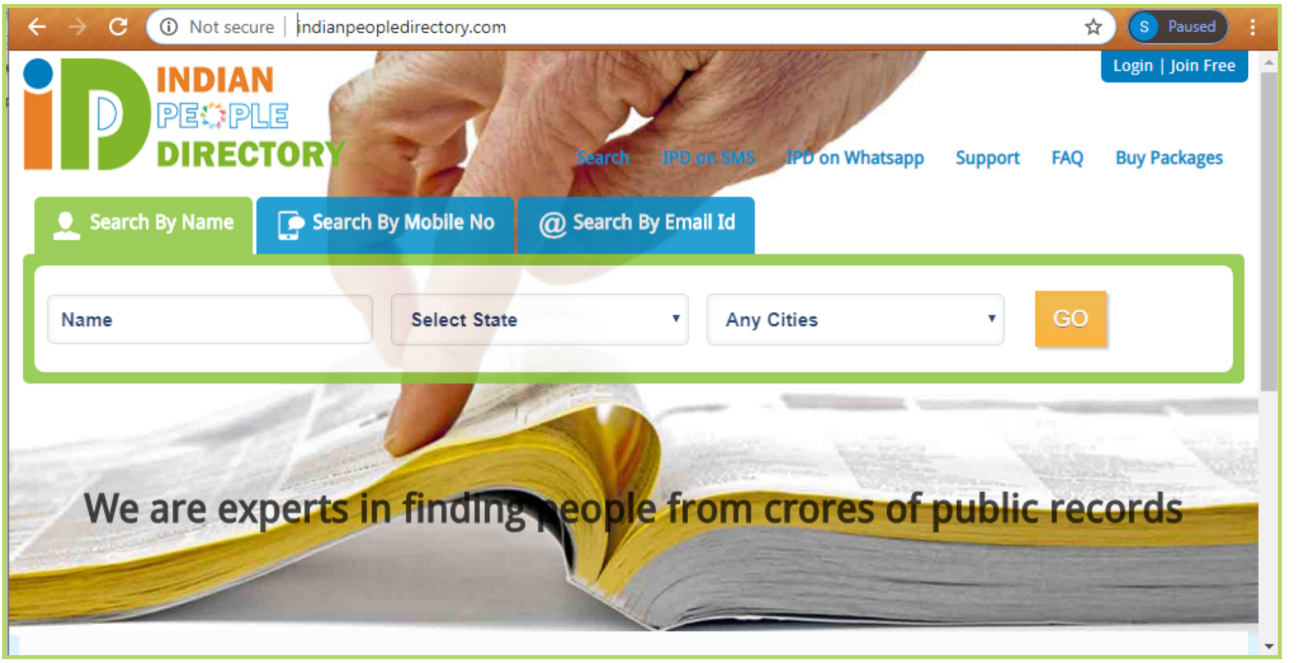


Figure 16: Interface of Indian People Directory

Step 3: There are three categories to search namely

- Search by Name
- Search by Mobile No
- Search by Email Id

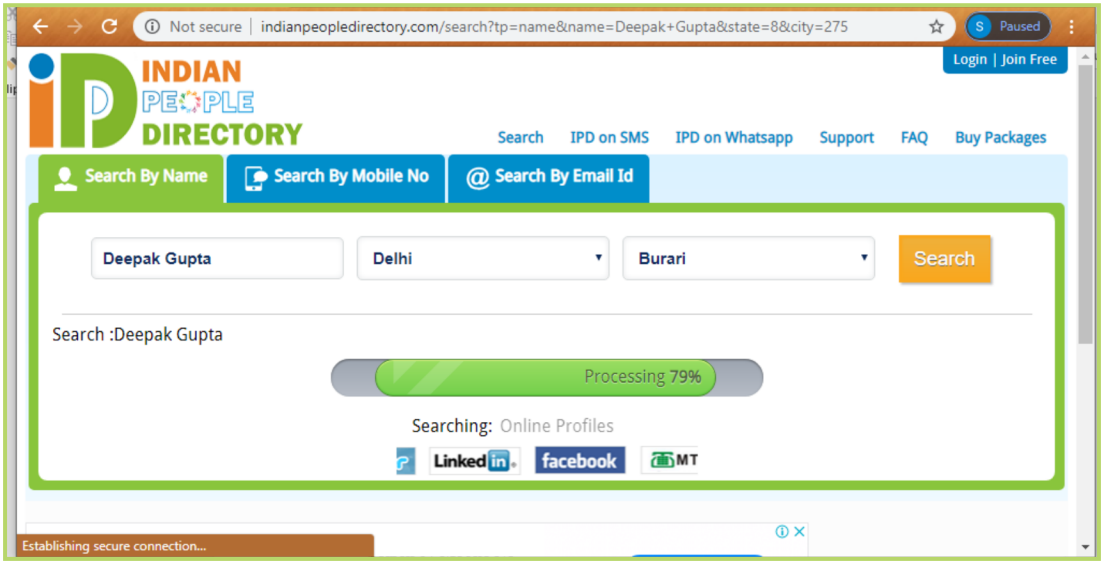


Figure 17: Interface of Indian People Directory

Step 4: Enter the desired criteria and click on the GO button.

Some other websites that provide the facility of finding people on the Internet are as follows:

1. http://www.facebook.com/
2. http://pipl.com/
3. http://www.indiabook.com/people/
4. http://www.linkeclin.com/
5. http://www.anywho.com/

Tip: Pipl is the world's largest people search engine.

File Transfer Protocol (FTP)

File Transfer Protocol, or FTP, is a protocol used for transferring files from one computer to another - typically from your computer to a web server. FTP is the preferred method of exchanging files because it is faster than other protocols like HTTP or POP. The data transfer is asynchronous. The File Transfer Protocol (FTP) was first submitted as a Request For Comments (RFC) in 1971.

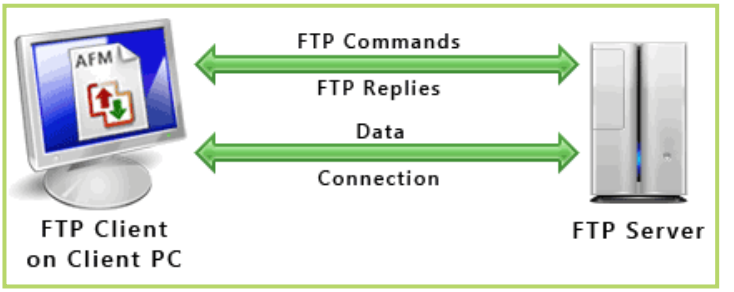


Figure 18

Objectives of FTP are:-

1. To promote sharing of files (computer programs and/or data),
2. To encourage indirect or implicit (via programs) use of remote computers,
3. To shield a user from variations in file storage systems among hosts, and
4. To transfer data reliably and efficiently.

Some popular FTP software are:-

Name	License	Platform
ALFTP	Proprietary	Windows only
Cerberus FTP Server	Proprietary, Commercial	Windows only
Complete FTP Server	Proprietary, Commercial	Windows only
CrushFTP Server	Proprietary, Shareware	Mac OS X, Windows, Linux, *BSD, Solaris, etc.
FileZilla Server	Open Source, Free Software	Windows XP/Vista/7/Server 2003/ R2, 2008/R2

UPLOADING AND DOWNLOADING FILES FROM FTP SERVER

Upload Single File to FTP Server

To upload file on FTP server use **put** command from FTP prompt. First, navigate to the desired directory on FTP server where to upload a file and use the following command. It will upload local system file c:\:files\filel.txt to uploads directory on FTP server.

cd uploads

put c:\files\filel.txt

Download a Single File from FTP

To download the file from FTP server, you use **get** command. Using this command, you can download one file at a time. To download any file from FTP server first login to your FTP server, navigate to the directory and use the following command to download. get filel.txt

Upload Multiple Files to FTP

To upload multiple files to FTP server you use **mput** command from FTP prompt. We can specify wildcard character to upload multiple files to the server at a time. First, navigate to the desired directory on FTP server where to upload a file and use the following command. It will upload local system files with .txt extension in c:files directory to uploads directory on FTP server.

cd uploads

led c:\\files

mput *.txt

Download Multiple Files from FTP

To download multiple files from FTP server, you use **mget** command. Using that command, you can download more than one files at a time. To download multiple files, specify wildcard character for specifying directory name do download all files from the directory.

mget *.txt

TCP/IP

TCP/IP protocol are a set of rules that are needed for the working of the Internet. When data is transferred from one computer to another over the Internet, it is broken into pieces using Transmission Control Protocol (TCP). These pieces are called packets that are numbered serially. Internet Protocol adds the IP address (a unique address) of the sender computer (node) and the recipient computer (node) to each packet so that it reaches the correct recipient.

The recipient computer receives packets in random manner (It may even receive 10 before 1 arrives). If a packet is garbled or lost, it is demanded again. The packets are reassembled in the order they sent and the original message is obtained.

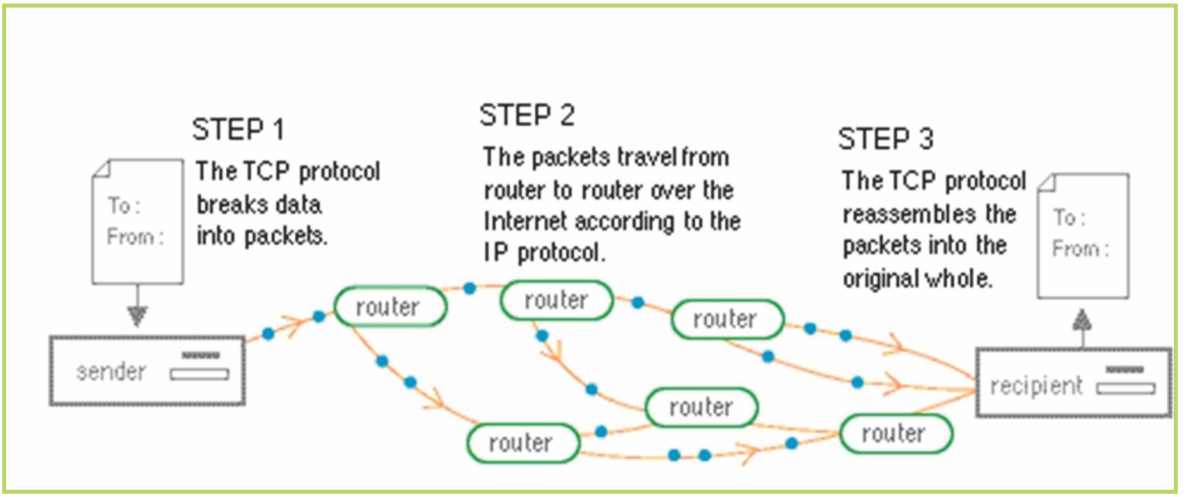


Figure 19: Working of TCP/IP

HTTP

HTTP stands for Hyper Text Transfer Protocol. It is a protocol that defines a set of rules for exchanging information on a network. HTTP is a high-level protocol used to exchange information between a browser and a server. The HTTP protocol uses TCP/IP to locate and make a connection between the browser and the server. The messages sent between the browser and server are either request or response messages.

The request message contains

- A request line containing the name of the requested file and whether the request is a GET or POST.
- A header containing information such as the type of browser and operating system.
- A body containing data, for example, data entered into a form.

The response from the server will contain

- A response line with a code indicating that the requested file was found or an error code (almost everyone has had to deal with the dreaded HTTP 404 Error - file not found) if there was a problem.
- Header information such as the type of server software.

A body containing the HTML of the requested file. An HTTP request and response is illustrated in Figure20.

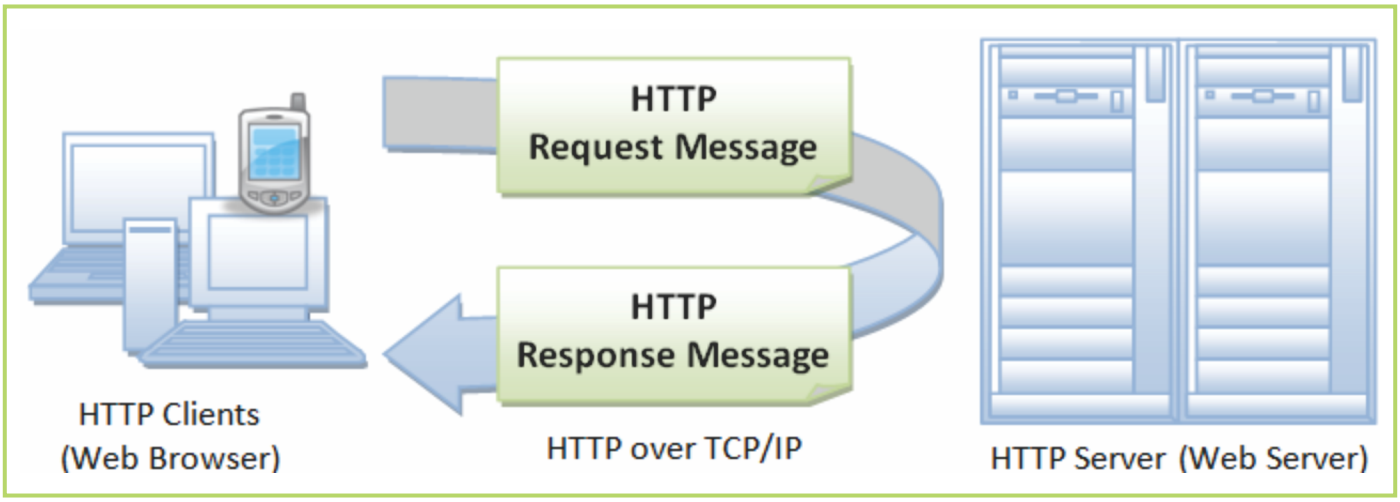


Figure 20: Http Request and Response

GET and POST: GET and POST: In the request line sent from the browser to the server is an HTTP command called the method. The method is usually a GET or a POST. The GET method is a request for a specific URL. With a GET request, the body is empty. The POST method tells the server that data will be sent in the body of the request. The POST method is used when you submit forms.

HTTPS

HTTPS stands for HTTP-Secure. It is a combination of HTTP with SSL(Secure Socket Layer). It is efficient in cases where authenticity is required like the browser need to fill out forms, sign in, authenticate and carry out bank transactions.

SSH PROTOCOL

Secure Shell or SSH is a set of standards and an associated network protocol that allows establishing a secure channel between a local and a remote computer. It uses public-key cryptography to authenticate the remote computer and (optionally) to allow the remote computer to authenticate the user. SSH provides confidentiality and integrity of data exchanged between the two computers using encryption and message authentication codes

(MACs). SSH is typically used to log into a remote machine and execute commands. The SSH server, by default, listens on the standard TCP port 22.

Typical uses of the SSH Protocol

The protocol is used in corporate networks for:

- The SSH protocol is a method for secure remote login from one computer to another.
- It provides secure access for users and automated processes.
- It facilitates interactive and automated file transfers.
- It helps issuing remote commands.
- It manages network infrastructure and other mission-critical system components.

Secure File Transfer Protocol (SSH File Transfer Protocol)

Secure File Transfer Protocol (SFTP) is a network protocol. It is used for accessing, transferring and managing files on remote systems.

SFTP allows businesses to securely transfer billing data, funds and data recovery files. SFTP uses SSH to transfer files and requires that the client be authenticated by the server. SFTP was developed by the Internet Engineering Task Force (IETF) to securely transfer and manage files over a TCP/IP network.

SFTP is part of the SSH Protocol. This term is also known as SSH File Transfer Protocol. SFTP can work with many protocols but is most commonly used with SSH to provide secure authentication. SFTP uses the same commands as the standard file transfer protocol (FTP).

Using SCP (Secure Copy)

The SCP command can be used to send a file to a server or retrieve a file from a server. Because it uses the SSH protocol for authentication SCP is more secure than FTP which transmits passwords in plain text.

It provides file transfers between hosts on a network. With SCP, you can quickly transfer files between hosts along with basic file attributes such as access permission and timestamps that are not always available via FTP.

SIMPLE MAIL TRANSFER PROTOCOL (SMTP)

This protocol is used for sending e-mail messages between servers. Most e-mail systems that send mail over the Internet use SMTP to send messages from one server to another. The messages can then be retrieved with an e-mail client using either POP or IMAP.

The Telnet Protocol (Remote Login)

Telnet is a type of software that makes it possible to connect remotely to another computer. Having access to a software program of this nature can assist computer repair technicians and network administrators substantially. Telnet is a text-based program that allows you to connect to other computers, with permission.

Advantages of Telnet protocol are,

- **Accessing Remote Computers:** One of the biggest advantages of Telnet software is that it allows remote access to someone else's computer.
- **Saves Time:** Instead of physically traveling to another person's home, you can perform any task on his or her computer almost immediately.
- **Easy to Use:** You also need to know the Internet protocol (IP) address of the computer you want to access and have a reliable Internet connection.
- **Universal:** Among Telnet's more attractive features is the fact that you can use it on any computer.

INTRODUCTION TO BLOG

A blog can be a website or part of a website; it is just like an online dairy which is regularly updated for interaction with user. The activity of updating a blog is blogging and someone who is the owner of bog is a Blogger. It contains idea of some- one related to a topic. A blog contains text, links, images, videos, etc.

Blog have become very popular way to share their thoughts with others. Blog is an effective way to interact with others.

Some common type of blogs is following:

- **Personal:** This is the broadest category and includes blogs about personal topics like politics, music, family, travel, health, you name it.
- **Business:** Professionals ranging from realtors to lawyers and stock brokers are using business blogs to share their expertise. Companies have discovered the power of blogs to personally engage with their customers.
- **Schools:** It is a great way for teachers and students to collaborate on classroom projects.
- **Non-profits:** Foundations, charities, and human rights groups find blogs to be a great tool to raise awareness and money for their causes.

Some features of a Blog are following:

- Simple-to-use interface.
- Add photos and videos to your post.
- Feedback on your blog from the readers.

Steps to create a new blog on 'Wordpress.com' are,

1. Decide on your topic: Decide your topic on which you want to write the blog like technology, politics, medical etc.
2. Create a name: Think about 'what is your blog's focus?', and then think of some names that will let others find you.
3. Find a blogging provider that suits to you: A couple of the most popular providers include Blogger and Word Press. Write in the address bar of your browser. For example, www.wordpress.com.
4. Enter your blog name: In the Blog Address field, enter the name you want to use. **We'll try BaconCandy, and see how that works**.
5. If your first choice is unavailable and you don't like the suggested alternatives, try another name.
6. Select your theme: Select theme which suit your topic and make a quality look for your Blog.
7. Post something: Now that your blog is set up, write a few posts to test it out, and adjust the layout or style that you see fit.
8. Decide whether you want your blog to be private or public.

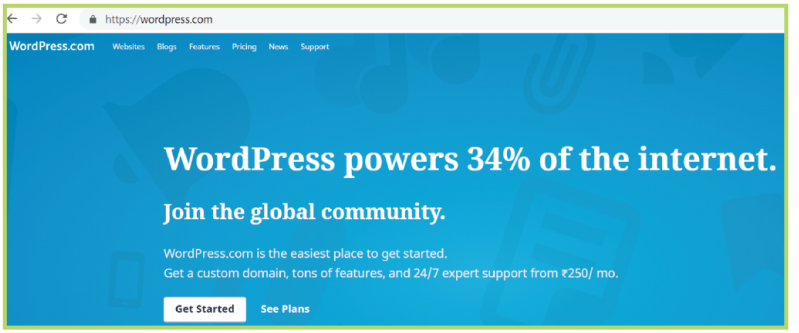


Figure 21

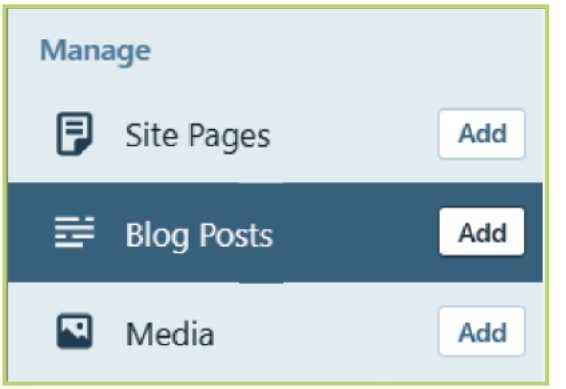


Figure 22

NEWS GROUPS

A newsgroup is an Internet-based discussion about a particular topic where any user can post messages any others can reads, reply to the message. Newsgroups are organized into subject hierarchies, with the first few letters of the newsgroup name indicating the major subject category and sub-categories represented by a sub-topic name. Newsgroups are effective way to share information with others on internet.

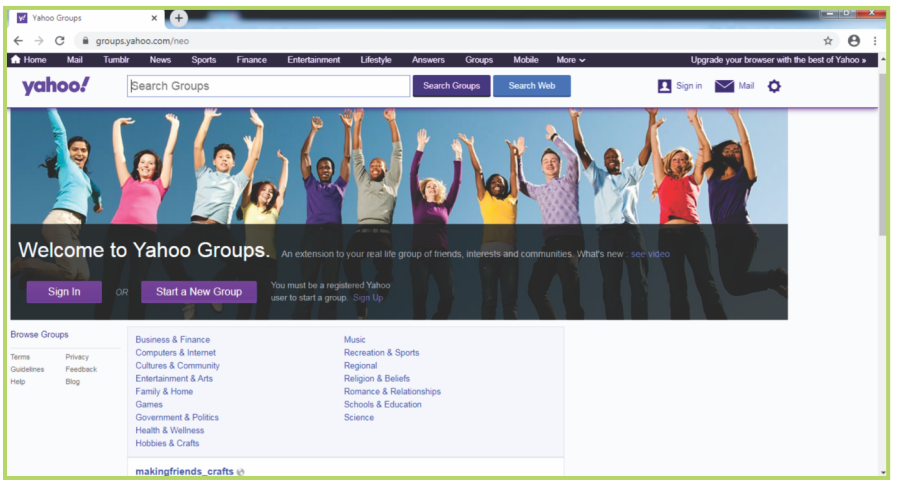


Figure 23

Example of some popular newsgroups:-

- Alt.astrology
- Alt.tennis
- Comp.language.c++

Steps to access newsgroups on Yahoo.com are,

1. Write in the address bar of your browser http://groups.yahoo.com.
2. Browse by category, or use the search box to find a group that discusses topics that you are interested in.
3. Click on the name of the group that you are interested in and you will be taken to the group's main page.
4. If you decide that you still want to join, after reading the full description, click on the "Join This Group!" button, located in the top, right corner.
5. Select the email address that you would like to use.
6. Finally, press "Join this group" button.

E-LEARNING (ELECTRONIC LEARNING)

E-learning is a general term used to refer to a computer-based learning, training or educational program delivering to users through internet. It refers to a wide range of applications and processes designed to deliver instruction through electronic means. Usually this means over the Web, however it also can include CD/DVD or video-conferencing through satellite transmission.

It employs a variety of media, such as audio, animation, text etc.

Figure 24

The different types of e-learning are based on:

- **Medium of communication:** E-learning can be conducted solely through on-line applications. In this we can eliminate distance factor. You can communicate with each other using web cams and speaker, mike or head-phone etc.
- **Schedule:** E-learning can either be Synchronous or Asynchronous. Synchronous means that real-time/Live communication is implemented, such as video conferencing and on-line chat programs etc. Asynchronous

indicates that user's do not require real time/Live communication. Examples of asynchronous e-learning include; e-mail, list serves, blogs, and on-line forums.

- **E-learning class structure:** E-learning class structure addresses how the instruction is provided. E-learning can be self-paced, instructor-led, or self-study with an expert.

Advantages of online or computer-based learning are,

- **Any-where:** Class work can be scheduled around work and family. Students can study anywhere they have access to a computer and Internet connection.
- **Cost effective:** Reduces travel time and travel costs for off-campus students.
- **More options:** Students may have the option to select learning materials that meets their level of knowledge and interest.
- **Flexibility:** To join discussions in the bulletin board threaded discussion areas at any hour, or visit with classmates and instructors remotely in chat rooms.
- **Different and friendly learning style:** E-Learning can accommodate different learning styles and facilitate learning through a variety of activities.
- **Builds self-knowledge:** Successfully completing online or computer-based courses builds self-knowledge and self-confidence and encourages students to take responsibility for their learning.

E-BANKING

Electronic banking, also known as e-banking, virtual banking and online banking, is a service that allows customers to access their bank information, conduct financial transactions, make deposits, withdrawals and pay bills through the Internet without having to physically visit their bank. It provides the convenience of accessing banking facilities from the comfort of their home or office.

Figure 25

Difference from Traditional Banking

It is a form of banking where funds are transferred through an exchange of electronic signals between financial institutions, rather than an exchange of cash, cheques. The ownership of funds and transfers of funds between financial institutions are recorded on computer systems connected to internet. Customer identification is only way to access bank account, such as a password or Personal Identification Number instead of a signature on a cheque.

Advantages of E-Banking

1. Low cost: The operating cost per unit services is lower for the banks.
2. Convenience: It offers convenience to customers as they are not required to go to the bank's premises.
3. There is very low incidence of errors.
4. Card and Discounts: The credit cards and debit cards enables the Customers to obtain discounts from retail outlets.
5. Any-where, any-place: The customer can easily transfer the funds from one place to another place electronically.

Types of E-Banking

1. Informational Internet Banking

It simply means the bank provides basic information about its products and services, much like a brochure. It does not allow dealing with bank account.

2. Communicative Online Banking

It allows fundamental interactions such as account inquiries, new account updates, loan or mortgage applications, contact information updates and balances

3. Transactional Internet Banking

This provides the facilities to full control over your accounts such that deposits, withdrawals, transfers, updates and online payments.

ONLINE SHOPPING

Online shops are simply shops and stores, available online. While it may also have a physical location. An online store is a front set up on a website that allows users to view and purchase products over the Internet. The method of payment is through a credit card/dabit card/cash on delivery. The specialty of e-shopping is that with a single click of computer mouse, you can order anything from the vast range of products and services. Secure payment transactions only can make more and more people interested in e-shopping.

Figure 26

1. **Convenience:** You can do your shopping in minutes that saves time and avoid distance and crowd factor. Online shops give us the opportunity to shop 24 x 7.
2. **Better Prices:** It fascinates you the cheap deals and better prices you get from online stores because products come to you direct from the manufacturer or seller without involvement of middlemen.
3. **Variety:** The choices you can get for products are amazing in online shops. You can get several brands and products from different sellers at one place at better price.
4. **Send Gifts:** Online Shopping makes sending gifts to relatives and friends easy, no matter where ever they stay.
5. **Comparison of Prices:** Online shops make comparison and research of products and prices possible. Online stores also give you the ability to share information and reviews with other experienced shoppers.
6. **Buying Old or unused Stuff at low prices:** Online Shops make it possible for us to buy old or unused stuff at rock bottom prices. If we want to buy antiques there is no better options than online stores.

Important points when buying from online stores-

When you are buying from online stores make sure that you check out the following:

- Online store must value your privacy and confidentiality and their privacy policy is available to read.
- They are reputed in business with great reviews from customers.
- Does the online store have a way to contact them?
- If you're unhappy with your purchase then they have a refund policy.

ONLINE RESERVATION

Online Reservation is the process that is used to determine the availability of movie, train, airline tickets as well as hotel rooms through electronic means via internet.

Advantage of Online reservation are following:

- **Speed:** Booking online allows you to make your reservation efficiently. You can book rail, airline and hotel reservation on just a click through internet.
- **Convenience:** You can book online anytime and anywhere.
- **Variety:** By booking online, you can see a variety of lodging and flight options for a particular destination, without having to call around to hotels and airlines. Multiple option helps to select best one.

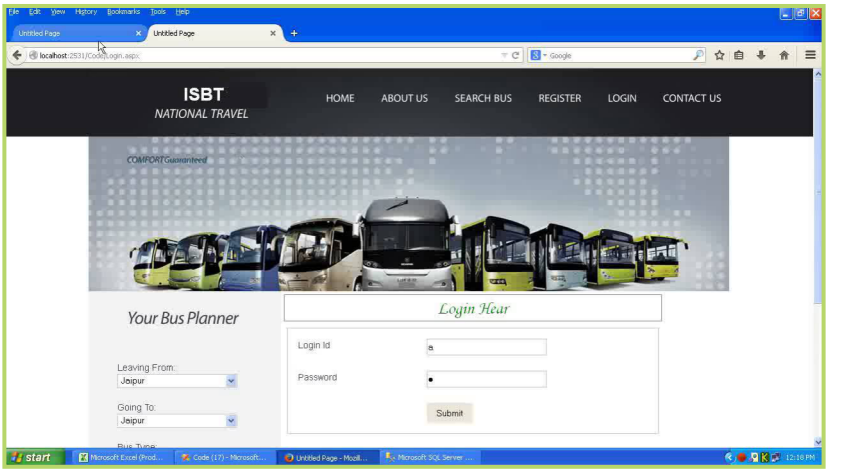


Figure 27

- **Confirmation:** When you book online, you have the satisfaction of knowing the reservation was made correctly. You can print out your confirmation, to avoid any type of problems to get to the hotel or airline.
- **Price:** When you book ticket many airline provide ticket for a particular destination at different price. Online reservation provides facility to compare them and find a cost effective solution.
- **Save time** and avoid distance.

Example: Steps to book online reservation in Indian Railways :

1. Open IRCTC Website (www.irctc.co.in).
2. Click on register link and register your account.
3. At the left corner , you will see a 'Plan My Travel'.
4. In 'From' text box, start with 3-4 initial words of the train boarding place. For example, if you are typing 'luck' for 'Lucknow' then you will get the list of all Lucknow station. Choose your station with station code.
5. In 'To' text box, type the 3-4 initial words for the destination.
6. Choose date of journey when you want to travel.
7. Choose Ticket type :- a) E-ticket b) I-ticket.
8. Choose quota (1) General (2) Tatkal (3) Ladies.
9. Click on 'Find Trains' button.
10. Enter passenger details.
11. Click on 'Go' button.
12. Your ticket details will be shown. Click on 'Now payment' and follow the instructions.

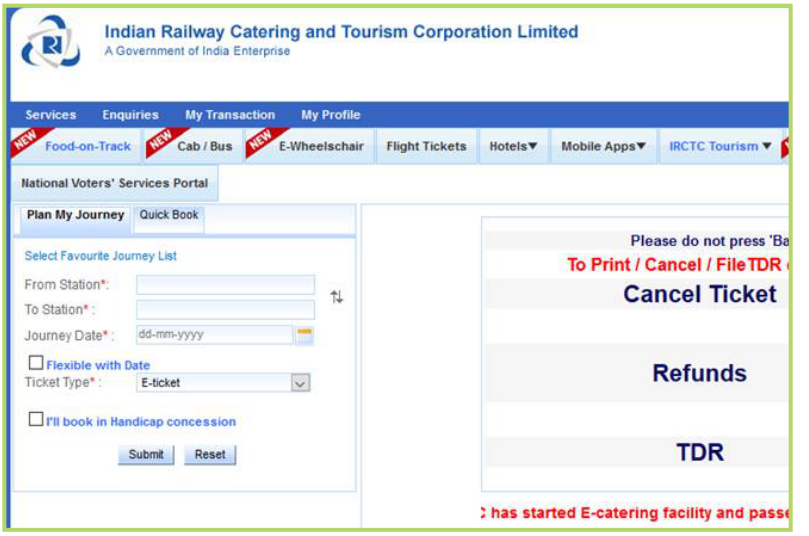


Figure 28

E-GROUPS

An e-group can be defined as a group of persons or individuals who come together in the on-line environment for a specific or common purpose using the best internet communication tools to share ideas, different opinions, and experiences and to learn from each other.

Figure 29

Types of e-groups are,

1. **List Server:** This is a piece of software, which acts as a consolidation and forwarding point for e-mail based communication.
2. **News-group:** This is an electronic forum hosted on a world- wide bulletin board system called USENET. It is the largest information utility available today and used by millions of people around the world.
3. **Online Bulletin Board (BBS):** Here the user dials a number, gets connected and sends messages.

SOCIAL NETWORKING

In today's world people are preoccupied with their busy life, they do not have any time to spare for themselves. Social networking provides a platform for staying in touch with their dear ones. Social networking means conglomeration of people forming small groups or communities. These people share a lot of things in common and hence it is perfect for exchanging information related to various topics and issues.

Advantages of social networking are:

- Support for members of an organization.
- Stay in touch with others.
- Ease of access to information and applications.

Some examples of social networking sites are Facebook, Twitter, LinkedIn, Hi5, etc.

Demerits of social networking are:

- Credibility of information is difficult to determine.
- Addition to social networking leading to wastage of time.
- Fake profiles, mis-guidance due to fake claims, lies and propaganda by others.

Cyberbullying

Any sort of threat, scare or harassment over internet is the act of cyber bullying such as undesired messages in bad taste and intentions, online mockery in friend groups or circles, stalking someone's online profile and trying to post unwanted updates, sending unsolicited private messages, videos, and pictures. Educate your children about cyber bullying. Always be available for them when they face such problem. Encourage your children to inform you about any incident that sounds nasty even remotely. Tell your children that cyber bullies in fact are not capable to do any harm and they can never carry out their preposterous claims of harming someone. Advise children to block such intruders immediately and never entertain them.

WhatsApp

WhatsApp is a messaging application that you can download to your smartphone and use to easily send messages to other people's mobile phones freely. It also allows video calls freely by using your phone's data connection.

WhatsApp can be easily downloaded and installed from any app store like Google marketplace or iPhone App Store.

People already using WhatsApp in your contacts will be automatically available once the app is installed and those who are not can be invited to come over on WhatsApp. They will get a text message of your invitation along with the app's download link.

WhatsApp allows creating groups of your contacts. Messages sent by group members are seen by and can be responded by all the other members in that group.

The messages sent are denoted by single tick mark. Messages received on recipient device are denoted with double tick marks and the same double tick marks turn blue denotes that recipient has seen your messages.

WhatsApp allows video calling too for all Android versions 4.1 and above. To make a video call simply tap on the contact, tap on phone icon at the top and select video call.

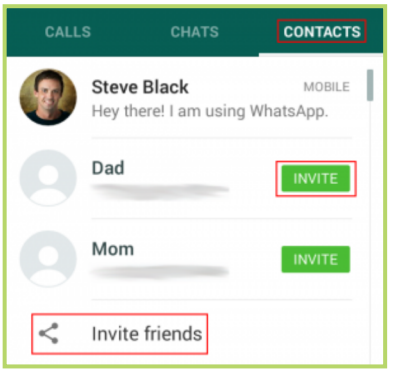


Figure 30

You can also back and erase the chat. Unwanted contacts can be muted and blocked. Muted contacts can still communicate but you will not get notification for their messages.

Facebook

Facebook is the world's largest social network for you to **connect** with your family and friends online. You can share pictures, videos and other interesting information with others. Facebook was created in 2004 by Mark Zuckerberg. Anyone over the age of 13 with a valid email address can join Facebook.

- Go to www.facebook.com in your web browser.
- Under the words **Sign Up**, enter your personal information and desired password, then click **Sign Up**.

Figure 31

You need to **confirm your email address**. To do this, sign in to your email account, open the **confirmation message** from Facebook, and click **Confirm Your Account**.

Facebook Homepage & Timeline: When you sign in to Facebook, the **homepage** is displayed. It shows the information, pictures, videos etc. shared by your friends.

The **Timeline** shows what you upload or share with others. Others can also share posts on your Timeline depending on what privacy settings you have done and who all are permitted to do so.

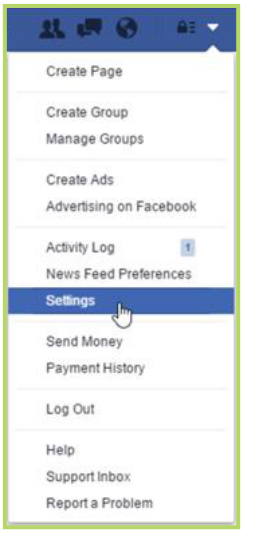


Figure 32

Facebook Privacy Settings: Facebook offers two ways to control your privacy:

- By setting general rules to allow who can access, view and respond to your information.
- By setting who all can view every single thing you do on Facebook.

For privacy settings:

- Open the **drop-down** on the Toolbar, select **Settings**.
- On settings page, select **Privacy**.

Figure 33

Facebook allows you to block unwanted intruders. Blocked people can no longer communicate with you or send friend requests. To block someone, go to the **Settings** page and select **Blocking**. Then, enter the name of the person you want to block and click **Block**.

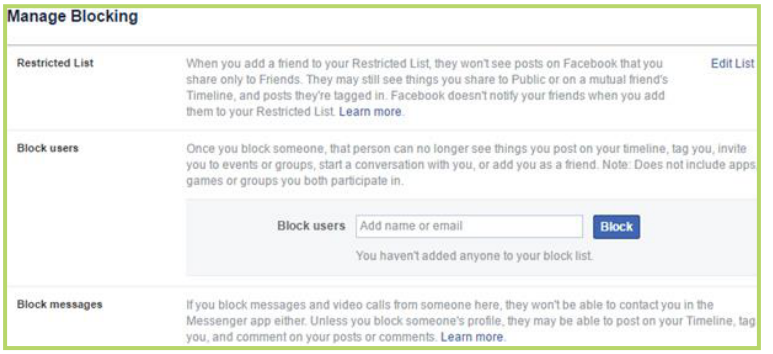


Figure 34

Twitter

Twitter is another online social platform highly popular among celebrities, political personalities and other who's-who of the world besides common populace. It allows users post short messages with images and videos. These short messages are called **tweets**. Sharing somebody's tweet is called re-tweeting.

MOBILE TECHNOLOGY

Mobile technology is a form of technology and it is mostly used in cellular communication and other related aspects. It includes SMS, MMS, 3G and 4G. It is a portable electronic device and allows you to share the data from one phone to another.

SMS

The full form of SMS is Short Message Service. It is used for sending small message upto 160 characters. It enables the users to send and receive text messages. SMS used GSM communication and it was originally created for phones. The GSM and SMS standards were originally developed by ETSI (European Telecommunications Standards Institute). SMS text messaging supports languages internationally. It works fine with all languages supported by Unicode, including Arabic, Chinese, Japanese and Korean. SMS messages are also sent via web-based browser applications, instant message (IM) applications and Voice over Internet Protocol (VoiP) applications, such as Skype. An SMS message is sent from a device to a Short Message Service Center (SMSC), which, in turn, communicates with mobile networks to determine the subscriber's location. Then, the message is forwarded as a small data packet to the destination device. Subsequent messages sent by the original source device undergo the same process, also known as store and forward.

Tip: SMS appeared on the wireless scene in 1991 in Europe.

Types of SMS Message

There are four types of SMS classes which are as follows:

1. **Class 0:** It is displayed on the mobile screen without being saved in the message store or on the SIM card.
2. **Class 1:** This type of SMS message is to be stored in the device memory or the SIM card.
3. **Class 2:** This type of SMS message class carries SIM card data.
4. **Class 3:** This type of SMS message is forwarded from the receiving entity to an external device.

Advantages of SMS

The advantages of SMS are as follows:

1. Delivery of notifications and alerts.
2. Guaranteed message delivery.
3. Reliable, low-cost communication mechanism for concise information.
4. Ability to screen messages and return calls in a selective way.
5. Increased subscriber productivity.

MMS

MMS stands for Multimedia Messaging Service. It allows the users to exchange multimedia communication between phones to other devices. It sends enhanced text messages. MMS is a store and forward method of transmitting graphics, video clips, sound files and short text messages over wireless networks via WAP protocol.

MMS is based on the concept of multimedia messaging. MMS does not support attachments as e-mail does. The important use of MMS is for communication between mobile phones. MMS permits mobile subscribers to send multimedia files such as images, videos, audios, etc., as a message. Multimedia messaging is also known as picture messaging. MMS was developed by the Open Mobile Alliance (OMA) and 3GPP.

3G

It refers to the third generation of mobile telephony technology. It is generally used in phones and handsets as a means to connect the phone to the internet in order to make voice and video calls, to download and upload data, and to surf the Web. The International Telecommunications Union (ITU) defined the third generation (3G) of mobile telephony standards IMT-2000 to facilitate growth, increase bandwidth, and support more diverse applications.

It allows mobile operators to offer more service options to their users, including mobile broadband. The first pre-commercial 3G network was launched in Japan in 1998. MTNL becomes the first 3G mobile service provider in India. 3G broadband offers greater flexibility and services by making more efficient use of mobile bandwidth. It is also known as IMT-2000.

Advantages of 3G

1. Higher data speed.
2. Enhanced audio and video streaming.
3. Support video conferencing.
4. Web and WAP browsing at higher speeds

Disadvantages of 3G

1. It requires 3G compatible handsets.
2. The cost of upgrading to 3G device is expensive.
3. Consumption of power is high.
4. It requires closer base stations that is very expensive.

4G

It refers to the fourth generation of mobile telephony technology. It replaces the third generation of broadband mobile communications. It offers at least 100 Mbit/s with high mobility. The purpose of 4G is to provide high speed, high quality and high capacity to users.

4G is an IP-based and packet-switched evolution of 3G technologies that uses voice communications. A number of technologies considered to be 4G standards include Long Term Evolution (LTE), Ultra Mobile Broadband (UMB) and the IEEE 802.16 (WiMAX) standard. 4G is a mobile multimedia, available anytime anywhere, Global mobility support, integrated wireless solution, and customized personal service network system. 4G wireless technology is also referred to by "MAGIC" which stands for Mobile multimedia, Any-where, Global mobility solutions over, integrated wireless and Customized services.

Tip: TeliaSonera was the first operator in the world to commercially launch 4G.

Advantages of 4G

1. Improved download/upload speeds.
2. Reduced latency.

3. It is easier to standardize and it offers affordability.
4. It is an end-to-end Internet Protocol connection.
5. 4G technology provides mobility.
6. It is more flexible and reliable.

Glossary

Blog : Online journal where users can share their ideas on a particular topic.
Chat : Online textual conversation.
E-mail : Receiving and sending messages electronically.
FTP : File Transfer Protocol.

You have learned

- ✓ To retrieve information from the web sites you need their unique address known as URL.
- ✓ E-mail or Electronic mail is a method to exchange messages in digital form.
- ✓ An E-mail address defines the location of an individual's mailbox on the Internet. An e-mail address consists of two parts separated by '@' (at the rate of) symbol.
- ✓ Talking with anyone on Internet is called Voice Chatting.
- ✓ Video Chatting is also known as face to face chatting on the internet.
- ✓ A blog can be a website or part of a website, it just like an online dairy which is regularly updated for interaction with user.
- ✓ A newsgroup is an Internet-based discussion about a particular topic where any user can post messages any other can read and reply to message.
- ✓ E-learning is a general term used to refer to computer-based learning, training or educational program delivering to users through internet.
- ✓ Online Reservation is the process to look up and book travel tickets, hotel rooms etc. via the internet.
- ✓ Online groups of people are called E-groups.
- ✓ Interaction of people over online platforms is called social networking.
- ✓ Facebook, Whatsapp and Twitter are popular social media platforms.
- ✓ 3G and 4G are advanced mobile telephony generations.

Solved Questions

1. Define e-mail.

Ans. It represents a way to send electronic messages by a user to other users through the Internet.

2. Write the steps to send an e-mail.

Ans. If you want to send a mail to anyone, you just need to follow the given steps –

- Click on Compose Mail button.
- Type the email address of receiver.
- Type the subject name.
- Type the Message and Click on Send button.

3. What are the advantages of e-mail?

Ans. Following are the advantages of e-mail.

- In seconds we can send e-mail to any corner of world.
- Cheap and secure way to send message.
- Easy and convenient.

4. Explain the types of chatting.

Ans. The most common types of chat are:

- *Internet Relay Chatting (IRC):* This is most common chat medium. IRC has become very popular as more people get connected to the Internet because it enables people connected anywhere on the Internet to join in live discussions. IRC is not limited to just two participants.
- *Web Chatting:* A web chat is a system that allows users to communicate in real time (using easily accessible web interfaces). It is a type of internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software.
- *Instant Messenger Chatting:* It is a type of online chat which offers real-time text transmission over the Internet. These are special application programs which need to be downloaded separately. These are also known as Messenger Services Applications.
- These are used by the registered users. It has all the chat facilities and commands. We just need to open the messenger and start using it. Some of the most popularly used messengers are Yahoo Messenger, GTalk, RedisffBol, MSN Messenger, Skype, etc.

5. What are advantages of social networking?

Ans. Following are the advantages of social networking:-

- Support for learning.
- Support for members of an organization.
- Stay in touch with others.
- Ease of access to information and applications.

6. What is a Blog?

Ans. A blog can be a website or part of a website. It is just like an online dairy which is regularly updated for interaction with user.

7. What is a News-Group?

Ans. A newsgroup is an internet-based discussion about a particular topic where any user can post messages any other can read, reply to message.

Exercise-1

A. Choose the correct answer.

1. Which protocol is used to download a file?

a) FTP b) TCP

c) IP d) UDP

2. Software that is used to open a web page.

a) Google
b) operating System
c) Web browser
d) ISP

3. FTP is short form of

a) File transmission program
b) File transfer protocol
c) Formal transfer protocol
d) Frame transmission Program

4. What is the meaning of web surfing?

a) Video conferencing
b) Sending email
c) Exploring the web
d) None of these.

5. Which of the following is an e-mail service provider?

a) www.gmail.com
b) www.yahoomail.com
c) www.rediffmail.com
d) All of these

6. Which one of the following is a search engine?

a) Yahoo
b) Google
c) Rediffmail
d) All of the above

7. Identify e-mail address from following:

a) www.scrapbook.com
b) www.yahoo.com
c) abc@gmail.com
d) None of these

8. Conferencing can take place among____ number of people.

a) Only 2
b) 3
c) More than 3
d) None of these

9. The software that searches through a database of web pages for particular information is known as

a) Bing
b) MSN
c) Spider
d) None of these

B. Short answer type questions.

1. Which devices are used to connect to internet?
2. Define different type of Blogs.
3. What are advantages of using of e-mail?
4. Briefly discuss the three elements used by a search engine.
5. Write the steps to send an e-mail.
6. Define FTP and TELNET protocols.
7. What are the advantages of using social networking sites? Name any two.
8. How does FTP work?

9. Name any two internet service providers in India.
10. List any 4 advantages/ benefits of video conferencing.
11. How will you upload a file reports.xls to an online folder Reports using ftp?
12. What is the basic difference between HTTP and HTTPS?
13. What is the meaning of tick marks in Whatsapp messaging?
14. What is a tweet and retweet?
15. What is the basic difference between 3G and 4G?

C. Long answer types questions.

1. Write note on the following:

   a) Blog, b) E-Banking, c) E-shopping
2. Write the steps to check e-mail in your inbox.
3. What do you understand by e-learning? Mention five advantages of e-learning.
4. What is social networking?
5. Write any five uses of Internet.
6. What are the advantages of online reservation (ticket)?
7. What is SMTP? Why it is required?
8. Write a brief not on SMS and MMS.
9. Write short notes on TCP/IP and HTTP.
10. How is Facebook different from Whatsapp?

Exercise-2

A. Fill in the blanks.

1. An _____ address defines the location of an individual's mail box on the internet.
2. A _____ is an Internet-based discussion about a particular topic where any user can post messages and others can read, reply to message.
3. Files are transferred using the _____ Protocol.
4. A web browser allows you to open a _____ .
5. _____ is an electronic message used to communicate on Internet.
6. _____ is a way to book Rail, plane, hotel etc. ticket via Internet.
7. _____ is an organization which provides internet connection by charging some monthly fee.
8. _____ is an interactive text-based communication process that takes place over the Internet.

9. _____ is a general term used to refer to computer-based learning, training or educational program delivering to users through internet.

10. _____ provides a platform for staying in touch with their dear ones.

B. State true or false.

1. Internet explorer is e-mail client software.
2. A Blog consists of text, audio and video contents.
3. Telnet is a type of software that makes it possible to search over the internet.
4. The process of information retrieve from internet it is called Surfing.
5. We can do Online Banking without credit cards.
6. Facebook is one of the famous search engine.

C. Practical/ Lab Activity

1. Organize a quiz in a class and put the following question:

   - Explain three similarities and dissimilarities between Newsgroup and Social Networking.

2. State any two problem which students might face when using the Internet as a source of Information:

   1. .....

      .....

   2. .....

      .....

3. Give four methods that the reduce the number of result shown by the search engine:

   1. .....

      .....

   2. .....

      .....

   3. .....

      .....

   4. .....

      .....

INTRODUCTION TO HTML

3

CHAPTER FOCUSES ON

- ✓ Introduction to HTML
- ✓ Work on HTML and Structure of HTML
- ✓ HTML Tags and Attributes and Tag types
- ✓ Getting started with HTML Programming
- ✓ Center, Heading, Break Line and Horizontal Line tag

INTRODUCTION TO HTML

HTML is short for Hyper Text Markup Language. Webpages are written in HTML - a simple scripting language.

- Hypertext is simply a piece of text that works as a link.
- Markup Language is a way of writing layout information within documents.

Note: Basically an HTML document is a plain text file that contains text and nothing else.

When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. The markup tells the Web browser how to display a Web page's words and images for the user. Each individual markup code is referred to as an element but these elements are popularly known as Tags.

Since HTML documents are just text files they can be written in even the simplest text editor.

A more popular choice is to use a special graphical HTML editor - called WYSIWYG editor ("What You See Is What You Get").

Some of the most popular HTML editors, such as FrontPage or Dreamweaver will let you create pages as you write documents in Word or whatever text editor you're using.

Note: In this courseware, we will use Notepad for creating HTML documents.

HTML was developed by Tim Berners-Lee in late 1991. It is basically originated from old language SGML (Standard Generalized Markup Language).

To view the output of HTML document (as web pages) we need a web browser such as Internet Explorer, Google Chrome, Mozilla Firefox, Opera, Safari, etc.

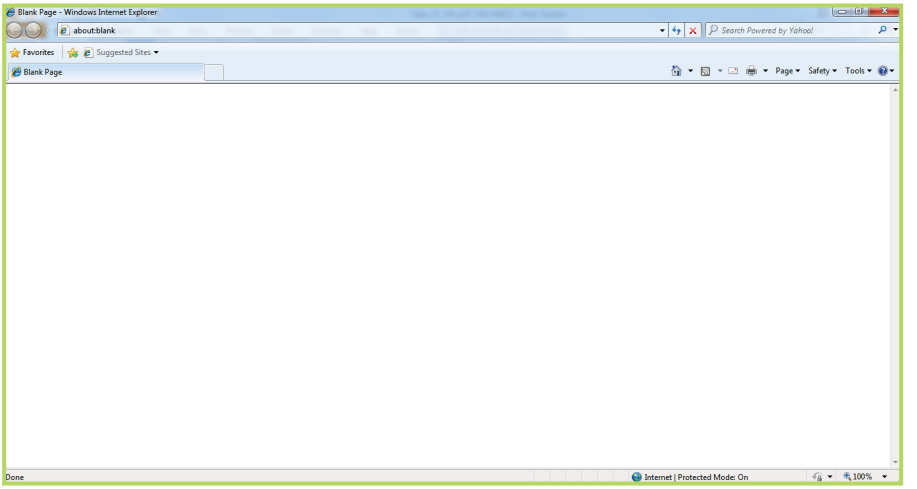


Figure 1: Web browser (Internet Explorer)

UNDERSTAND TAGS AND THEIR ATTRIBUTES IN HTML

Tags

Basic HTML code manipulates a plain text document to apply style and reference. It does so by applying 'tags'. HTML tags are keywords (tag names) surrounded by angle brackets '<' and '>', like <html>. HTML tags normally come in pairs like <html> and </html>. The first tag in a pair is the start tag (opening tag) and the second tag is the end tag (closing tag). The end tag is written like a start tag, with a forwarded slash before the tag name.

There are two types of tags:

1. **Container tag:** In HTML, tags that include both the start tag and end tag, are called container tag. They contain the text between the opening and closing tags.

   For example, <body> text being formatted or defined </body>

2. **Empty tag:** In HTML, tags that have only opening tag are called empty tag. There is no closing tag. These tags do not acts on blocks of text.

   For example, <hr> and
.

Attributes

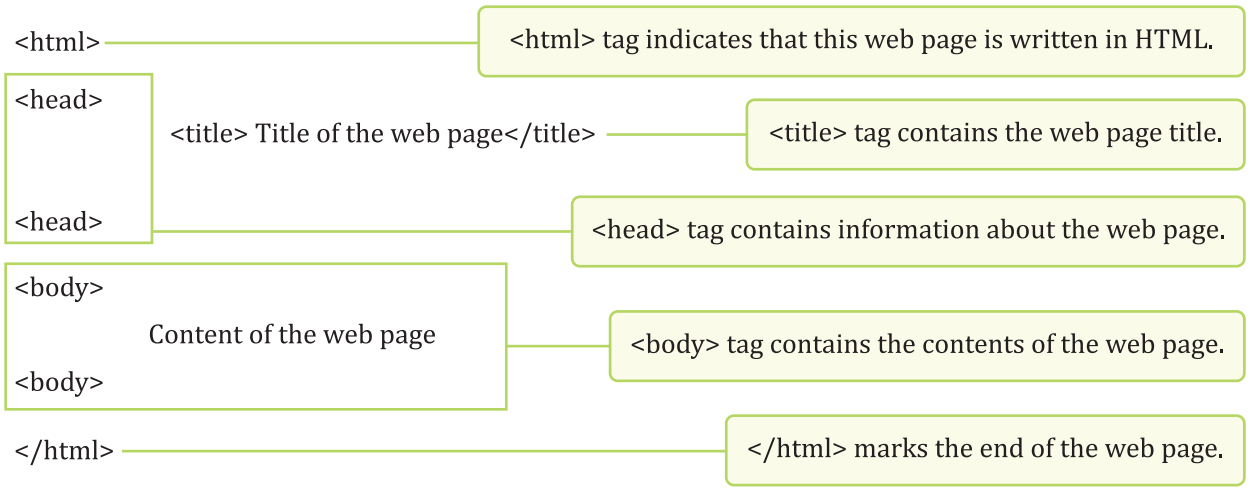
The attributes within the tag are extra bits of information. For example, at some point you may want to give your page body a background image or colour or perhaps some margin in any of the side. All these things can be done using attributes.

Attributes are always written in the opening tag. Attribute values should always be enclosed within double quotes ("..."). Different attributes in the same tag are separated by a space.

For example, <body background="nature.jpg">Using the attributes</body>

STRUCTURE OF HTML DOCUMENT

To learn HTML you must first understand the basic structure of this markup language. below given is a simple HTML code to create a simple web page:



<HTML></HTML> simply indicates the use of HTML code. They'll show in every webpage, usually at start and end, and embrace practically all the other codes.

<HEAD></HEAD> mark the 'administrative building'. These will encapsule the title, and enable certain scripts.

<BODY></BODY> is located below the HEAD tags, and makes up most of the document. All the information you'd like to include in your web page i.e. the text, images, links, etc.

GETTING STARTED WITH HTML PROGRAMMING

To write an HTML program to design a web page, open the Notepad program, type the program code and save the program file with '.html' or '.htm' extension.

You can create a web page using a text editor by the following steps:

1. Click on 'Start' button →'All Programs' →'Accessories' →'Notepad'.
2. The Notepad window appears. Type the HTML code (see figure 2 a).
3. Click on 'File' menu →'Save As' option.
4. The 'Save As' dialog box appears.

Now, type the file name followed by an extension .htm or .htlm and save the file.

To view the output, double- click on the file icon.

Note: File will be opened in the default web browser.

```
<html>
        <head>
                <title>My first web page</title>
        </head>
        <body>
                WELOME TO MY FIRST WEB PAGE
        </body>
</html>
```

Figure 2a: A sample HTML code in Notepad

Figure 2b: Output of HTML code in IE

BODY <body> tag

The <body> tag defines the document's body. Various mark-up elements are allowed within the body to indicate headings, paragraphs, lists, hypertext links, etc.

syntax: <body> ..... </body>

Attributes of Body tags are,

- **Background:** This attribute is used to apply a picture as a background on the web page.

  Syntax: <body background="Logo.jpg"> ..... </body>

- **Bgcolor:** This attribute is used to change the background colour of web page.

  Syntax:<body bgcolor="#99BBCC"> ..... </body>

- **Text:** This attribute is used to change the colour of whole text of the web page. You can specify the colour values as RGB (Red, Green, Blue) value pairs in hexadecimal notation (e.g, White would be "#FFFFFF").

  Syntax: <body text="#FFFF00"> ..... </body>

- **Leftmargin:** This attribute is used to leave blank area in the left side.

  Syntax: <body leftmargin="50"> ..... </body>

- **Topmargin:** This attribute is used to leave blank area from the top edge of the document.

  Syntax: <body topmargin="60"> ..... </body>

- **Link:** This attribute is used to set the colour of your links. The default colour is blue.

  Syntax: <body link="#FF00FF"> ..... </body>

- **Vlink:** This attribute is used to set the colour of the links that you have clicked on them. The 'V' stands for 'Visited'. The default colour is purple.

  Syntax: <body vlink="#660066"> ..... </body>

- **Alink:** When you click on a link, it changes colour momentarily, to show you that you've clicked it. If you click the 'Back' button, it is highlighted as being Active so you don't click through on it again. The default is red/ brown.

  Syntax: <body alink="#FF0000"> ..... </body>

  Note: You can use colour name also, instead of hexadecimal code.

  syntax: <body text="black"> ..... </body>

Colour	Colour Name	Hex Code #RRGGBB
	Black	#000000
	White	#FFFFFF
	Red	#FF0000
	Lime	#00FF00
	Blue	#0000FF
	Yellow	#FFFF00
	Cyan/ Aqua	#00FFFF
	Magenta/ Fuchsia	#FF00FF
	Silver	#C0C0C0
	Gray	#808080
	Maroon	#800000
	Olive	#808000
	Green	#008000
	Purple	#800080
	Teal	#008080
	Navy	#000080

```
<html>
        <head>
                <title>body tag with attributes</title>
        </head>
        <body bgcolor="#FFFFFF" text="#000099" leftmargin="50" topmargin="60">
                WELOME TO MY FIRST WEB PAGE
        </body>
</html>
```

Figure 3a: <body> tag with some attributes

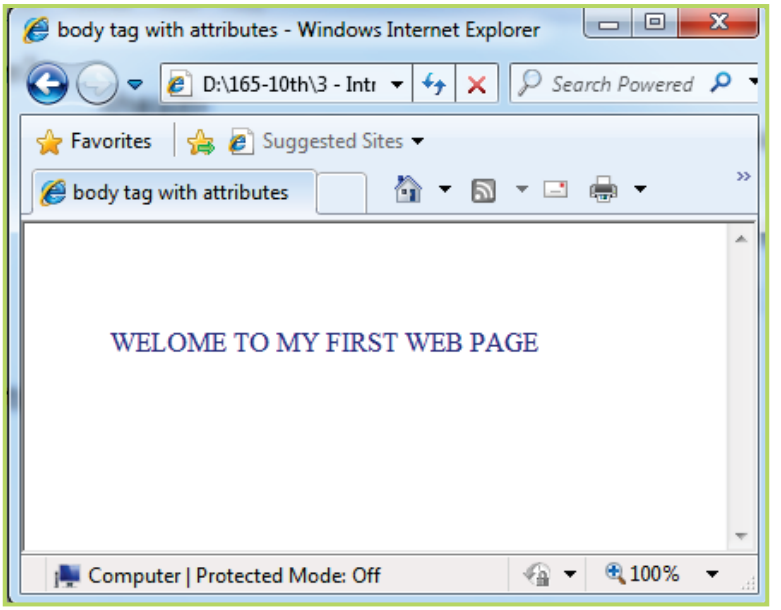


Figure 3b: Output

Heading tag <hn>.....</hn>

Heading elements implement six levels of document headings, <h1> is the most important and <h6> is the least. A heading element briefly describes the topic of the section it introduces. Heading information may be used by user agents, for example, to construct a table of contents for a document automatically.

Use the H1, H2,...H6 tags as indicators of section headings and subheadings within a document, not just as formatting elements.

Many experts recommend reserving H1 for the page title, H2 for major headings and H3 for major sub headings.

Attributes of Heading tag

- **Align:** This attribute specifies the alignment of a heading (figure 4a and 4b). It's possible values are left, center, right and justify.

  Syntax: <h1 align="left"> ..... </h1>

```
<html>
        <head>
                <title>heading tag with attributes</title>
        </head>

        <body>

        <h1 align=left>Heading level 1</h1>
        <h2 align=left>Heading level 2</h2>
        <h3 align=right>Heading level 3</h3>
        <h4 align=left>Heading level 4</h4>
        <h5 align=center>Heading level 5</h5>
        <h6 align=left>Heading level 6</h6>

        </body>
</html>
```

Figure 4a: <h> tag with attributes

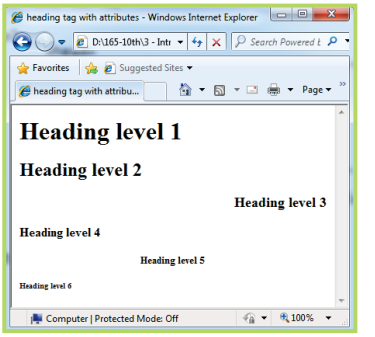


Figure 4b: Output

HR (Horizontal Rule) tag <hr>

<hr> tag is used for creating a horizontal line in web page. It is used to separate content (or define a change) in web page (figure 5a and 5b).

Attributes of Horizontal Rule tag

- **Align:** This attribute specifies the alignment of a horizontal rule. It's possible values are left, center and right.

  Syntax: <hr align="center">

- **Noshade:** This attribute removes the usual shading effect that most browsers display. It's possible value is noshade.

  Syntax: <hr noshade="noshade">

- **Size:** This attribute specifies the height of the horizontal rule in pixels or %.

  Syntax: <hr size="10"> or <hr size="10%">

- **Width:** This attribute specifies the width of the horizontal rule in pixels or %.

  Syntax: <hr width="200"> or <hr width="100%">

- **Color:** This attribute is used to change the colour of the horizontal rule. It's values can either be in hexadecimal values or in colour names.

  Syntax: <hr color="red">

```
<html>
        <head>
                <title>horizontal rule tag with attributes</title>
        </head>
        <body>
                WELCOME VISITOR
        <hr align="center" noshade size="5%" width="70%">
        Below are the terms and conditions:
        <hr align="left" size="5%" width="100%">

        </body>
</html>
```

Figure 5a: <hr> tag with attributes

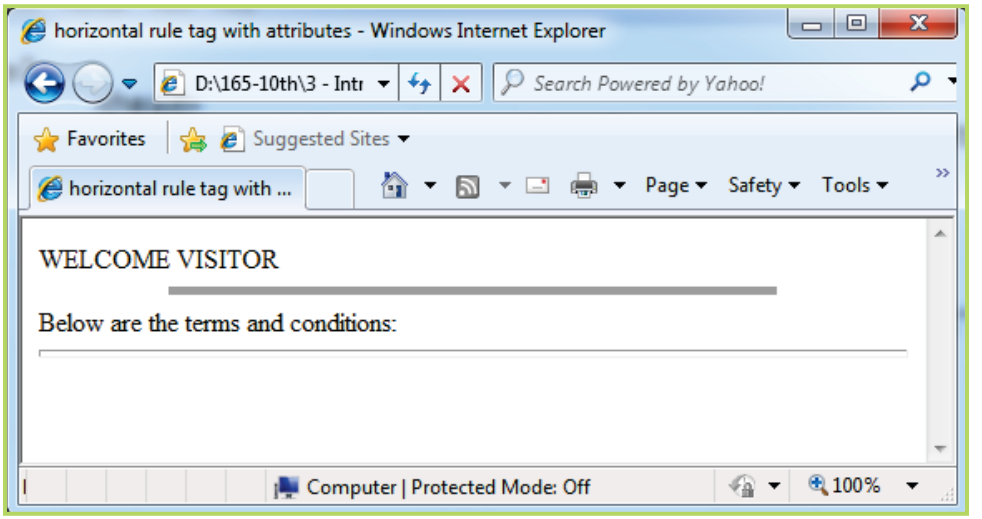


Figure 5b: Output of the <hr> tag with attributes

BR (Break line) tag

 tag inserts a single line break. It is useful for writing a poem or an address, where the division of lines is significant (figure 6a and 6b).

Syntax: <body>..... ABC Co. Pvt Ltd
New Delhi
 ..... </body>

```
<html>
        <head>
                <title>Line break tag</title>
        </head>

        <body>
                This text is a multi-line
                text but browser does not
                recognise line breaks util
                mentioned by the help of markup.
                <hr>
                Did you notice?<br>
                This text is disaplayed in multiple lines <br> created due to the use of <br> line break tag.
                Browser will break the line <br> where it encounters line break tag.

        </body>
</html>
```

**Figure 6a: Using
 tag**

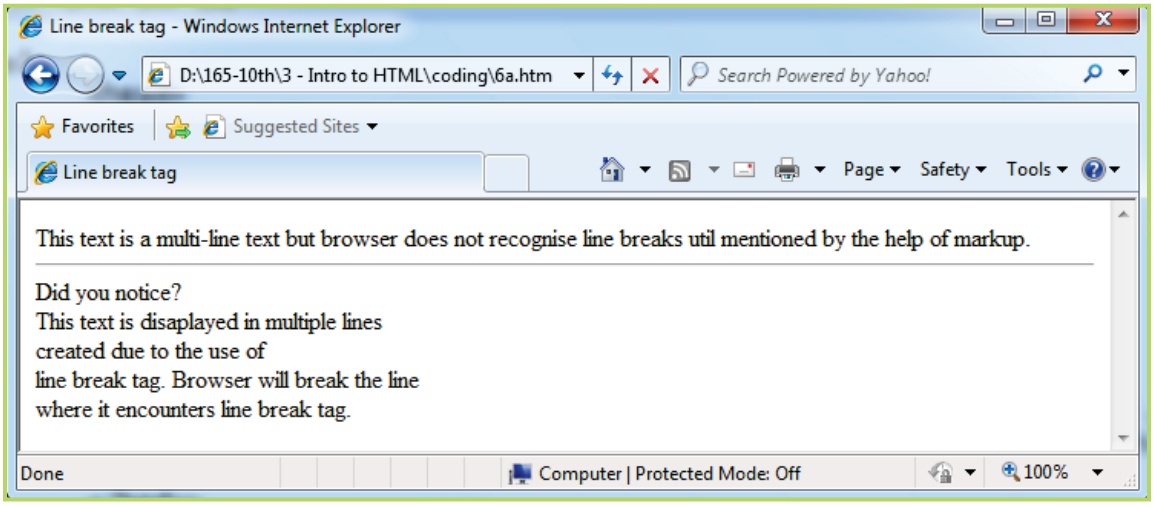


**Figure 6b: Output of the code with
 tag**

COMMENT IN HTML

The comment tag is used to insert comments in the source code. Comments are not displayed in the browsers (figure 7a and 7b). You can use comments to explain your code, which can help you when you edit the source code at a later date.

Syntax: <!-- This is commented out -->

```
<html>
        <head>
                <title>Comment tag</title>
        </head>
        <body>
                <!--
                        This text will not be displayed
                        as it is enclosed within comment tags.
                -->
                <br>
                HTML seems to be a lot of fun!
        </body>
</html>
```

Figure 7a: Using comment tag <!-- -->

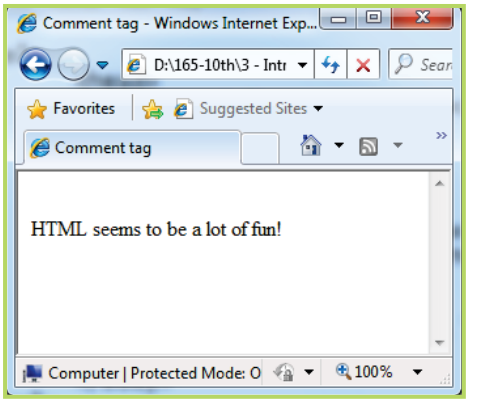


Figure 7b: Output of the code with <!-- --> tag

CENTER tag

The tag is used to put object into the center of the web page.

Syntax: ..... .

```
<html>
        <head>
                <title>Center tag</title>
        </head>
        <body>
                <center>HTML allows the developers to mark-up<br>
                the content to design web pages using HTML.
        </body>
</html>
```

Figure 8a: tag

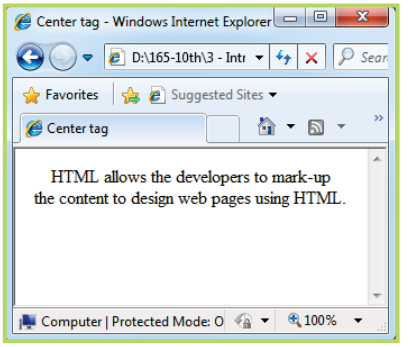


Figure 8b: Output of the code with tag

Glossary

HTML	:	Hypertext markup language.
Tag	:	The basic structure of an HTML document.
Attributes	:	It is used to provide additional information about an element.
BG-color	:	Background color.

You have learned

- ✓ HTML is Hyper Text Markup Language which is used to design web pages.
- ✓ HTML markups are tags which are place in a slanting bracket i.e. '<' and '>'.
- ✓ Editor is used to write, translator is used to translate and output is used to translate the program.
- ✓ The structure of HTML is divided into three parts HTML, HEAD and BODY.

- ✓ There are two types of HTML tags: empty tag and container tags.
- ✓ Attributes are used to view the additional information about the tag.
- ✓ tag is used to keep the objects of the web page into center.
- ✓ Heading <hn> tags are used to make the text easy to distinguish.
- ✓ There are six heading styles available in HTML.
- ✓ The
 tag is used to keep the text into the next line.
- ✓ <hr> tag is used to insert a Horizontal line onto the web page.

Solved Questions

1. Write short note on HTML.

Ans. HTML stands for Hypertext Markup Language. HTML was developed by Tim Berners Lee in Late 1991. It is basically originated from old language SGML.

Some Import points

- HTML is not a programming language.
- We can create HTML programs on a simple text editor like Notepad.
- It consist the markup tags which looks like <html>...</html>.
- It is saved with the extension of .html or .htm.
- Capital or small latter doesn't matter in Tags. You can write <HTML>, <html> or <HTml>.

2. What is a tag?

Ans. Tag is define as the basic building blocks of codes in an HTML document.

3. Name any two text editor to write HTML documents.

Ans. Notepad, Dreamweaver.

4. Define the purpose of Body Tag.

Ans. The BODY tag forms the body of an HTML document. It is used to set background image, color, text color, margin etc. of the body of web page.

5. How many types of Tags in HTML?

Ans. HTML has basically two types of tags. These are

(a) Empty Tag (b) Container Tag

6. Write steps to create a web page.

Ans. You can create a web page using a text editor by following a few steps:

1. Click on Start Button Programs Accessories Notepad.
2. The Notepad window appears. Type the HTML code.
3. Click on File Menu Click on Save As option.
4. Save as dialog box will appear.

Now, type the file name followed by an extension to save the file.

7. Define attributes (of a tag).

Ans. Tags can also have attributes, which are extra bits of information. Attributes appear inside the opening tag and their value is always inside quotation marks. They look something like <tag attribute="value"> Margarine</tag>.

Exercise-1

A. Choose the correct answer.

1. HTML is a markup language which is used to design

   a) Web Pages b) Documents

   c) Posters d) Brochures

2. Which of the following doesn't require for HTML programming?

   a) Editor b) Translator

   c) Assembler d) Browser Program

3. Which of the following is not the part of HTML structure?

   a) HTML b) HEAD

   c) BODY d) None of these

4. How many types of HTML tag in available?

   a) One b) Two

   c) Three d) Four

5. Which of the following attribute is used in <BODY> tag?

   a) Background b) Bgcolor

   c) Margin d) All of these

B. Answer the following questions.

1. What is HTML?
2. Write the things required for HTML programming?
3. What is an Empty tag?
4. What is a Container tag?
5. What is difference between a 'tag' and 'attribute'?
6. Explain the working of <body> tag.
7. Explain the working of tag.

Exercise-2

A. Fill in the blanks.

1. HTML stands for _____.
2. HTML markup codes are popularly known as an _____.
3. A popular and widely used HTML _____ is notepad.
4. A tag's attribute is used to provide _____ information about Notepad.
5. The _____ tag forms the body of HTML document.

6. HTML document is saved with the extension of _____ or _____.

7. Center tag is used to put object into the center of the _____.

8. The <head>tag is used to set the title of the _____.

9. _____ tag is used as a separator.

B. Match the following.

	Column A		Column B
1.	Heading Tag	a)	<Center>
2.	Center object	b)	
3.	Blank Line	c)	<HEAD>
4.	Web page body	d)	<H1>
5.	Title of web page	e)	<BODY>

C. State true or false.

1. HTML defines the structure and layout of web document.

2. HTML is the set of markup symbols.

3. HTML is a programming language.

4. Editor is used to view the output of HTML program code.

5.
 tag is used to insert a horizontal line.

D. Practical/ Lab Activity

Design the web pages as per the following directions:

1. Write an HTML code to display the text exactly the same way as given here:

   My first page is:

   Welcome to HTML

2. Write an HTML code to apply following conditions:

   Back-ground color= Blue

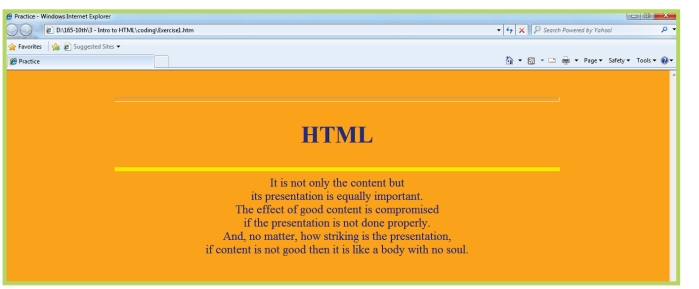
   Text color=Lime

   Heading style= <h5>

3. Write a HTML code to create a page like following:

4. Write an HTML code to represent "India is my country" in the following style:

   - Heading level should be 2 (h2).
   - The text should be aligned in center.
   - The back-ground color should be Blue.



FORMATTING IN HTML 4

CHAPTER FOCUSES ON

- ✓ Formatting tags
- ✓ Paragraph and font
- ✓ Bold, Italic, Underline
- ✓ Superscript, subscript and strikethrough
- ✓ HTML Entities

FORMATTING IN HTML

Formatting is used to improve the appearance of the text that appears in your web page. You can format the text by changing various properties, such as size, color style and alignment. Formatting helps to create your web page more attractive.

It includes text, graphics, links and images. Let us learn about formatting of web page.

PARAGRAPH Tag

Normally, we create space between two paragraphs using Enter key, but in HTML browser does not understand the space created by the Enter key. Therefore we use paragraph tag to inform the browser about a sentence to be started after the Enter key.

Syntax: ----------Paragraph Text----------

Attributes of Paragraph tag

- **Align:** This attribute sets the direction of text in paragraph. It's possible values are left, center, right and justify. Note: Default value is left.

  Syntax: ----------Paragraph Text----------

Let's use two examples to understand the application of Paragraph tag:

In figure 1a, we write the text between the <body> tag which is divided in three paragraphs but in browser windows displays the text in a single line (see figure 1b).

```
<html>
        <head>
                <title>Content without paragraph tag</title>
        </head>

        <body>
                In a huge pond, there lived many fish. They were arrogant and never listened to anyone. In this pond,
there also lived a kind-hearted crocodile.
                He advised the fish, “It does not pay to be arrogant and overconfident. It could be your downfall." But
        the fish never listened to him. “There is that crocodile, advising us again," they would say.

                One afternoon, the crocodile was resting beside a stone near the pond, when two fishermen stopped there to
                drink water.
                The fishermen noticed that the pond had many fish. “Look! This pond is full of fish. Let’s come here
                tomorrow with our fishing net," said one of them. “I am surprised we have not seen this place before!"
                exclaimed the other.

                The crocodile heard all this. When the fishermen left, he slowly slipped into the pond and went straight
                to the fish. “You all had better leave this pond before dawn. Early morning those two fishermen are going
                to come to this pond with their net," warned the crocodile.
                But the fish just laughed and said, “There have been many fishermen who have tried to catch us. These two
                are not going to catch us either. Do not you worry about us, Mr. Crocodile," they said in a mocking voice.

                The next morning, the fishermen came and threw their net in the pond. The nets were big and strong. Very
                soon all the fish were caught. “If only we had listened to Mr. Crocodile. He had only wanted to help. For
                our arrogance we have to pay with our lives," said the fish.
                The fishermen took the foolish fish to the market and sold them for a good profit.
</body>
</html>
```

Figure 1a: Code without tag

Now, we used the tag to mark a block of text as a paragraph. In other words tag used to separate your text into different paragraph (see figure 2a).

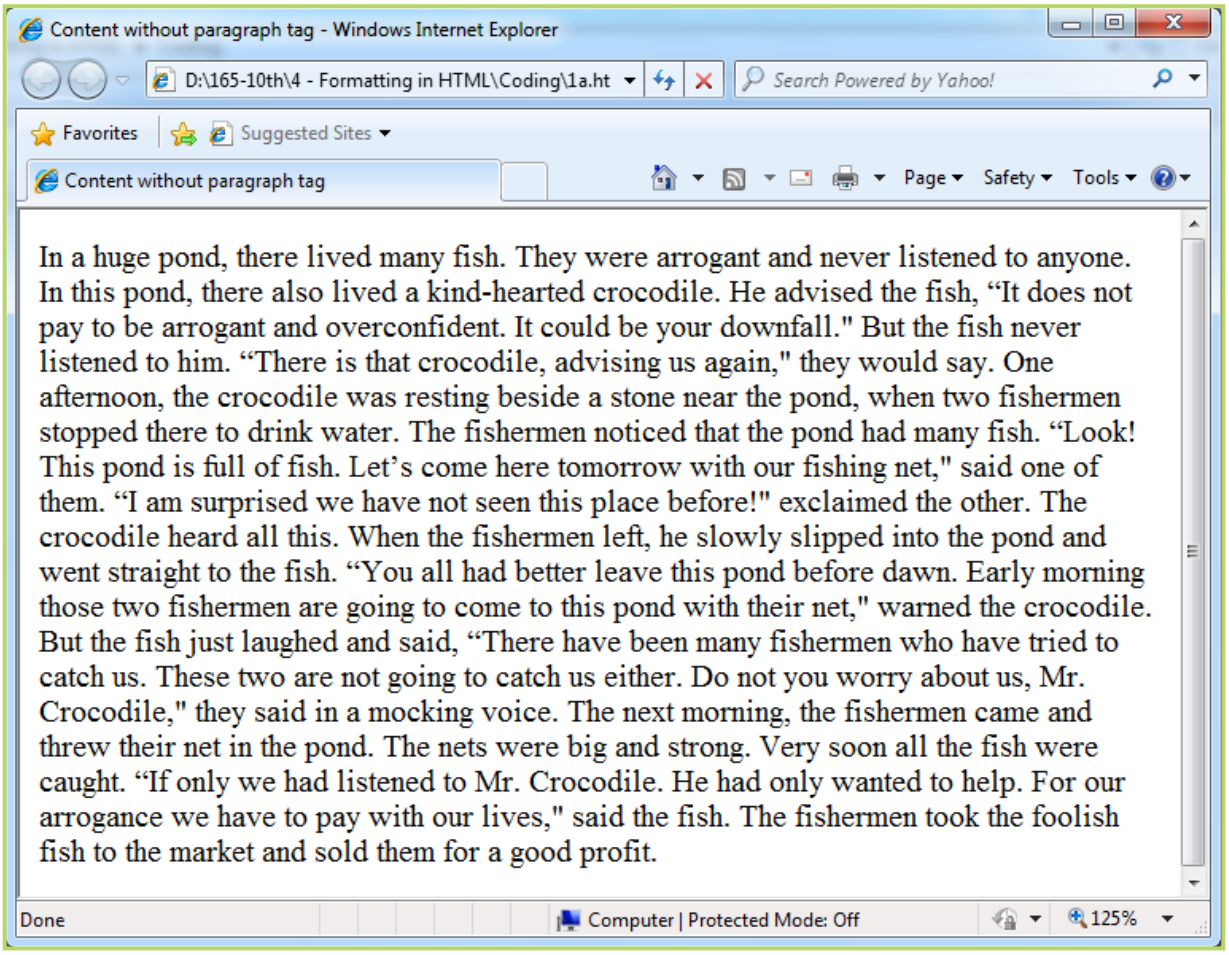


Figure 1b: Output of the code without <p> tag

```
<html>
	<head>
		<title>Content with paragraph tag</title>
	</head>

	<body>
		In a huge pond, there lived many fish. They were arrogant and never listened to anyone. In this pond,
		there also lived a kind-hearted crocodile.
		He advised the fish, “It does not pay to be arrogant and overconfident. It could be your downfall." But
		the fish never listened to him. “There is that crocodile, advising us again," they would say.
		<p align="center">
		One afternoon, the crocodile was resting beside a stone near the pond, when two fishermen stopped there to
		drink water.
		The fishermen noticed that the pond had many fish. “Look! This pond is full of fish. Let’s come here
		tomorrow with our fishing net," said one of them. “I am surprised we have not seen this place before!"
		exclaimed the other.
		</p>
		<p>
		The crocodile heard all this. When the fishermen left, he slowly slipped into the pond and went straight
		to the fish. “You all had better leave this pond before dawn. Early morning those two fishermen are going
		to come to this pond with their net," warned the crocodile.
		But the fish just laughed and said, “There have been many fishermen who have tried to catch us. These two
		are not going to catch us either. Do not you worry about us, Mr. Crocodile," they said in a mocking voice.
		</p>
		<p align="right">
		The next morning, the fishermen came and threw their net in the pond. The nets were big and strong. Very
		soon all the fish were caught. “If only we had listened to Mr. Crocodile. He had only wanted to help. For
		our arrogance we have to pay with our lives," said the fish.
		The fishermen took the foolish fish to the market and sold them for a good profit.
		</p>
</body>
</html>
```

Figure 2a: Code using <p> tag

Now, the output of the code is displayed in three different paragraphs. This is because the <p> tag is used to divide into three different paragraph (see figure 2b).

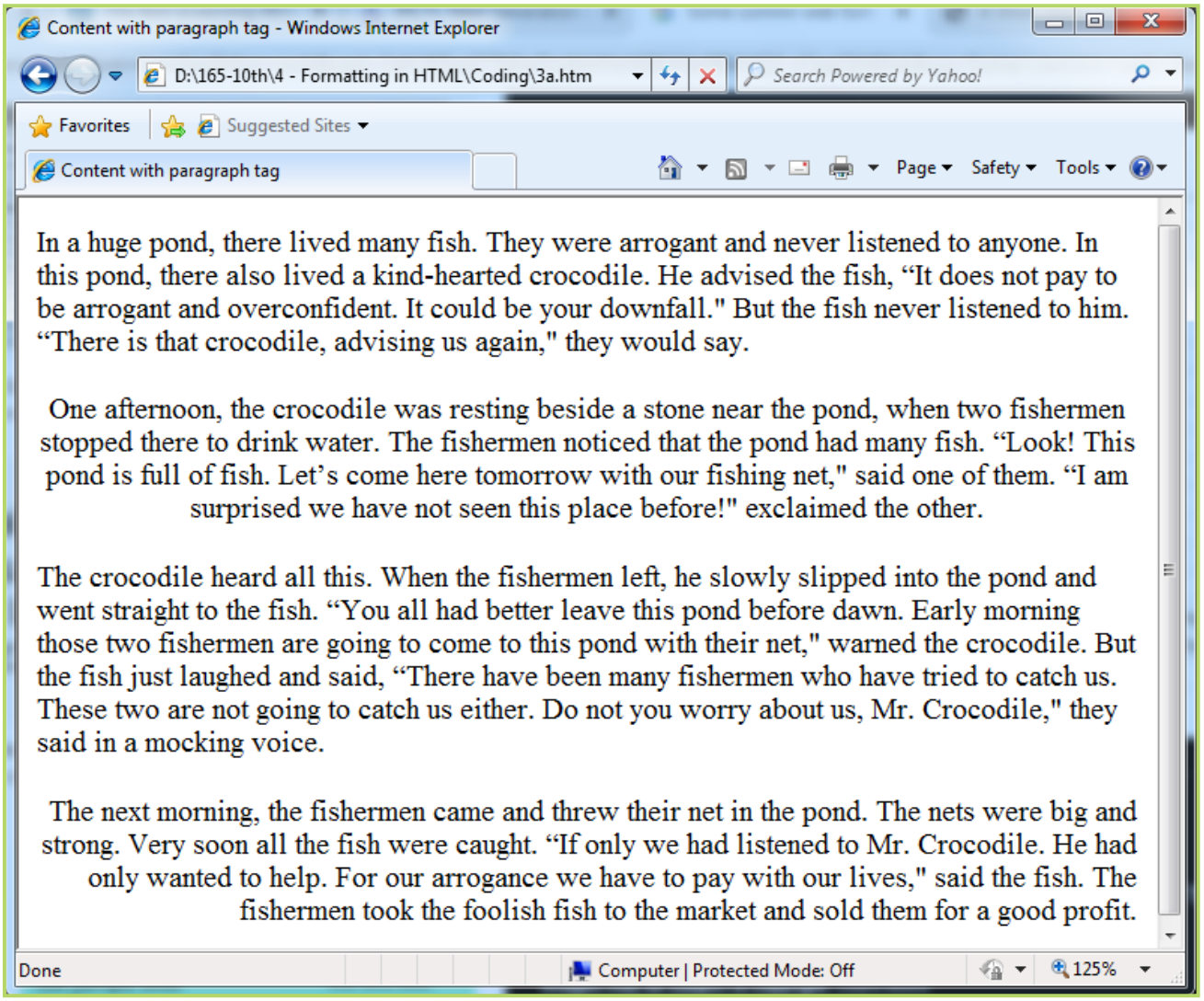


Figure 2b: Output of the code with <p> tag

FONT Tag

The tag is used to change the appearance of the text in terms of size and colour (figure 4a and 4b).

Syntax: .....

Attributes of tag

- **Size:** This attribute sets the size of the font. It takes values ranging from 1 (smallest) to 7 (largest).

  Note: the standard value is 3.

  Syntax: .....
- **Color:** This attribute takes a name of color
- **Face:** You can set font face using face attribute.

Note: 1. If the user viewing the page doesn't have the font installed, they will not be able to see it. Instead user will see the default font face applicable to the user's computer.
2. Specify alternate font faces: A visitor will only be able to see your font if they have that font installed on their computer. So, it is possible to specify two or more font face alternatives by listing the font face names, separated by a comma.

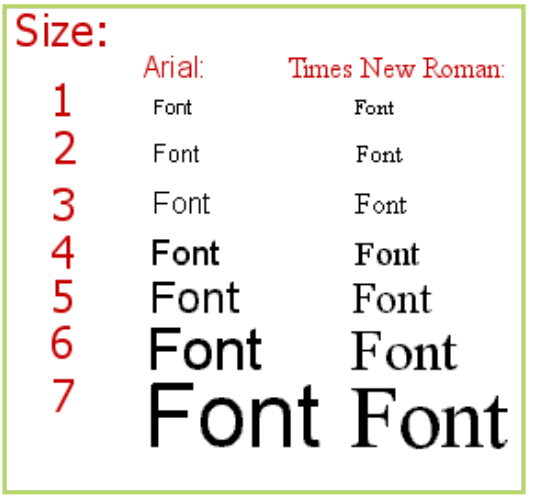


Figure 3a: Different font sizes

Figure 3b: Some examples of font faces

```
<html>
        <head>
                <title>font tag </title>
        </head>
        <body>
                <center>
                        <font size="6" color="#ff00ff" face="verdana, comic sans ms">
                                THE FOOLISH FISH
                        </font>
                </center>
                In a huge pond, there lived many fish. They were arrogant and never listened to anyone. In this pond,
                there also lived a kind-hearted crocodile.
                He advised the fish, "It does not pay to be arrogant and overconfident. It could be your downfall." But
                the fish never listened to him. "There is that crocodile, advising us again," they would say.
                <p>
```

Figure 4a: Code using <font> tag

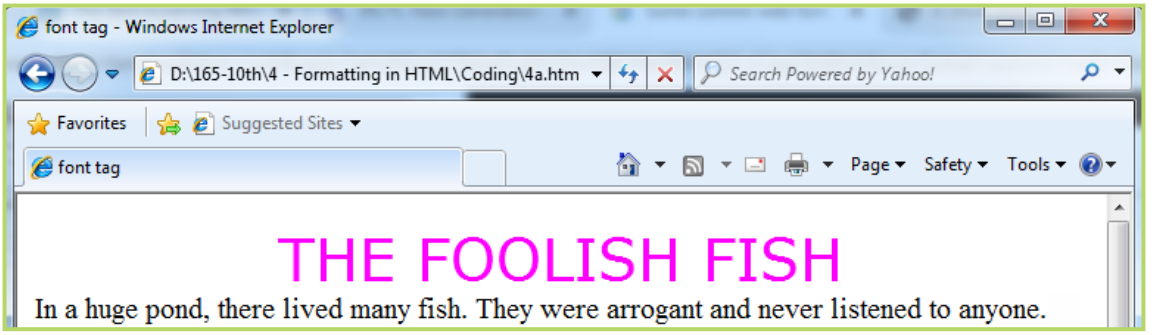


Figure 4b: Output of the code with <font> tag

BOLD Tag

Bold tag is used to display the text in bold font. This tag is generally used to give headings or to highlight important terms.

The idea here is to use the bold tag in quick formatting situations.

Syntax: My Company

Output: My Company

ITALIC Tag <I>

The italic tags should be used to highlight a key word or phrase. These tags are not intended to stylize or shape your font face. Rather, use them to emphasize text or words. The commonly used tag to place italic onto a website is <I>.

Syntax: Italic tag!

Output: Italic *tag*!

Html bold and Italics

Both the and the tags can be placed within other elements to format your texts. They can also be used together to bold and italicize words or phrases. Nothing fancy here, just be sure you open and close the tags in the same order.

Syntax: Phillip M. RogersonMD

Output:

Phillip M. Rogerson ***MD***

UNDERLINE Tag <u>

Underline tag helps to underline the text (figure 5a and 5b).

Syntax: Underline <u>tag</u>!

Output: Underline tag!

```
<body>
        <center>
                <font size="6" color="#ff00ff" face="verdana, comic sans ms">
                        <u>THE FOOLISH FISH</u>
                </font>
                <hr>
                <b>A SHORT STORY</b>
                <br>
                <i>for children</i>
                <br>
        </center>
        In a huge pond, there lived many fish. They were arrogant and never li
        there also lived a kind-hearted crocodile.
```

Figure 5a: Code using , and <u> tags

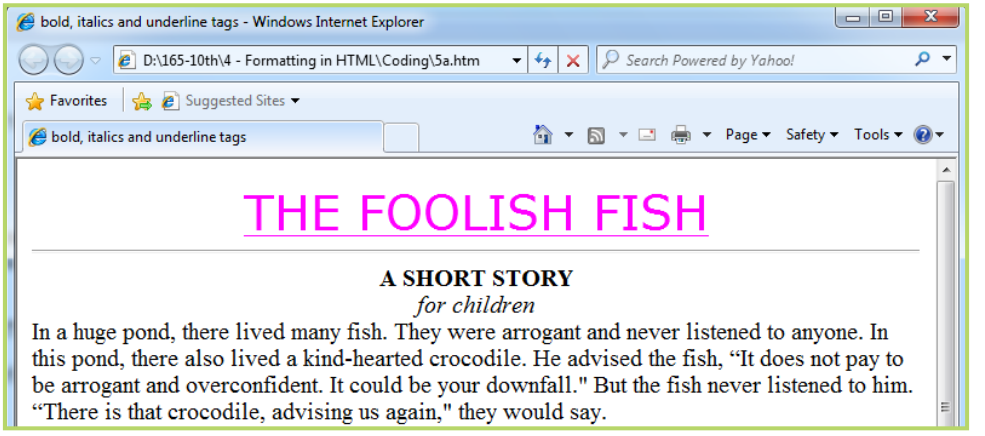


Figure 5b: Output of the code with , and <u> tags

SUBSCRIPT <sub> Tag

You can use the <sub> tag to create a subscript content (text) in the web page. This tag puts the character slightly below the line of regular text (figure 6a and 6b).

Syntax: Regular text _{subscript text}

Output: Regular text$_{subscripttext}$

SUPERSCRIPT <sup> Tag

You can use the <sup> tag to create a superscript content (text) in the web page. This tag puts the character slightly above the line of regular text (figure 6a and 6b).

Syntax: Regular text ^{superscript text}

Output: Regular text^{superscripttext}

```
<html>
        <head>
                <title>superscript and subscript tags</title>
        </head>

        <body>
                If c denotes the length of the hypotenuse and a and b denote the lengths of the other two sides,<br>
                the <b>Pythagorean theorem</b> can be expressed as the <i>Pythagorean equation</i>: <br>

                <font size=7>

                        a<sup>2</sup> + b<sup>2</sup> = c<sup>2</sup>
                </font>

                <hr>

                Burning of methane:<br>

                <font size=7>

                        CH<sub>4</sub> + 2O<sub>2</sub> = CO<sub>2</sub> + 2H<sub>2</sub>O
                </font>

        </body>
</html>
```

Figure 6a: Code using <subscript> and <superscript> tags

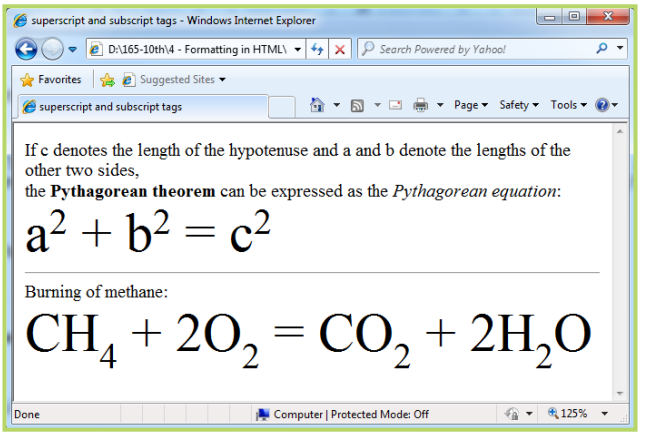


Figure 6b: Output of the code with <subscript> and <superscript> tags

STRIKETHROUGH <strike> Tag

The strikethrough tag <strike> specifies that the enclosed text should be rendered in a strike-through appearance. Usually this is done with a line through the middle of the text (figure 7a and 7b).

Syntax: <strike> ..... </strike>

```
<html>
        <head>
                <title>strikethrough tag</title>
        </head>

        <body>

                <font size=7 color="#ff0000">
                Original Price: Rs. <strike>5000/- </strike>
                </font>
                <p>
                <font size=7  color="#00ff00">
                Discounted Price: Rs. 5000/- !!

                </font>

        </body>
</html>
```

Figure 7a: Code using <strike> tag

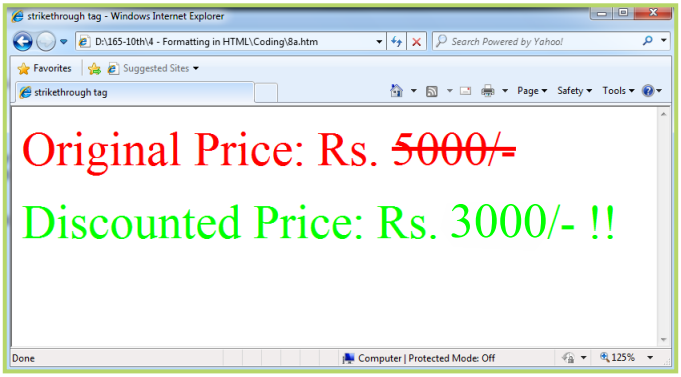


Figure 7b: Output of the code with <strike> tag

HTML ENTITIES

To make special characters and accented letters show up on the web pages, use a special set of codes called character entities, which you insert into your HTML code and which your browser will display as the

corresponding symbol or character accordingly. To use the character codes in HTML, remember to put the ampersand (&), before the code, and the semicolon (;) after the code.

To put some special characters or blank spaces on document we should use the following code:

Symbol	Code	Name
Its there, but you can't see it		
&		non-breaking space
¢	&	ampersand
©	¢	cent
÷	©	copyright
>	÷	divide
<	>	greater than
±	<	less than
€	±	plus/minus
"	€	Euro
“	"	quotation mark
”	“	left double curly quote
®	”	right double curly quote
	®	registered

Glossary

Tag : A command to instruct the web browser how to display the content of a web page.

Sub-script : A character or symbol set of printed or written beneath or slightly below and to the side of another character.

Super-script : A character or symbol set, printed, or written above immediately to one side of another character.

Attribute : Additional information about the HTML tag.

You have learned

- ✓ Formatting is a way to make web pages attractive.
- ✓ Some of the commonly used formatting tags are font, paragraph, bold, italic, underline, strike, superscript, subscript, etc.
- ✓ HTML paragraph tag is used to create a paragraph because HTML doesn't allow any link break, space etc. into text.
- ✓ Bold <b> tag is used to make the bold appearance of text.

- ✓ Italic tag is used to make the slanting appearance of text.
- ✓ Underline <u> tag is used to show the line under the text.
- ✓ Strikethrough <strike> tag is used to strike the text from the middle.
- ✓ Superscript <sup> tag is used to put the text on the top of the text.
- ✓ Subscript <sub> tag is used to put the text below the text.
- ✓ Some of the common symbol codes are - ' ', '©', '®' etc.

Solved Questions

1. Define paragraph <p> tag.

Ans. In HTML program code if you write the text which you should supposed to view on your web page should be outlined properly using tags so that it would be appear in a paragraph format.

2. How many types of alignment available in HTML?

Ans. There are four main alignments used in a paragraph: Left, Center, Right and Justify.

3. Define and tags.

Ans. Bold tag: It is used to display the text in bold font. It is an empty tag where the text written between the and . This tag is generally used to give headings or to highlight important terms.

Italics tag: It gives the text a slating appearance. It is an empty tag and the text written between and become tilted in comparison of other text.

4. Define Sub script <sub> and Super script <sup>tags.

Ans. Superscript tag is used to make the text on the up of the text.

For example- a^2+b^2.

Subscript tag is used to make the text down to the text.

For example- H_2O.

5. Define Font <font> tag.

Ans. The <font> tag can be used to change the appearance of the text in terms of size and color. The 'size' attribute takes values ranging from 1 (smallest) to 7 (largest).

Exercise-1

A. Choose the correct answer.

1. Formatting is a way to make the web pages

   a) Attractive b) Strong

   c) Bold d) None of these

2. Which of the following is a formatting tag?

   a) Font b) Paragraph

   c) Assembler d) All of these

3. The colour of the text can be changed using which of these tags?

   a) Color b) Font

   c) Paragraph d) None of these

4. Which of the following attribute is used to set font style?

a) Size b) Type

c) Face d) Color

5. Which of the following code is used to place copyright symbol on webpage?

a)   b) ©

c) ® d) All of these

B. Answer the following questions.

1. Explain formatting in HTML. Write some example of formatting tags.
2. What is alignment? Explain four alignment names in HTML.
3. Explain Bold <b> tag with example.
4. Explain Italic <i> tag with an example.
5. Write five special characters with output symbols.

Exercise-2

A. Fill in the blanks.

1. We create a paragraph using ... tags because HTML does not understand the space created by _____.
2. Underline <u> tag is used to show the line _____ the text.
3. <sup> tag is used to create a _____content (text) in the web page.
4. The 'size' attribute takes values ranging from _____ to _____.
5. The 'color' attribute takes a name of _____ as argument.
6. The 'face' attribute is used to change the appearance of _____.
7. To put some special characters we need to use _____.

B. State true or false.

1. Formatting a web page includes text, graphics, links, images, etc.
2. tag is used to create paragraph on web page.
3. <b> tag is used for Bulleted text.
4. <super> tag is used for applying superscript style.
5. <font> tag has no attributes.

C. Match the following.

	Column A		**Column B**
1.		a)	Double Quotes
2.	™	b)	Blank Space
3.	÷	c)	Registered symbol

4. ® d) Divide Symbol

5. " e) Trade Mark Symbol

D. Practical/ Lab Activity

1. Create an HTML according to following instruction,
   a) Heading level 3.
   b) The text should be left aligned.
   c) The text color should be red.
   d) The font should be: Comic Sans MS.
   e) The font size should be 5.
2. Write an HTML code to display the text in the following way:

   HTML stands for Hyper Text Markup Language (with blue color, Font size 20)

   HTML stands for Hyper Text Markup Language (with Green color, Heading style 2)

   HTML stands for Hyper Text Markup Language (with Red color, Center align, Underline style)
3. Create a HTML pages as following:

The combustion of glucose:

$$C_6H_{12}O_6(s)+6O_2(g) = 6CO_2(g)+6H_2O(l)$$

You are going to win a **laptop!**[1]

EduRoboPal®

In CLOUD We Work!®

[1]*Only for first 10 participants.*

After creating the page make the following page:

   a) Change the back-ground color to red.
   b) Change the text color to blue.
   c) Font size=16.
   d) Text alignment to center.
4. Write an HTML code to display the output in the following way:

   "ABC is the name of author."

   $(x^2 y^2 z^2) +2 (x_2 y_2 z_2)$
5. Write an HTML code to display the output in the following way:

   H^2O and SO_4

IMAGES, LINKS, LISTS AND TABLES IN HTML

5

CHAPTER FOCUSES ON

- ✓ The <image> tag
- ✓ The hyperlink <a> tag
- ✓ Lists in HTML Ordered, Unordered and Nested
- ✓ The <marquee> tag and it's behavior
- ✓ The <table> tag

Images are the main point of attraction in any web page design, so it is very important to understand that how to use them properly. In order to place an image onto a website, one needs to know where the image file is located. Web browser displays following type of image formats:

- Joint Photographic Experts Group (JPEG)
- X Bitmap
- Graphic Interchange Format (GIF)

IMAGE <img> Tag

The <img> tag is used to insert images in the web page.

Syntax: <img src="D:\Sunny\Pics\sunset.gif" >

Attributes of image tag

- **Src:** The source attribute (SRC) is used to specify the path and name of the image file. See the example given below to specify the path of an image file.

  Syntax: <img src="D:\images\logo.jpg">

- **Alt:** This attribute specify the alternate text which will be displayed, if the specified image is unavailable due to some reasons OR until the image is uploaded on the web page. Text-only browsers greatly depend on the alt attribute since they are not capable of displaying pictures.

  Syntax: <img src="D:\images\logo.jpg" alt="Summers Sunset">

  Once the image is displayed in web browser, alternative text is visible when the mouse pointer is placed over the image.

- **Height and width:** Height and width attributes define the height and width properties of an element. These values can either be in percentage (%) or pixel.

  For example, the width attribute is used to set the width of image. It takes an integer value in double quotes.

  The height attribute is used to set height of image. It also takes an integer value in double quotes.

  Syntax: <img src="sunset.gif" height="50" width="100"> Or

  <img src="sunset.gif" height="50%" width="50%">

Supported Image Formats

The HTML standard doesn't give a list of image format that must be supported, so each user agent supports a different set of formats. For example, JPEG, GIF (including animated GIFs), PNG, APNG, SVG, BMP, BMP ICO, PNG ICO, etc.

In the syntax, with pixels values for the height and width of an image, the image will be displayed in 50 pixels height and 100 pixels width (even if original size of the image file is much larger. If the dimensions of the picture are much larger, then the browser shrinks the image according to the specifications).

Percentage values are relative to the parent HTML element (usually the body), which means if you have a parent element, like the <body> element, i.e, the whole screen (1024x768), then an image with a height and width of 100% will take up that entire body element (1024x768). In the example given below, an image has been used with used with height- 50% and width- 50%.

```
<html>
        <head>
                <title>Image tag</title>
        </head>
        <body>
                <h4> Image taken from: <u>https://commons.wikimedia.org/wiki/File:Fish_cartoon.png#filelinks</u><h4>
                <img src="fish_cartoon.png" height="25%" width="15%" alt="HAPPY FISH">
        </body>
</html>
```

Figure 1: Code using <img> tag

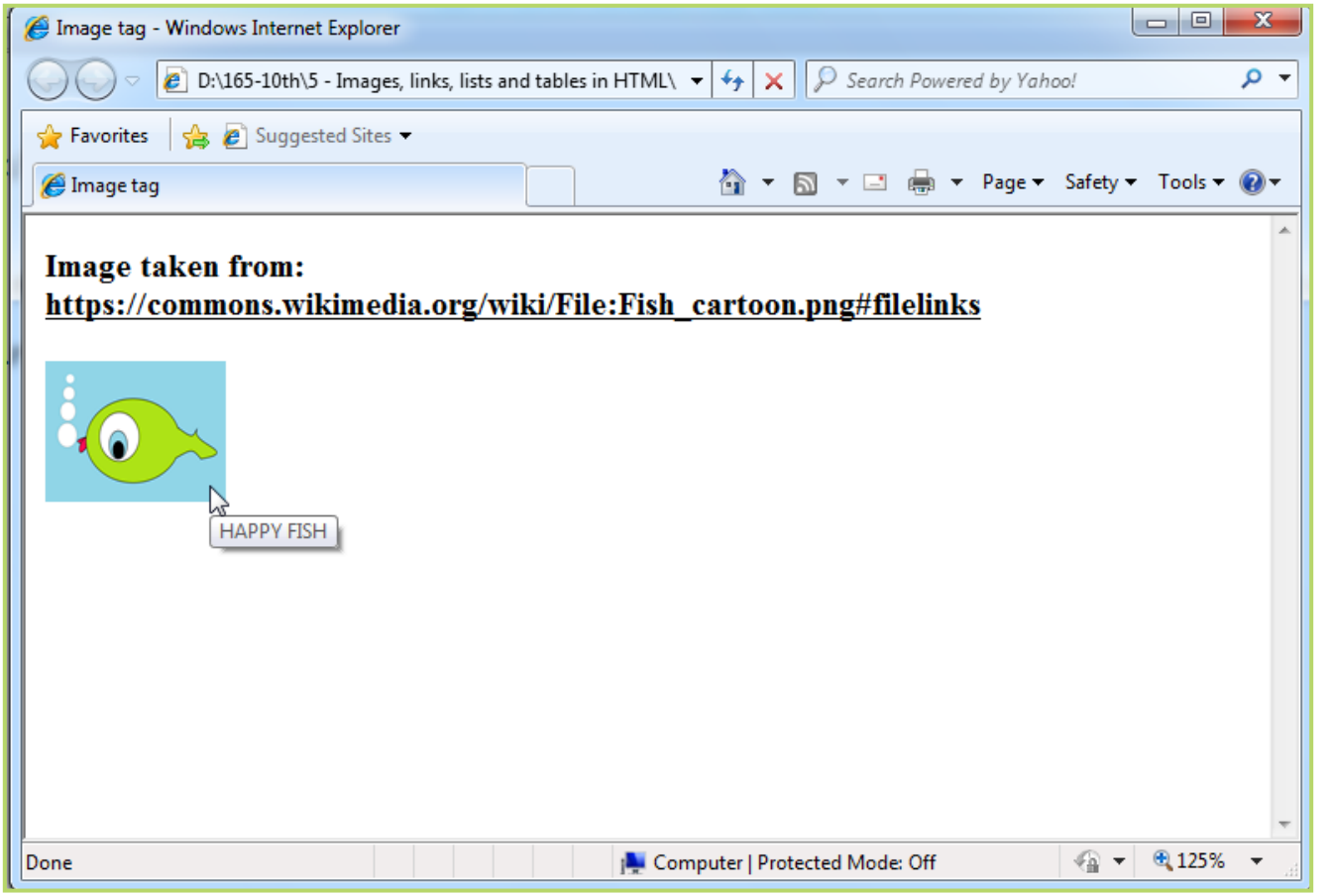


Figure 2: Output of the code with <img> tag

Note: Always try to keep html file and images on the same place. For example, if you are saving your program on desktop then copy the image and paste is on desktop as well so that you need not to write the entire path, in spite that you can write just only file name and extension.

Here are few things to remember when trying to place images on your web page:

1. Maintain the same height to width ratio. The ratio is critical, and must be maintained to avoid skewing.

2. Always scale down the image as the larger image always scaled down nicely by the browser.
3. If no height or width attribute is specified inside the <img> tag, the browser will use the actual dimensions of the image file to display the image. This can cause problems with the page layout if the picture file is too large, as other HTML elements will be moved further down on the page.
4. A browser begins rendering HTML components, it handles them one after another in sequence. Before it can move from one element to the next element, the browser needs to know the size and shape of an element. If this information is provided in the tag, one less step will be taken by the browser, which results in the faster page loading.

- **Alignment:** Alignment attribute can be used to position the image. The following alignment options are available: left, right, top, middle, bottom, absmiddle, absbottom, baseline, texttop.

  Syntax: <img src="D:\images\logo.jpg" align="left">
- **Spacing (hspace and vspace)**: Spacing attributes can be used to create space between the image and surrounding text by defining vertical (top and bottom) and horizontal (left and right) space.

  Syntax: <"D:\images\logo.jpg" vspace="5" hspace="10">
- **Border:** This attribute specifies the width of the border around an image. It's value is given in pixels.

  Syntax: <"D:\images\logo.jpg" border="1">
- **Usemap:** This attribute specifies an image as a client-side image-map.

  Syntax: <"D:\images\logo.jpg" usemap="#mapname">

ANCHOR (hyperlink) <a> tag

Hyperlink is used to link one page with another. You can link different web pages with the help of the links to make a complete website. A browser highlights the identified text or image with blue color and/or underline to indicate that it is a hyperlink. Hyperlinks can point to any resource on the web such as HTML Pages, images, sound files, videos, tables or any other objects.

The tag which is used to produce links is called the Anchor tag, or <a> tag. Whatever we write or place between <a> and behaves as the link.

Syntax: lnk text

Do You Know?

The address of a website is called a Uniform Resource Locator (a URL), and it acts like a street address for a website as a user is directed from one site to another.

Attributes of anchor tag

- **Href:** A Hypertext Reference (href) is an HTML attribute of an anchor (link) tag that requires a valid URL in order to properly direct a user to a different location.
- **Name:** This attribute is required in an anchor defining a target location within a page.
- **Target:** The target attribute defines how each link will be opened i.e, in same window or in a new window.

Target attribute has following possible values:

Target	Description
_blank	Opens new page in a new browser window
_self	Loads the new page in the current window
_parent	Loads new page into a parent frame
_top	Loads new page into the current browser window, cancelling all frames

syntax: ...

The '_self' is the default value. It loads each new page in the current browser window, while '_blank' opens the targeted web page in a new web browser window.

The following example tells about how to link Google.com (figure 3a and 3b). The target attribute is added to allow the browser to open Google.com in a new window.

```
<html>
        <head>
                <title>Hyperlinking with anchor tag</title>
        </head>

        <body
                <h4>Click on the links below<h4>

                <a href="https://www.wikipedia.org" target="_blank">WIKIPEDIA</a><p>
                <a href="story.htm" target="_blank">Read the story</a>

        </body>
</html>
```

Figure 3a: Code using <a> tag

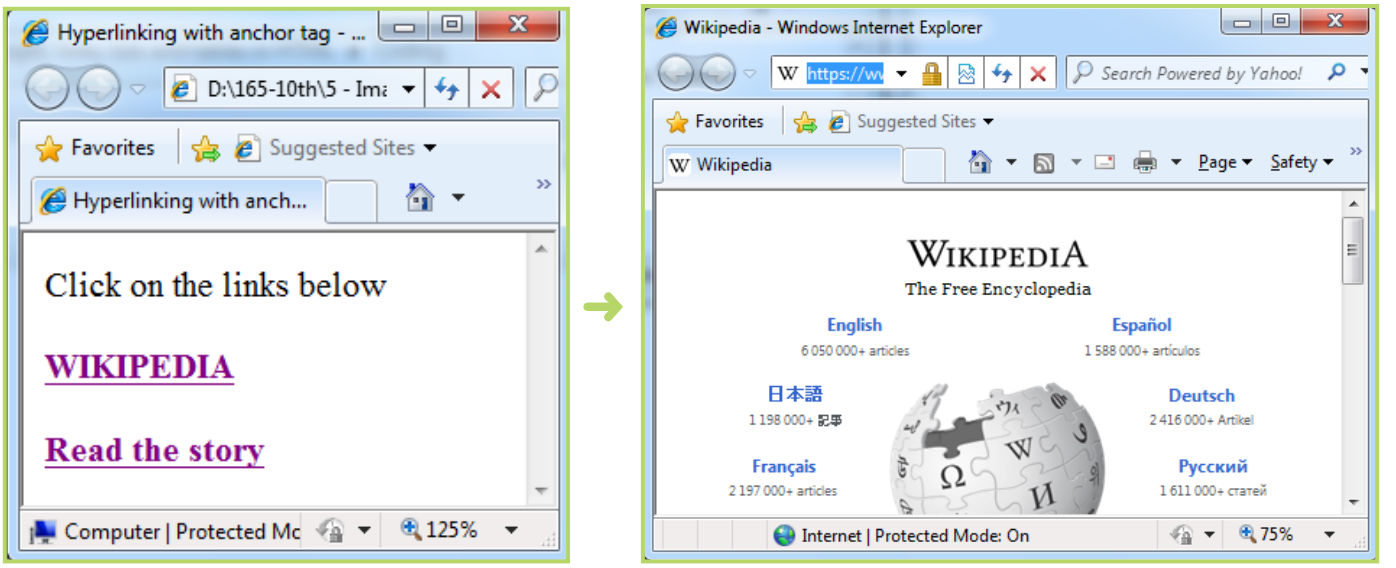


Figure 3b: Output of the code with <a> tag

Types of Hyperlink

There are two types of hyperlinks. These are internal hyperlink and external hyperlinks. External linking is used to link the one document with another documents. See figure 4a and 4b. Internal linking is used to link a portion of same document. Below given is an example of internal linking.

```
<html>
        <head>
                <title>Internal Hyperlinking</title>
        </head>

        <body>
                <h1 align="center"><a href="#chapter3">Go to CHAPTER 3</a></h3>
                <hr>
                <h1>INTRODUCTION</h1><br>
                This is social networking age. We all spend a considerable amount of time online depending on our
                interests and requirements. When we browse through social websites and online stores, a lot of suggestions
                pop-up or slide-in in our way. Where have they come from? A programmed component of the web site or mobile
                app is doing it. The big question is - How does these programs know what we might be interested in? Answer
                is, we are tracked right from the moment we logon to any online platform until we logoff. Websites and
                apps are programmed to track us in various ways like:
                Which pages and other web sites we visited?
                Which section of a web page we scrolled up to?
                Which links or buttons we clicked?
                How much time we spent on a web page?
                The above are a few examples of how our browsing is tracked which is called our browsing signature or
                browser fingerprinting.
                This data is analysed by the intelligent programs and as a result we are recommended new products likely
                to interest us thereby increasing the chances of we end up buying them. Isn't it intelligent?
                These programs compile such huge data chunks from millions of visitors daily and churn out the intelligent
                results out of it. This analysis of such an enormous amount of data to produce useful patterns of
                visitor's browsing habits, interests and buying preferences is called analytics.
                This very nature of AI field makes it a huge umbrella of technology which covers all the domains and
                application areas which can be influenced by it in a revolutionary manner.
                Think of what a machine as intelligent as a human being can do in any field!
                <hr>

                <h1><a NAME="chapter3">CHAPTER 3</a></h1>
                Intelligence is a process that evolves by the time and has practically no limit.
                What makes humans intelligent is their ability reason. But what triggers reasoning? What stimulates us to
```

Figure 4a: Code for internal linking

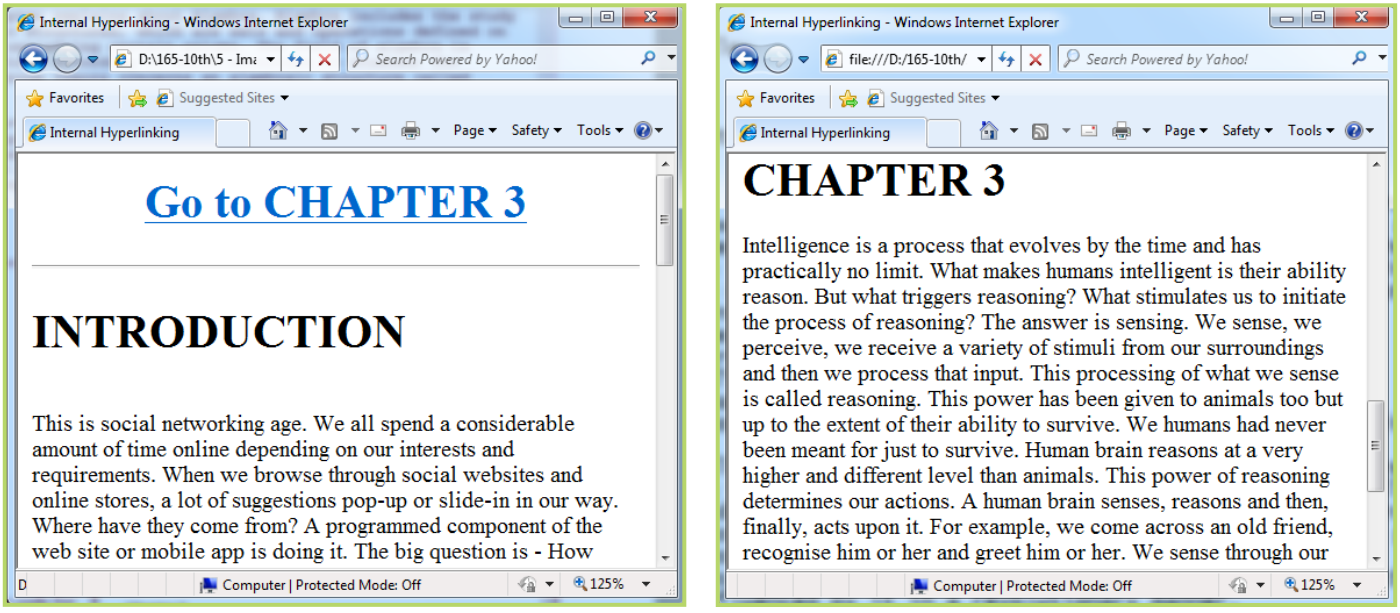


Figure 4b: Output of the code for internal linking

CREATING LISTS IN HTML

HTML lists appear in web browsers as bulleted lines of text. Each list type utilizes it's own unique list tag, which we'll demonstrate below.

To create a list in HTML we use <li> tag. HTML supports three types of lists. These are:

(a) Ordered Lists (numbers) (b) Unordered Lists (bullets) (c) Nested Lists

Ordered List

Ordered list <ol> is used to make the numbered sequence of items. By default, it starts with 1. Use <ol> tag to create an ordered list and <li> tag to create items of the list. It supports two attributes (figure 5a and 5b).

Attributes of <ol> tag

- **Type:** This attribute specifies the type of the numbering to appear for and the list. The numbering can be 1, a, A, i or I.

  Syntax: <ol type="1" or "I" or "A" or "a"> ...

- **Start:** Any numeric value that gives the starting value of the list item is called start value.

  Syntax: <ol type="1" start=5> ...

Do You Know?

You do not need to apply any line break
 tag in list item because <li> tag by default breaks the text into next line.

Type	Style	Sequence
1	Numbers	1, 2, 3, 4, 5 ....
I	Roman numbers (with capital)	I, II, III, IV, V ...
i	Roman numbers (with small letters)	i, ii, iii, iv, v ...
A	Alphabets (Capital letters)	A, B, C, D, E ...
a	Alphabets (small letters)	a, b, c, d, e ...

Figure 5a: Code using <ol> tag

```
<OL>
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

1. Mango
2. Orange
3. Banana

```
<OL type="A">
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

A. Mango
B. Orange
C. Banana

```
<OL type="i">
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

i. Mango
ii. Orange
iii. Banana

```
<OL Type="a" Start="4">
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

d. Mango
e. Orange
f. Banana

```
<OL Type="I" Start="6">
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

VI. Mango
VII. Orange
VIII. Banana

```
<OL Type="A" Start="27">
  <LI>Mango</LI>
  <LI>Orange</LI>
  <LI>Banana</LI>
</OL>
```

AA. Mango
AB. Orange
AC. Banana

Figure 5b: Output of the code using <ol> tag

Unordered List

An unordered list (<ul>) signifies to a web browser that all list items contained inside the <ul> tag should be rendered with a bullet preceding the text. The default bullet type for most web browsers is a full disc (black circle), but this can be adjusted using an attribute called 'type' (figure 6a and 6b).

To create an unordered list, we will use <ul> tag. HTML unordered list types:

type="square"
- Milk
- Toilet Paper
- Cereal
- Bread

type="disc"
- Milk
- Toilet Paper
- Cereal
- Bread

type="circle"
- Milk
- Toilet Paper
- Cereal
- Bread

Unordered List 'type' attribute

- <ul type="square">
- <ul type="disc">
- <ul type="circle">

```
<html>
	<head>
		<title>Unordered list</title>
	</head>
	<body>
	<b>Default (disc) unordered list:</b><br>
	<ul>
		<li>Mango</li>
		<li>Orange</li>
		<li>Banana</li>
	</ul>

	<b>Unordered list with disc bullets specified:</b><br>
	<ul type="disc">
		<li>Mango</li>
		<li>Orange</li>
		<li>Banana</li>
	</ul>

	<b>Unordered list with square bullets:</b><br>
	<ul type="square">
		<li>Mango</li>
		<li>Orange</li>
		<li>Banana</li>
	</ul>

	<b>Unordered list with circle bullets:</b><br>
	<ul type="circle">
		<li>Mango</li>
		<li>Orange</li>
		<li>Banana</li>
	</ul>

	</body>
</html>
```

Figure 6a: Code using <ul> tag

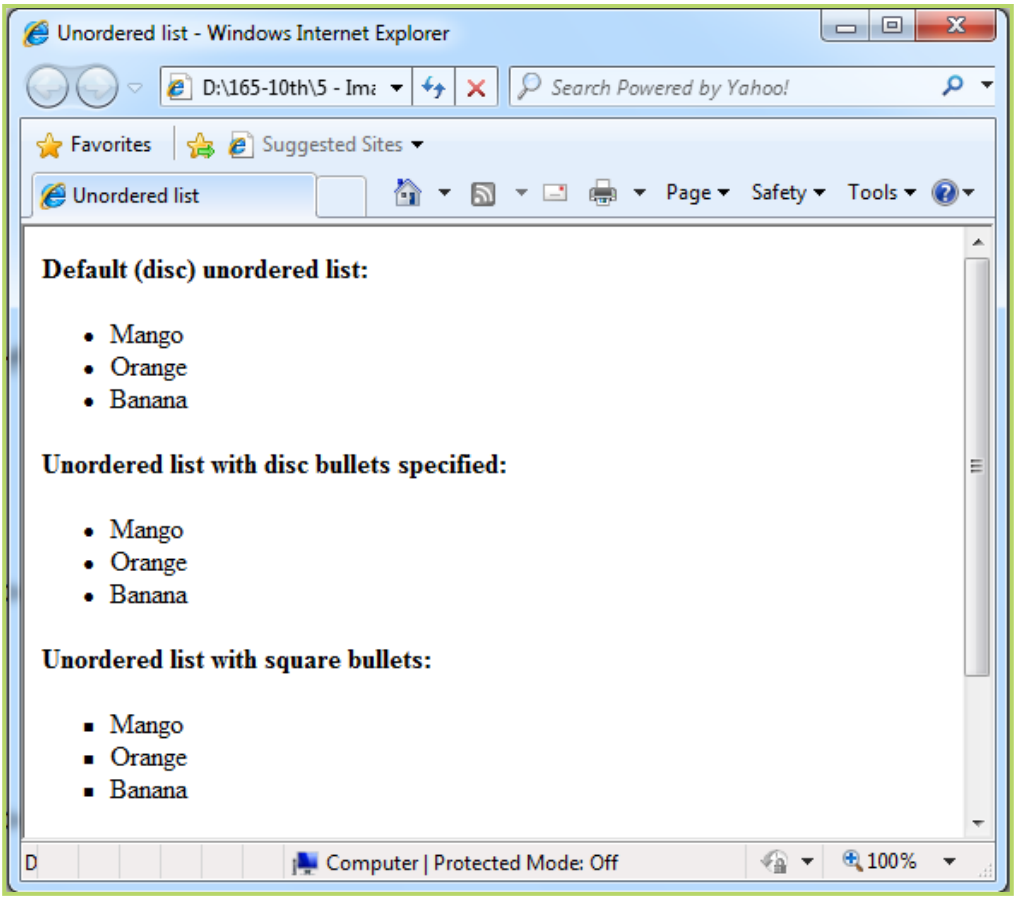


Figure 6b: Output of the code using <ul> tag

Nested Lists

Creating a list within another list is called as Nested List. Any type of list can be nested. For example, in an ordered list an unordered list can be created and vice versa (figure 7a and 7b).

```
<html>
        <head>
                <title>Nested list</title>
        </head>
        <body>
        <ol>
        <li>Fruit Shakes</li>
                <ul type="disc">
                        <li>Mango</li>
                        <li>Orange</li>
                        <li>Banana</li>
                </ul>

        <li>Icecreams</li>
                <ul type="square">
                        <li>Strawberry</li>
                        <li>Butterscotch</li>
                        <li>Chocolate</li>
                </ul>

        <li>Cakes</li>
                <ul type="circle">
                        <li>Vanilla</li>
                        <li>Fruit</li>
                        <li>Black currant</li>
                </ul>
        </ol>

        </body>
</html>
```

Figure 7a: Code to create a nested list

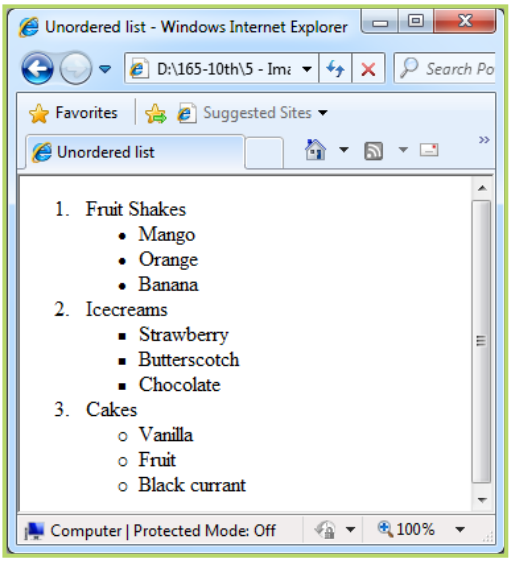


Figure 7b: Output of the code for nested list

Definition List

In a definition list, each item contains two or more entries; a definition term (<dt>) and at least one definition description (<dd>). Definition lists are created using the (<dl>) tag (figure 8a and 8b). You can place HTML tags such as <p>,
 and <img> tags etc. inside the <dd> tag.

```
<html>
        <head>
                <title>Definition Lists</title>
        </head>

        <body>
                <dl>
                        <dt>HTML</dt>
                        <dd>Hypertext Markup Language</dd>
                </dl>
                <dl>
                        <dt>XML</dt>
                        <dd>eXtensible Markup Language</dd>
                </dl>           <dl>
                        <dt>VRML</dt>
                        <dd>Virtual Reality Markup Language</dd>
                </dl>
                <dl>
                        <dt>MathML</dt>
                        <dd>Math Markup Language</dd>
                </dl>
        </body>
</html>
```

Figure 8a: Code using <dl> tag

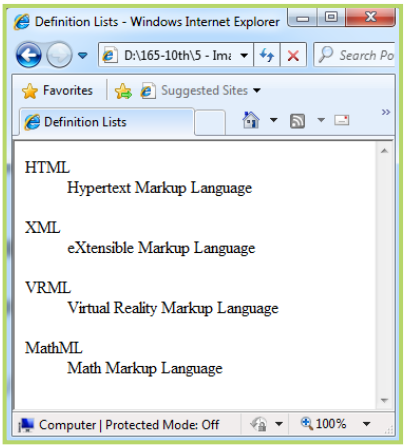


Figure 8b: Output of the code using <dl> tag

MARQUEE <marquee> Tag

Marquee tag is used to display the text or image in motion (vertically or horizontally). We can place the moving text on pages using <marquee> tag. It can be inserted anywhere in the webpage. Whatever the text or table or object we put between the marquee tags will be movable (figure 9a and 9b). Syntax: <marquee>.....</marquee>

It has many attributes such as direction, bgcolor, height, loop, width, and scroll amount.

Attributes of marquee tag

- **Direction:** The 'direction' attribute is used to set the direction of scroll or movement. We can set direction as left, right, up and down. Syntax:

  <marquee direction="left">... </marquee>

- **Bgcolor:** The 'bgcolor' attribute is used to set the background color.

  Syntax: <marquee bgcolor="green"> ... </marquee>

- **Width:** 'Width' attribute is used to set the width of marquee.

  Syntax: <marquee width=500> ... </marquee>

- **Behavior:** 'Behavior' attribute is used to set the value which shows that how the content should scroll. Behavior attribute can have the following values:

  (a) Scroll: It moves the object from one side to another side completely and then starts again. This action remain continue all the time.

  (b) Slide: It moves the object from one side and stop at the another side. This action will be executed at once only.

  (c) Alternate: It would bounce back the text back and forth between the marquee widths to make the object visible all the time.

  Syntax: <marquee behavior="scroll"> ... </marquee>

- **Scrollamount:** This attribute is used to set the speed of movement of marquee object. So 'scrollamount= 1' gives you the slowest scroll speed and 'scrollamount=7' gives you the fastest scroll speed.

  Syntax:<marquee scrollamount=1> ... </marquee>

```
<html>
        <head>
                <title>Marquee tag</title>
        </head>
        <body>

        <marquee width="70%" behavior="scroll" direction="left" bgcolor="lightblue" scrollamount="1">
                <h3>This is scrolling too slow in default left direction.</h3>
        </marquee>

        <p>

        <marquee behavior="alternate" direction="right" bgcolor="lightgreen" scrollamount="200">
                <h3>This is bumping either side. Fast!</h3>
        </marquee>

        <p>

        <marquee  height="30%"  behavior="alternate" direction="up" bgcolor="lime" scrollamount="20">
                <h3>This is jumping.</h3>
        </marquee>

        </body>
</html>
```

Figure 9a: Code using <marquee> tag

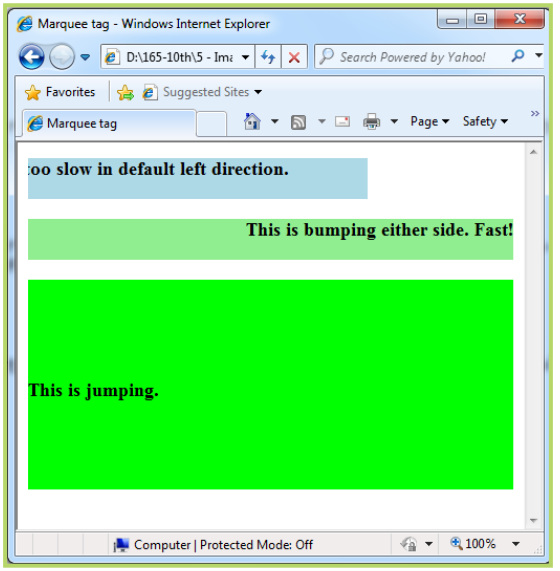


Figure 9b: Output of the code using <marquee> tag

TABLE <table> tag

An HTML table is an element comprised of table rows and columns.

The HTML table allows web designers to arrange data such as text, preformatted text, images, links, forms, form fields, other tables, etc. into rows and columns of cells. Each table may have an associated caption that provides a short description of the table's purpose.

The HTML <table> tag is used for defining a table. The table tag contains other tags that define the structure of the table (figure 10a and 10b).

The <Table> tag elements

The components of a <table> tag are given below:

- **The <table> tag:** It is used to insert a table in your page.
- **The <caption>tag:** It is used to define a title for the table and shows up at the top of the table..
- **The <tr>tag:** It is used to define rows in a table.
- **The <td> tag:** It is used to insert cells in a table.
- **The <th>tag:** It is used to define current cell as table header.

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>

        <table>
        <caption>Class Monitors</caption>

        <tr>
                <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>
        </tr>
        <tr>
                <td>9</th>      <td>A</td>   <td>Neha Taneja</td>
        </tr>
        <tr>
                <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>10</td>     <td>B</td>   <td>Ajay Verma</td>
        </tr>


        </table>

        </body>
</html>
```

Figure 10a: Code to create a table

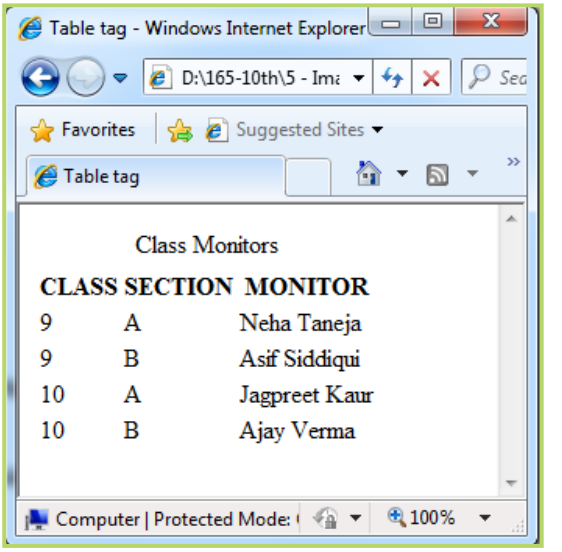


Figure 10b: Output of the code to create a table

Attributes of table tag

- **Border:** This attribute is used to give a border around the table. You determine the width of the border using a number. For example, for a thin border, use the number "1". For a thicker border, use a greater number.

  Syntax: <table border="2">... </table>

- **Bordercolor:** This attribute is used to give a colour to the border of the table. Note: Possible value can be in the form of hexadecimal ("#FFFF99") value or colour name ("Red").

  Syntax: <table border="2" bordercolor="Red"> ... </table>

- **Bgcolor:** This attribute is used to give the background colour to the table. Note: Possible value can be in the form of hexadecimal ("#FFFF99") value or colour name ("Red").

  Syntax: <table border="2" bgcolor="cyan"> ... </table>

Note: 'Bgcolor' attribute can also be used in <tr> tag.

Syntax: <tr bgcolor="aqua">

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>

        <table border="2" bordercolor="maroon" bgcolor="lightgreen">
        <caption>Class Monitors</caption>

        <tr>
                <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>
        </tr>
        <tr>
                <td>9</th>      <td>A</td>   <td>Neha Taneja</td>
        </tr>
        <tr>
                <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>10</td>     <td>B</td>   <td>Ajay Verma</td>
        </tr>


        </table>

        </body>
</html>
```

Figure 11a: Code to create a table using 'border', 'bordercolor' and 'bgcolor' attributes

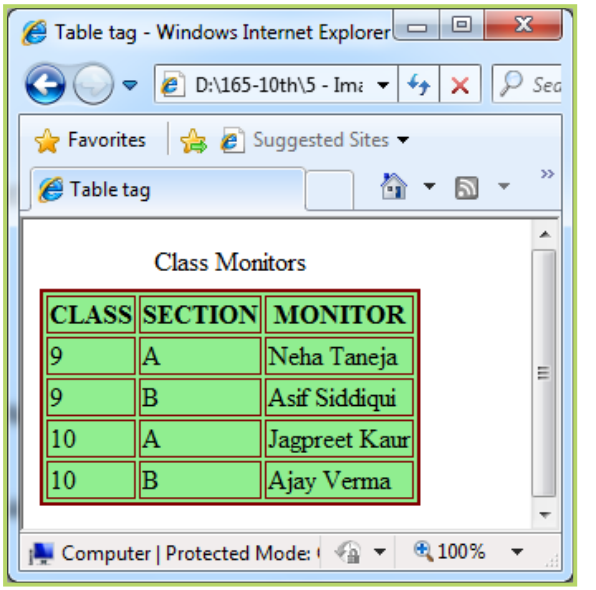


Figure 11b: Output of the code using 'border', 'bordercolor' and 'bgcolor' attributes

- **Width:** This attribute defines that which lines or rules to draw between rows and columns in your table.

  Possible values are:

  i) None= No rules are drawn (default value).

  ii) Groups= Rules drawn between row groups and column groups.

  iii) Rows= Rules are drawn between rows only.

  iv) Cols= Rules are drawn between columns only.

  v) All= Rules are drawn between all rows and columns.

  Syntax: <table rules="value"> ... </table>

- **Frame:** This attribute is to specify which sides of a table frame should be displayed.

  Syntax: <table frame="value" >.....</table>

  Possible values of 'frame' attribute are given below:

Value	Description
void	Only outside borders are not displayed.
above	Only top outside is displayed.
below	Only bottom outside border is displayed.
hsides	Only top and bottom outside borders are displayed.
vsides	Only left and right outside borders are displayed.
lhs	Only left outside border is displayed.
rhs	Only right outside border is displayed.
box	For all four sides, only outside borders are displayed.
border	For all four sides, only outside borders are displayed.

Note: The table frame and rules can be drawn in the absence of the border attribute. However if the border attribute is expressed and has a value of "0", it will override any values entered for frame or rules (frame will default to void while rules will default to none).

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>

        <table rules="rows" frame="hside">
        <caption>Class Monitors</caption>

        <tr>
                <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>
        </tr>
        <tr>
                <td>9</th>      <td>A</td>   <td>Neha Taneja</td>
        </tr>
        <tr>
                <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>10</td>     <td>B</td>   <td>Ajay Verma</td>
        </tr>


        </table>

        </body>
</html>
```

Figure 12a: Code to create a table using 'rules' and 'frame' attributes

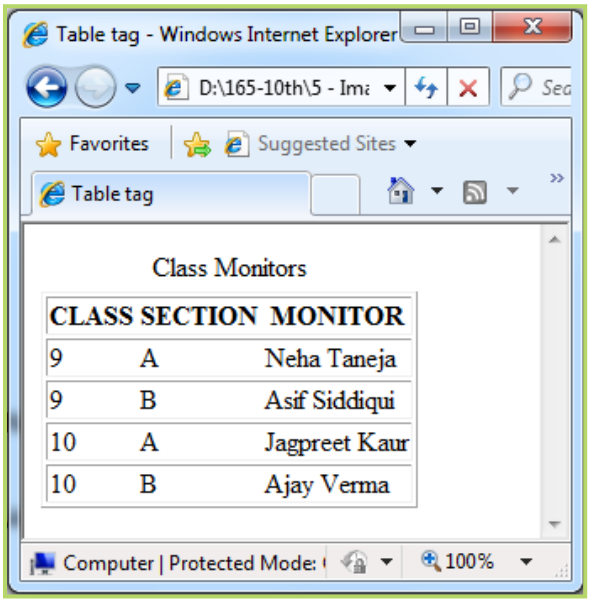


Figure 12b: Output of the code using 'rules' and 'frame' attributes

Example: Below given is a sample code to understand 'frame' attribute with its possible values (figure 13a & 13b).

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <h3>Frame: box</h3>
        <table frame="box">
        <caption>Class Monitors</caption>
        <tr>            <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>     </tr>
        <tr>            <td>9</th>      <td>A</td>   <td>Neha Taneja</td>     </tr>
        <tr>            <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>   </tr>
        <tr>            <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>   </tr>
        <tr>            <td>10</td>     <td>B</td>   <td>Ajay Verma</td>      </tr>
        </table>

        <h3>Frame: hsides</h3>
        <table frame="hsides">
        <caption>Class Monitors</caption>
        <tr>            <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>     </tr>
        <tr>            <td>9</th>      <td>A</td>   <td>Neha Taneja</td>     </tr>
        <tr>            <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>   </tr>
        <tr>            <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>   </tr>
        <tr>            <td>10</td>     <td>B</td>   <td>Ajay Verma</td>      </tr>
        </table>

        <h3>Frame: above</h3>
        <table frame="above">
        <caption>Class Monitors</caption>
        <tr>            <th>CLASS</th>  <th>SECTION</th>   <th>MONITOR</th>     </tr>
        <tr>            <td>9</th>      <td>A</td>   <td>Neha Taneja</td>     </tr>
        <tr>            <td>9</td>      <td>B</td>   <td>Asif Siddiqui</td>   </tr>
        <tr>            <td>10</td>     <td>A</td>   <td>Jagpreet Kaur</td>   </tr>
        <tr>            <td>10</td>     <td>B</td>   <td>Ajay Verma</td>      </tr>
        </table>
        </body>
</html>
```

Figure 13a

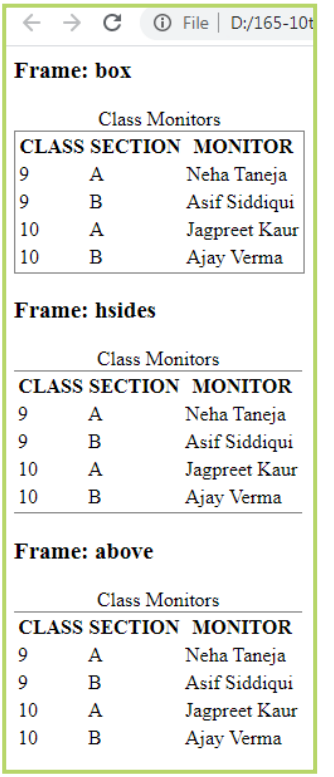


Figure 13b: Output of the code using possible values of 'frame' attribute

- **Width:** This attribute is to specify the width of the table. It's value can be given in %age.

  Syntax: <table width= "100%">.....</table>

- **Cellpadding:** This attribute is to adjust the spacing between table cells; it means, it determines how much space will exist between a table cell border and the elements contained within it,

  Syntax: <table cellpadding="5">.....</table>

- **Cellspacing:** This attribute determines how much space will exist between each table cell.

  Syntax: <table cellspacing="5">.....</table>

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <table width="75%" cellpadding="5" cellspacing="7" border="5" bgcolor="lightgreen" bordercolor="blue">
        <caption>Class Monitors</caption>
        <tr>            <th>CLASS</th>  <th>SECTION</th>    <th>MONITOR</th>      </tr>
        <tr>            <td>9</th>      <td>A</td>    <td>Neha Taneja</td>       </tr>
        <tr>            <td>9</td>      <td>B</td>    <td>Asif Siddiqui</td>     </tr>
        <tr>            <td>10</td>     <td>A</td>    <td>Jagpreet Kaur</td>     </tr>
        <tr>            <td>10</td>     <td>B</td>    <td>Ajay Verma</td>        </tr>
        </table>

</table>
        </body>
</html>
```

Figure 14a: Code to create a table using 'width', 'cellpadding' and 'cellspacing' attributes

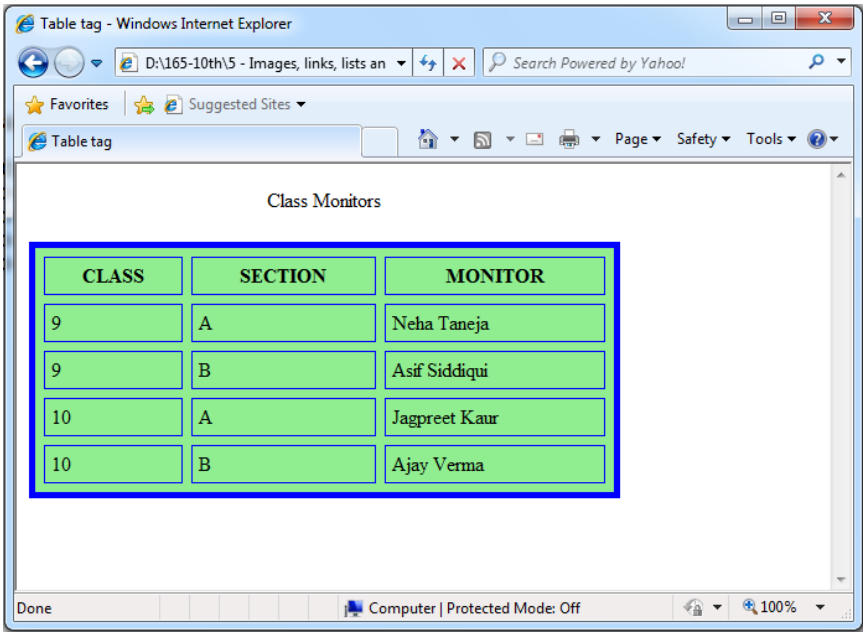


Figure 14b: Output of the code using 'width', 'cellpadding' and 'cellspacing' attributes

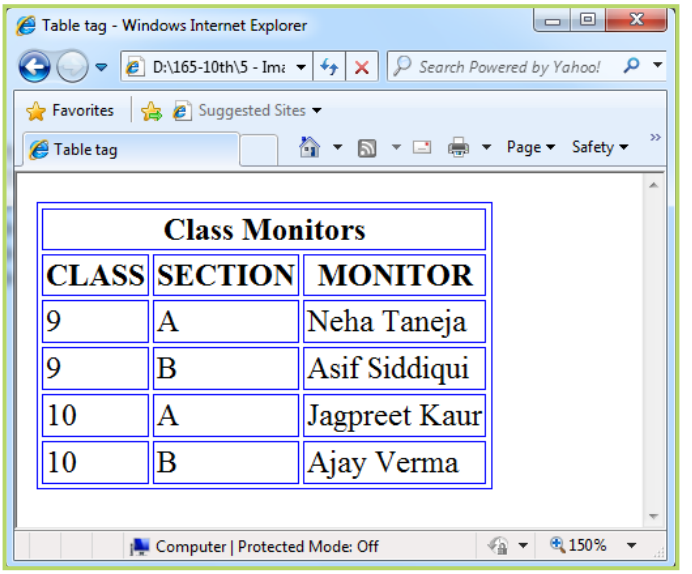
- **Colspan:** This attribute is to make a cell span multiple columns. It takes numeric value as its argument (figure 15a and 15b).

  Syntax: <table colspan="2">.....</table>

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <table border="1" bordercolor="blue">
        <tr><th colspan="3">Class Monitors</th></tr>
        <tr>            <th>CLASS</th>  <th>SECTION</th>    <th>MONITOR</th>      </tr>
        <tr>            <td>9</th>      <td>A</td>    <td>Neha Taneja</td>       </tr>
        <tr>            <td>9</td>      <td>B</td>    <td>Asif Siddiqui</td>     </tr>
        <tr>            <td>10</td>     <td>A</td>    <td>Jagpreet Kaur</td>     </tr>
        <tr>            <td>10</td>     <td>B</td>    <td>Ajay Verma</td>        </tr>
        </table>

</table>
        </body>
</html>
```

Figure 15a: Code to create a table using 'colspan' attributes



Class Monitors		
CLASS	SECTION	MONITOR
9	A	Neha Taneja
9	B	Asif Siddiqui
10	A	Jagpreet Kaur
10	B	Ajay Verma

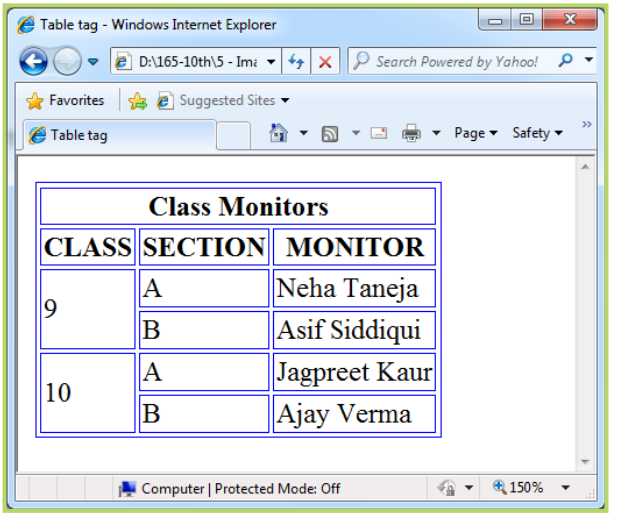
Figure 15b: Output of the code using 'colspan' attributes

- **Rowspan:** This attribute is to make a cell span multiple rows. It takes numeric value as its argument (figure 16a and 16b).

  Syntax: <table rowspan="2">.....</table>

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <table border="1" bordercolor="blue">
        <tr><th colspan="3">Class Monitors</th></tr>
        <tr>
                <th>CLASS</th>
                <th>SECTION</th>
                <th>MONITOR</th>
        </tr>
        <tr>
                <td rowspan="2">9</td>
                <td>A</td>
                <td>Neha Taneja</td>
        </tr>
        <tr>
                <td>B</td>
                <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td rowspan="2">10</td>
                <td>A</td>
                <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>B</td>
                <td>Ajay Verma</td>
        </tr>
        </table>
        </body>
</html>
```

Figure 16a: Code to create a table using 'rowspan' attributes



Class Monitors		
CLASS	SECTION	MONITOR
9	A	Neha Taneja
	B	Asif Siddiqui
10	A	Jagpreet Kaur
	B	Ajay Verma

Figure 16b: Output of the code using 'rowspan' attributes

Attributes of <td> tag

As we know that <TD> tag is used to specify the table data. The <td> tag defines a standard cell in an HTML table. This tag has the various attributes to make the value of a cell more presentable and attractive. These are:

- **Align** : This attribute is used to set the position of text in a cell. It can have the value left, right, center or justify.
- **Width** : This attribute is used to specify the width of a cell (and the entire column) either in pixels or in percentage value.
- **Height** : This attribute is used to specify the height of a cell (and the entire row) either in pixels or in percentage value.
- **Bgcolor** : It is used to change the background color of each cell in a table.

17a - Notepad

File Edit Format View Help

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <table width="50%" align="center" border="1" bordercolor="blue">
        <tr height="50">
                <th colspan="3" background="red.jpg">Class Monitors</th>
        </tr>
        <tr bgcolor="lightblue">
                <th>CLASS</th>
                <th>SECTION</th>
                <th>MONITOR</th>
        </tr>
        <tr>
                <td rowspan="2">9</td>
                <td>A</td>
                <td>Neha Taneja</td>
        </tr>
        <tr>
                <td>B</td>
                <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td rowspan="2">10</td>
                <td>A</td>
                <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>B</td>
                <td>Ajay Verma</td>
        </tr>
        </table>
</body>
</html>
```

Figure 17a: Code using 'align', 'width', 'height', 'bgcolor' and 'background attributes of <td> tag

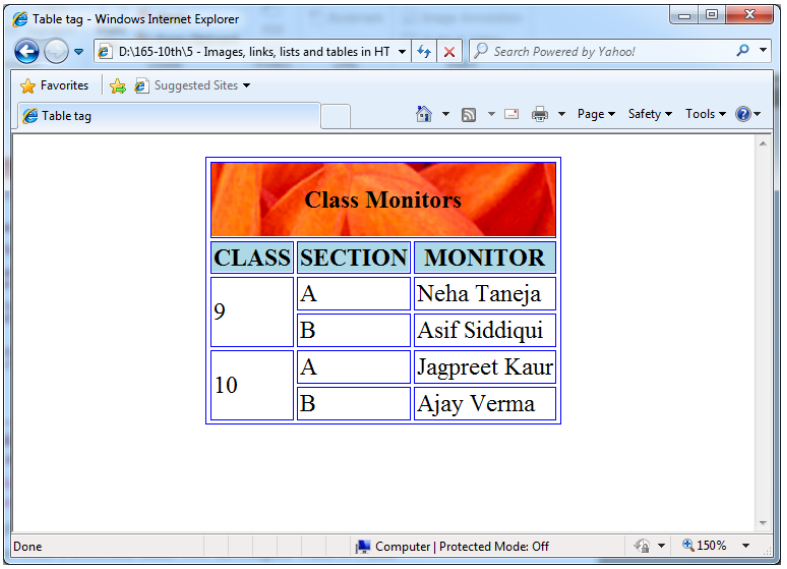


Figure 17b: Output of the code using 'align', 'width', 'height', 'bgcolor' and 'background attributes of <td> tag

Note: Tables can be divided into three portions: a header, a body, and a foot. The head and foot are rather similar to headers and footers in a word-processed document that remain the same for every page, while the body is the main content of the table.

The three elements for separating the head, body, and foot of a table are:

- **<thead> :** It is used to create a horizontal header over the complete width of a table.
- **<tbody> :** It is used to create groups of rows in a table body.
- **<tfoot> :** It indicates that a group of rows are the footer rows at the bottom of the table.

```
<html>
        <head>
                <title>Table  tag</title>
        </head>
        <body>
        <table align="center" border="1" bordercolor="blue">
        <thead bgcolor="lightgreen">
        <tr>
                        <td colspan="3">RAINBOW EDUCATION</td>
        </tr>
        </thead>
        <tfoot bgcolor="yellow">
        <tr>
                        <td colspan="3">India</td>
        </tr>
        </tfoot>
        <tbody>
        <tr>            <th colspan="3">Class Monitors</th>     </tr>
        <tr>            <th>CLASS</th>          <th>SECTION</th>        <th>MONITOR</th>        </tr>
        <tr>            <td rowspan="2">9</td>  <td>A</td>              <td>Neha Taneja</td>    </tr>
        <tr>
                <td>B</td>              <td>Asif Siddiqui</td>
        </tr>
        <tr>
                <td rowspan="2">10</td> <td>A</td>              <td>Jagpreet Kaur</td>
        </tr>
        <tr>
                <td>B</td>              <td>Ajay Verma</td>
        </tr>
        </tbody>
        </table>
</body>
</html>
```

Figure 18a: Code using <thead>, <tbody> and <tfoot> tags

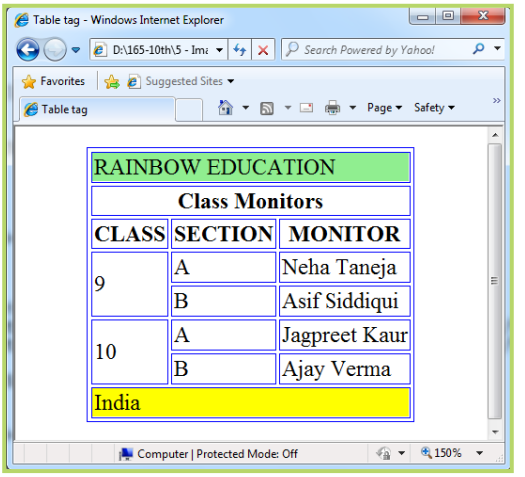


Figure 18b: Output of the code using <thead>, <tbody> and <tfoot> tags

Use of <font> tag in <td> tag

We can use <font> tag inside the <td> tag to change the color of the text for each cell.

Syntax:

```
<tr>
<td><font color= "green">Cell Value1</font></td>
        <td><font color= "blue">Cell Value2</font></td>
</tr>
<tr>
        <td><font color= "green" >Cell Value4</font></td>
        <td><font color= "blue">Cell Value5</font></td>
</tr>
```

Note: Note: <th> tag has the same attributes as of <td> tag e.g. bgcolor, background, colspan, rowspan, align and width, etc.

SENDING EMAIL FROM A BROWSER

The mailto link is a type of HTML link that activates the default mail client on the computer for sending an e-mail. The web browser requires a default e-mail client software installed on his computer in order

to activate the e-mail client. If you have Microsoft Outlook, for example as your default mail client, pressing a mailto link will open a new mail window.

The syntax of mailto link is as follows:

<A HREF="mailto:<emailID"> .... </A>

For example:

<A HREF="mailto:rashibansal@gmail.com">I Am Sending A Mail </A>

The mailto link is written in the same format as a hyperlink except you use mailto: in place

of the http:// and your e-mail address in place of the page address or URL.

Attributes

1. **mailto:** Enter the e-mail address of the sender.
2. **Cc:** Cc stands for Carbon copy. It contains the e-mail address of the recipient.
3. **Bcc:** Bee stands for Blind carbon copy.Its value is the e-mail address of the recipient which are not visible to the Cc recipients.
4. **Subject :** Its value is the subject of e-mail.
5. **Body :** Its value is the body of the e-mail.

Here, ? is the first parameter delimiter and & is the other parameters delimiter.

Tip: You must include the </A> code at the end of the line in order for the mailto link to work. There is NO space between the mailto: and the e-mail address.

Example 1:

```
<HTML>
<BODY>
<TITLE> MAILTO LINK </TITLE>
<P>
SENDING AN EMAIL:
<A HREF="mailto:payalgupta.ncr@gmail.com">Send Mail to Payal From Rashi</A>
</P>
</BODY>
</HTML>
```

Figure 19: Webpage that appears on executing Example 1

After clicking on the link, the following page appears.

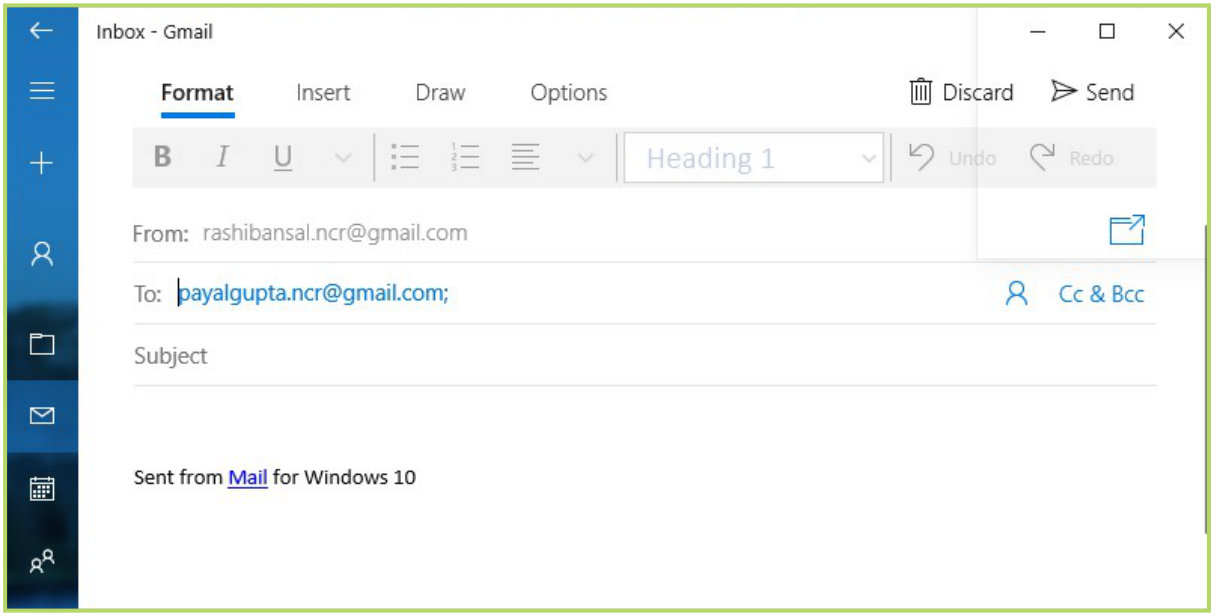


Figure 20: Web page that appears on the clicking on the link

HTML FORMS

Forms are one of the most powerful parts of a web page. So far we have studied about the

usual HTML commands like <HTML>, <HEAD> and <BODY>.We also learnt how to create tables and link the web pages. But we must have noticed that if we view our document in a web browser then the document will be seen as it is. That is, no change can be made there, neither a text can be entered nor any choice can be made in the document on the browser directly. To do so, a tag is available called as <FORM> tag.

So, in reality, HTML Forms are elements responsible for adding interactivity to web documents.

Forms can be used to add to your web pages a guest book, order forms, surveys, get feedback, etc. A form allows you to gather information from a visitor or customer for immediate or for later use. The role of Forms is to gather different kinds of user input, i.e. fields to type in text, menus to select items from, radio buttons to choose items. The web browser accepts this information, and sends it directly to a web server, where a customized program is invoked to handle the form information. These programs then manipulate the information, store data and send a feedback page to the viewer.

Thus, when the form is displayed in a web browser, the user can make a choice and some

text can be entered using the interface elements. This form made can finally be submitted to a destination point whenever required.

The basic construction of an HTML Form includes:

The beginning and ending <FORM> tag.

The actual form elements where the visitor enters the information.

The SUBMIT or RESET buttons that sends all the collected information to the server or

clears the form information respectively.

<FORM> TAG

The <FORM> tag tells the browser where a form starts and </FORM> denotes where the form ends. A <FORM> tag is thus a container element. Everything contained between these opening and closing tags is a part of the form.

Syntax:

```
<HTML>
        <HEAD>
                <TITLE> My Page </TITLE>
        </HEAD>
                <BODY>
                        <! - HTML code - >
                                <FORM>
                                        <!-Form elements and HTML -- >
                                </FORM>
                                        <! HTML code - - >
                </BODY>
</HTML>
```

It is possible to add all kinds of HTML tags between the <FORM> and </FORM> tags. This means that a form can easily include a table or an image along with the actual elements. As discussed above, Forms do not actually process information. For something to be done with the information, it must be sent somewhere. The form tag then must specify where the information is to be sent and also how it is to be sent. This information is supplied using the ACTION and METHOD attributes respectively. The ACTION attribute specifies where the information will be sent for processing. Information processing destinations can be CGI programs, JavaScript functions or an email address.

Rules to generate a form

A form may contain markup tags to mark up your text. A form cannot be nested. That is, it is not possible to have a form inside a form.

Attributes of <FORM> Tag

1. **NAME="Form Name":** It specifies the name of the Form. But this name will not be displayed on the Form. As we can have more than one FORM tags in an HTML document, so to differentiate one Form from another, a name is required to be given. Name attribute is optional if only one <FORM> tag is used.
2. **ENCTYPE="PLAIN/TEXT":** It specifies how the data is sent to the destination. It encrypts the data and sends it as it is to the destination place.
3. **METHOD="POST/GET":** This attribute is required when data is sent/transferred to some other user or to some other website.

   Some other features of GET requests are:

   - GET requests can be cached.
   - GET request remains in the browser history.
   - GET requests can be bookmarked.
   - GET requests should never be used when dealing with sensitive data.
   - GET requests have length restrictions. Get requests should be used only to retrieve data.

   Some features of POST requests are:

   - POST requests are never cached.
   - POST requests do not remain in the browser history.
   - POST requests cannot be book marked.

- POST requests have no restrictions on data length.

4. **ACTION="MAILTO:URL":** This attribute is required to give the destination address of the user to whom the FORM is required to be mailed. If you see the above attribute carefully, it says "MAILTO' meaning MAIL TO the specified user. Suppose the address of the user is ABC@hotmail.com then the above attribute would be written as:

   ACTION="MAILTO:XYZ@gmail.com''

   Between the <FORM> and </FORM> tags are the tags that create the different interface elements. These elements are created using any of the following tags:

   <INPUT> : For creating buttons, checkboxes, single line textbox, etc.

   <SELECT> : For creating drop-down list and menu boxes.

   <TEXTAREA> : For creating multi-line text areas of input.

<INPUT> TAG

This tag is required when the user has to give some input/data. This tag is always used within the FORM tag. Thus, INPUT tag defines a FORM element which can receive user input. The TYPE attribute determines the specific sort of FORM element to be created i.e. this attribute specifies the type of input we want from the user. It can be used to create the following type of interface elements:

a. BUTTON
b. CHECKBOX
c. RADIO
d. TEXT
e. SUBMIT and RESET

a. **<INPUT TYPE="BUTTON">:** This will place a button on an HTML form.

   Attributes:

   1. **NAME="BUTTON NAME":** It specifies the name of the button. The name does not appear in the FORM. It is required for the identification/differentiations as there can be more than one button in a single FORM.

      VALUE="BUTTON TEXT": Specifies the text to be displayed in the button.

      Example 2:

```
<HTML>
<HEAD>
<TITLE>Input tag example</TITLE>
</HEAD>
<BODY>
<FORM>
<P>This is the first button  : <INPUT TYPE="Button" VALUE=" OPEN" NAME="Buttonl"></P>
<P>This is the second button : <INPUT TYPE="Button" VALUE="CLOSE" NAME="Button2"></P>
<P>This is the third button  : <INPUT TYPE="Button" VALUE=" QUIT" NAME="Button3"></P>
</FORM>
</BODY>
</HTML>
```

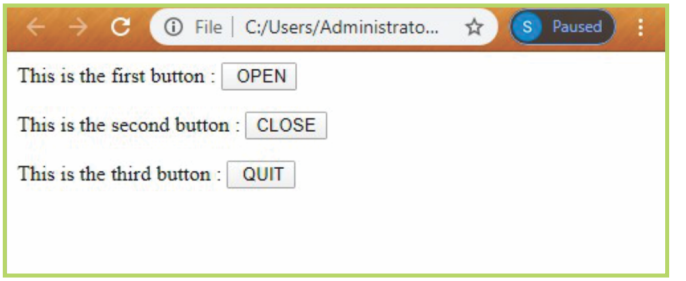


Figure 21: Webpage that appears on executing Example 2

b. **<INPUT TYPE="CHECKBOX">:** Checkboxes are used when the visitor can select multiple options from a set of alternatives. There can be more than one checkboxes from which the user can select one or more options. Note, that every checkbox has a unique name. Adding the option CHECKED to a checkbox will make that checkbox highlight when the page loads.

Attributes:

1. **NAME="NAME":** It specifies the name of the INPUT element. This attribute is required to differentiate between checkboxes. The name is not displayed on the form.
2. **CHECKED:** It indicates that the checkbox is displayed with a tick mark to tell that it is selected. This attribute is optional.
3. **VALUE="CHECKBOX VALUE":** It specifies the value to be returned to the server if the checkbox is selected when the form is sent to the destination. The default value of this attribute is ON. But different value can be specified. Only the selected checkbox value is sent. This attribute is optional.

Example 3:

```
<HTML>
<HEAD>
<TITLE>Checkbox example</TITLE>
</HEAD>
<BODY>
<Hl>Enter Your Choice</Hl>
<FORM>
<H2>Food Menu Items</H2>
<INPUT TYPE="CHECKBOX">Pao Bhaji<BR>
<INPUT TYPE="CHECKBOX">Dosa Sambhar<BR>
<INPUT TYPE="CHECKBOX">Uttapam<BR>
<INPUT TYPE="CHECKBOX">Cholle Bhature<BR>
<INPUT TYPE="CHECKBOX">Idli Sambhar<BR>
<BR>
<INPUT TYPE="SUBMIT" VALUE="Submit">
</FORM>
</BODY>
</HTML>
```

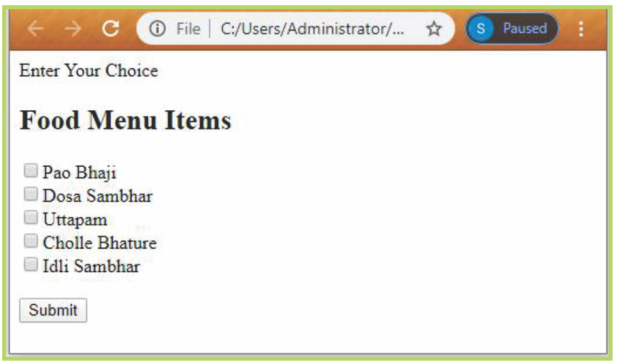


Figure 22: Webpage that appears on executing Example 3

c. **<INPUT TYPE="RADIO">:** This element is used to generate a radio button. Radio buttons are used when the visitor can select one - and just one - option from a set of alternatives. The TYPE = "RADIO" specifies a set of controls that are linked so that only one radio button among each set is selected at a time; if the user clicks one radio button, the others in the set are automatically deselected.

Attributes:

1. **NAME="NAME":** It specifies the name of the INPUT element.
2. **CHECKED:** It indicates that the radio button is selected, which can be deselected when another choice is made. At one time, only one radio button can have a default value as checked, if they are all a part of the same group. This attribute is optional.

3. **VALUE="BUTTON VALUE":** It specifies the value to be returned to the server when the radio button is selected, when the form is sent to the destination place. The default value is ON, but different value can be specified. Only the selected radio button value is sent. This attribute is optional.

Example 4:

```
<HTML>
<HEAD>
<TITLE>Radio Button example</TITLE>
</HEAD>
<BODY>
<Hl><U><B>SELECT THE GENDER</B></U></Hl>
<BR><BR>
<FORM>
<B>
<INPUT TYPE="RADIO" NAME="Rl"> MALE
<BR>
<INPUT TYPE="RADIO" NAME="R2"> FEMALE
<BR>
<INPUT TYPE="RADIO" NAME="R3"> TRANSGENDER
<BR><BR>
<INPUT TYPE="SUBMIT" VALUE="Submit">
</B>
</FORM>
</BODY>
</HTML>
```

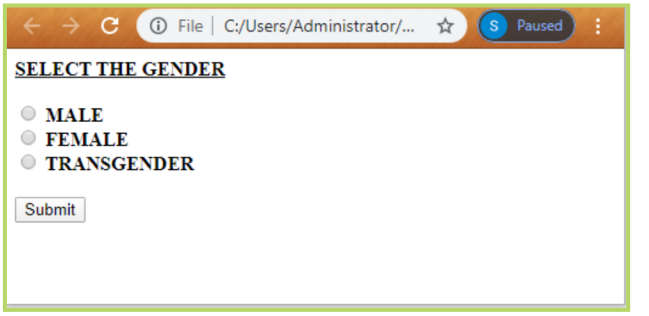


Figure 23: Webpage that appears on executing Example 4

d. **< INPUT TYPE ="TEXT">:** It is a single line text input field in which the user can enter text.

<INPUT TYPE = "PASSWORD">: It creates a password field where characters typed are displayed as *.

Syntax:

```
<INPUT TYPE="TEXT"
NAME="NAME"
VALUE="TEXT"
SIZE="LENGTH CHARS"
MAXLENGTH="MAX CHARS"
ALIGN="TEXT">
```

Attributes:

1. **NAME="NAME":** It specifies the name of the INPUT element. The name is required to differentiate one text element with another. This name is not displayed on the form.
2. **MAXLENGTH="Max Chars":** It specifies the maximum numbers of characters a text box can accept.
3. **SIZE="Length Chars":** It specifies the length of the input field, in characters.

4. **ALUE="Text":** It specifies the initial value of the text element.
5. **ALIGN="Text":** It specifies the default text to be displayed in the box. It specifies how the text in the field is aligned.

Example 5:

```
<HTML>
<HEAD>
<TITLE>Text Input example</TITLE>
</HEAD>
<BODY BGCOLOR="Aqua">
<H1>Subscribe to GlobalWorld</H1>
<B><FONT SIZE="4">Enter the first name and last name and click on the Send button.</FONT></B>
<FORM METHOD="Send" ACTION="http: / /www. GlobalWorld. com\subscribe">
<BR>
<BR>
First Name: <INPUT TYPE="Text" NAME="first" SIZE="25" MAXLENGTH="25">
<BR>
<BR>
Last Name: <INPUT TYPE="Text" NAME="last" SIZE="25" MAXLENGTH="25">
<BR>
<BR>
<INPUT TYPE="SUBMIT" VALUE="SEND">
</FORM>
</BODY>
</HTML>
```

Figure 24: Webpage that appears on executing Example 5

e. **Command button** performs some action when the user clicks on it. Two types of command buttons are: <INPUT TYPE="SUBMIT"> and <INPUT TYPE="RESET">: When we are required to send the form to its destination place (which means that the ACTION specified for FORM is invoked) then this element is used. The TYPE="SUBMIT" creates a submit button on the form and the TYPE="RESET" creates a reset button. The Submit button tells the web browser to gather up all the selections, values, and entered text in the form elements and dispatch it off to the destination defined in the ACTION part of the <FORM> tag. The Reset button restores the form to its default state, how it looked when the viewer first entered the page.

Attributes:

1. **NAME="Name":** It specifies the name of the input elements. The name is not displayed on the Form.

Example 6:

```
<HTML>
<HEAD>
<TITLE>Submit Reset example</TITLE>
</HEAD>
```

```
<BODY BGCOLOR="Yellow">
<H2> SUBMIT THE FORM</H2>
<FORM METHOD="POST" ACTION="mailto:calss@gmail.com">
<P>FIRST NAME: <INPUT TYPE="TEXT" NAME="T1" SIZE="20"></P>
<P>LAST NAME: <INPUT TYPE="TEXT" NAME="T2" SIZE="20"></P>
<P>ACTIVITIES YOU KNOW:
<BR><BR>
<INPUT TYPE="CHECKBOX" NAME="C1">Cooking
<INPUT TYPE="CHECKBOX" NAME="C2">Driving
<INPUT TYPE="CHECKBOX" NAME="C3">Playing
<P>GENDER:
<BR>
Female<INPUT TYPE="RADIO" NAME="T2">
Male<INPUT TYPE="RADIO" NAME="T3">
Transgender<INPUT TYPE="RADIO" NAME="T4 ">
<BR><BR>
<INPUT TYPE="SUBMIT" NAME="S" VALUE="SUBMIT">
</FORM>
</BODY>
</HTML>
```

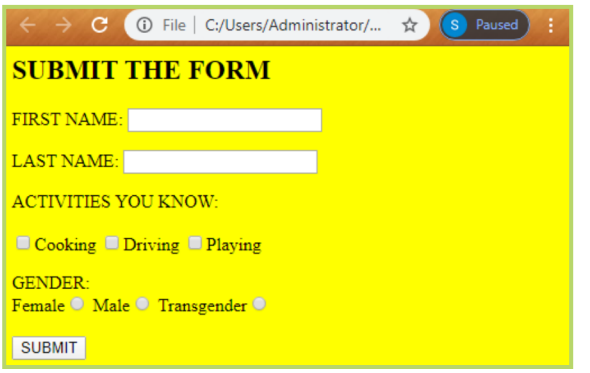


Figure 25: Webpage that appears on executing Example 6

<SELECT> TAG

The <SELECT> tag defines a selection list on an HTML FORM. A selection list displays a list of options from which the user can select an item. From a selection list, one or more than one item can be selected at a time.

The <SELECT> tag is used to construct drop-down list boxes (also called drop-down menus) and scrolling list boxes (also called scrolling menus). Drop-down menus are probably the most flexible objects that can be added to a form. Drop-down menus can serve the same purpose as radio buttons (multiple selections allowed), depending on the options specified. The advantage of a drop-down menu, compared to radio buttons or check boxes, is that it takes up less space. But that is also a disadvantage, because people cannot see all options in the menu right away. With the size setting, the menu can be customized to show more than just one option at a time, but at the cost of space occupied.

Attributes of <SELECT> Tag:

1. **NAME="Select Name":** It specifies the name of the SELECT element. The name is not displayed on the form. Name attribute is required to differentiate one select element from another, if specified in the same form.
2. **MULTIPLE:** It specifies that multiple items can be selected. If this attribute is omitted, only one item can be selected from the list. If multiple selection is enabled, the user needs to hold down the "control key" to select the additional items.
3. **SIZE="ListLength":** It specifies the number of options visible when the form is displayed. If the list contains more options than specified by the size attribute, the list is displayed with scrollbars.

<OPTION> Tag

The <OPTION> tag specifies an option in a selection list. <OPTION> tag is used inside a SELECTION tag.

Attribute of <OPTION> Tag:

SELECTED: It specifies that this option is selected by default.

Example 7:

```
<HTML>
<HEAD>
<TITLE>Selection List example</TITLE>
</HEAD>
<BODY>
<FORM NAME="F">
<P><H3>SELECT THE NAME OF THE COUNTRY THAT YOU HAVE VISITED: </H3></P>
<SELECT>
<OPTION SELECTED> India
<OPTION> Nepal
<OPTION> Russia
<OPTION> Canada
<OPTION> Japan
<OPTION> China
<OPTION> Sri Lanka
<OPTION> Bangladesh
<OPTION> Bhutan
</SELECT>
</FORM>
</BODY>
</HTML>
```

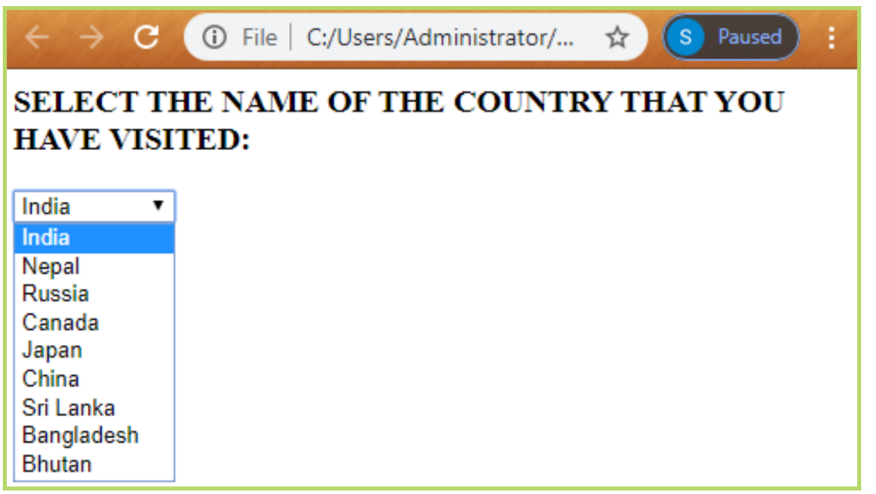


Figure 26: Webpage that appears on executing Example 7

Example 8 (Multiple Selection):

```
<HTML>
<HEAD>
<TITLE>Multiple Selection List example</TITLE>
</HEAD>
<BODY>
<FORM NAME="F">
<H2>Select the colors you like:</H2>
<SELECT NAME="Colors" Multiple>
<OPTION SELECTED> Red
<OPTION> Green
```

```
<OPTION> Blue
<OPTION SELECTED> Purple
<OPTION> Black
<OPTION> Saffron
<OPTION SELECTED> White
</SELECT>
</FORM>
</BODY>
</HTML>
```

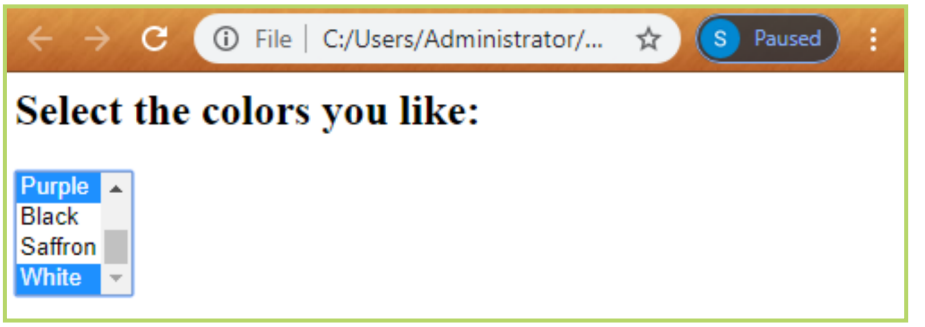


Figure 27: Webpage that appears on executing Example 8

<TEXTAREA> TAG

Text areas are text fields that can span several lines. They are used for accepting multi-line input from the form user. Unlike most other form fields, text areas are not defined with an <INPUT> tag. Instead you enter a <TEXTAREA> tag where you want the text area to start and a closing </TEXTAREA> tag where you want the area to end. Everything written between these tags will be presented in the text area box. Scrollbars are activated automatically, if the next input exceeds the visual number of columns or rows specified.

Attributes of <TEXTAREA> Tag:

1. **COLS="Columns":** It defines the width (number of characters per line), the text area can accommodate without scrolling.
2. **ROWS="Rows":** It defines the number of lines (number of rows), the text can accommodate without scrolling.
3. **NAME="Name":** It specifies the name of the text area element. The name is not displayed on the form.

Example 9:

```
<HTML>
<HEAD>
<TITLE>Textarea example</TITLE>
</HEAD>
<BODY>
<H2> This is an example of TEXTAREA</H2>
<FORM NAME="F1">
<TEXTAREA NAME="ITEM" COLS="30" ROWS="10">
This is the first line
This is the second line
This is the third line
This is the fourth line
This is the fifth line
and so on ..... .
</TEXTAREA>
</FORM>
</BODY>
</HTML>
```

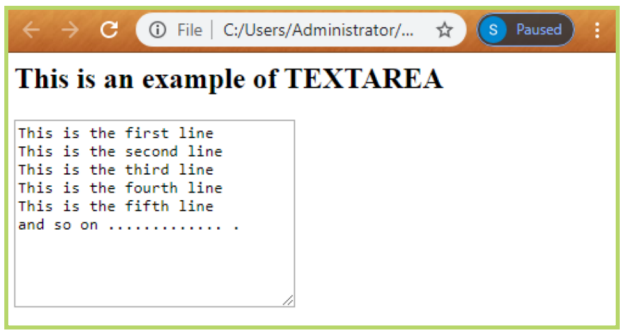


Figure 28: Webpage that appears on executing Example 9

EMBEDDING AN AUDIO IN A WEB PAGE

To include an audio file in a web page, <AUDIO> tag is used. In HTML, <AUDIO> tag is the standard element through which an audio can be embedded in a web page.

Attribute of <AUDIO> tag

The attribute of <AUDIO> tag is CONTROLS. This attribute takes Boolean value(True or False), thus the user that have to include a value to CONTROLS attribute. This attribute is used to add audio controls like play, pause and volume. If this attribute is omitted, then the browser will not display the default controls.

The <SOURCE> tag

The <SOURCE> tag specifies an alternative audio file which the browser may choose from. The browser will choose the audio file according to the first recognised format.

Attributes of <SOURCE> tag

- **SRC:** The value of this attribute is the URL of the audio to be embedded.
- **TYPE:** The value of this attribute is the type of file which the browser is going to embed.

Example 10:

```
<HTML>
<HEAD>
<TITLE>Embedding audio file</TITLE>
</HEAD>
<BODY>
<H2> Embedding an audio file</H2>
<AUDIO CONTROLS>
<SOURCE SRC="file1.mp3" TYPE="audio/mp3">
<SOURCE SRC="file2.wav" TYPE="audio/wav">
<SOURCE SRC="file3.ogg" TYPE="audio/ogg">
File Format Not supported
</AUDIO>
<BR><BR>
<H3> This is an audio file embedded into a web page.</H3>
</BODY>
</HTML>
```

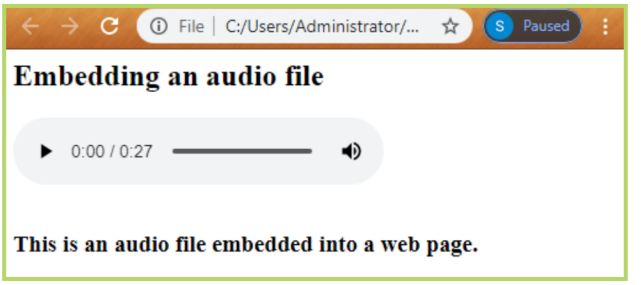


Figure 29: Webpage that appears on executing Example 10

In the above example, there are three alternatives for the browser in order to embed the audio file. The audio file with different formats like mp3, ogg and wav are given. The browser will select the audio to embed of that file format which it recognises first.

EMBEDDING A VIDEO IN A WEB PAGE

To include a video file in a web page, <VIDEO> tag is used. In HTML, <VIDEO> tag is the standard element through which a video can be embedded in a web page.

Attribute of <VIDEO> tag

- **CONTROLS:** This attribute takes Boolean value(True or False), thus the user that have to include a value to CONTROLS attribute. This attribute is used to add video controls like play, pause and volume. If this attribute is omitted, then the browser will not display the default controls.

- **WIDTH:** This attribute takes numeric value and displays the video within the given width.
- **HEIGHT:** This attribute takes numeric value and displays the video within the given height. Both HEIGHT and WIDTH attributes controls the screen area it will cover.

The <SOURCE> tag

The <SOURCE> tag specifies an alternative video file which the browser may choose from. The browser will choose the video file according to the first recognised format.

Attributes of <SOURCE> tag

- **SRC:** The value of this attribute is the URL of the video to be embedded.
- **TYPE:** The value of this attribute is the type of file which the browser is going to embed.
- **AUTOPLAY:** This is a Boolean attribute and make that the video is auto played as the web page gets opened.

Example 11:

```
<HTML>
<HEAD>
<TITLE>Embedding a video file</TITLE>
</HEAD>
<BODY>
<H2> Embedding a video file</H2>
<VIDEO WIDTH="500" HEIGHT="400" CONTROLS>
<SOURCE SRC="file1.flv" TYPE="video/flv">
<SOURCE SRC="file2.mkv" TYPE="video/mkv">
<SOURCE SRC="file3.mp4" TYPE="video/mp4">
</VIDEO>
<H3>This is an embedded video file in the web page</H3>
</BODY>
</HTML>
```

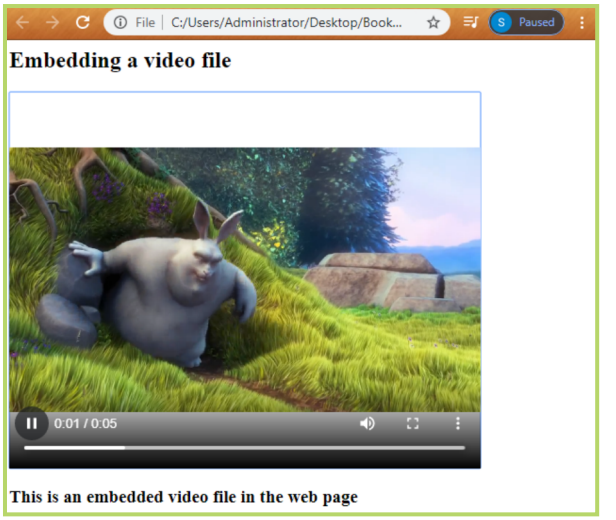


Figure 30: Webpage that appears on executing Example 11

In the above example, there are three alternatives for the browser in order to embed the video file. The video file with different formats like mp4, flv and mkv are given. The browser will select the video of that file format which it recognises first.

Glossary

Source (Src)	:	This attribute is used to set the path of image.
Hyperlink	:	This tag used to connect one page with another.
Ordered list	:	A numbered list.
Unordered list	:	An indented list with a bullet symbol in front of each list item.
Marquee	:	This tag displays the text in motion.
Table	:	It is a combination of row and column. It is used to insert data.
Cell	:	Refers to an intersection of a row and a column.
Cellpadding	:	Refers to the amount of space in pixels between the edges of a cell and its content.
Cellspacing	:	Refers to the amount of space in pixels between the borders of a cell.

You have learned

- ✓ Image tag <img> is used to insert image on the web page.
- ✓ The hyperlink <a> tag is used to link one page with another.
- ✓ Href attribute of hyperlink tag is used to store the address of the hyperlink file.
- ✓ List tags <ol> and <ul> refers to ordered list and unordered list respectively.
- ✓ Ordered list <ol> tag is used to create ordered lists on web pages.
- ✓ Unordered list <ul> tag is used to create unordered lists on web pages.
- ✓ Marquee tag is used to show the object in motion.
- ✓ The <table> tag is used to define the table.
- ✓ <tr> stands from table row, <th> stands for table head, <td> stands for table column.
- ✓ <th> tag creates a table heading in the table.
- ✓ Colspan attribute is used to merge multiple columns whereas Rowspan attribute is used to merge multiple rows.
- ✓ mailto: link is used to send email.
- ✓ HTML forms are used to capture data from the user in a web page.
- ✓ audio tag is used to embed audio in the web page.
- ✓ video tag is used to embed video in a web page.

Solved Questions

1. Define <img> tag with example.

Ans. The <img> tag is used to insert images in the web page. It has many attributes. Some of the attributes of image <img> tag are given below.

Syntax: <img src="D:\images\logo.jpg" alt="Company Logo"width="400" height="500">

2. Define anchor <a>(hyperlink) tag with syntax.

Ans. Hyperlink is most useful and widely used tag in

HMTL. Hyperlink is used to connect one page with another. You can connect different web pages with the help of the links to make a complete website.

Syntax:...

3. How many types of hyperlinks are there in HTML?

Ans. There are two types of hyperlinks. These are internal hyperlink and external hyperlinks. Internal linking is used to link a portion of same document and external linking is used to link the one document with another documents.

4. How many types of list are there in HTML?

Ans. When you want to display data in the form of points or list, we should use list tag. To create a list in HTML we use <LI> tag. LI Tag is an empty tag. HTML supports three types of lists. These are,

(a) Ordered Lists (b) Unordered Lists

(c) Nested Lists

5. Define <marquee> tag.

Ans. Marquee tag is used to displays the text in motion. We can place the moving text on pages using <marquee> tag. It can be inserted anywhere in the webpage. Whatever the text or table or object we put between the marquee tags will be movable.

Syntax:

<marquee>.....</marquee>

6. Define table and its application in HTML.

Ans. An HTML table is an element comprised of table rows and columns, much like you'd see when working with an application such as Excel. The HTML table allows web designers to arrange data such as text, preformatted text, images, links, forms, form fields, other tables, etc. into rows and columns of cells.

7. Explain the elements of a table.

Ans. Following are the elements of the table:

- The <table> tag: It is used to insert a table in your page
- The <caption> tag: It is used to define a title for the table.
- The <tr> tag: It is used to define rows in a table.
- The <td> tag: It is used to insert cells in a table.
- The <th>tag: It is used to define current cell as table header.

8. What is the use of 'Rule' attribute? How many types of rules attributes are there?

Ans. The Rules attribute will define which lines or rules to draw between rows and columns in your table.

Syntax:

<table rules="rows">

Types of rules:

none	No rules are drawn (default value).
groups	Rules drawn between row groups and column groups.
rows	Rules are drawn between rows only.
cols	Rules are drawn between columns only.
all	Rules are drawn between all rows and columns.

9. What is the application of 'cellpadding' and 'cellspacing' attributes ?

Ans. The cellpadding and cellspacing attributes, is used to adjust the spacing between table cells. Setting the cellpadding attribute determines how much space will exist between a table cell border and the elements contained within it, whereas cellspacing determines how much space will exist between each table cell.

10. What is the use of 'rowspan' and 'colspan' attributes?

Ans. You can use the Rowspan attribute to make a cell span multiplerows. You can use the colspan attribute to make a cell span multiple columns. It takes numeric value as its argument.

11. Explain use of 'height' and 'width' tag in table.

Ans. Width: Using the width attribute in your <td> tags, you can explicitly set the width of your table data cells. This will have the effect of setting not only the width of that particular cell but will also set the width of the entire column in which that cell resides.

Height: Using the height attribute in your <td> tags, you can explicitly set the height of your table data cells. This will have the effect of setting not only the height of that particular cell but will also set the height of the entire row in which that cell resides.

Exercise-1

A. Choose the correct answer.

1. Which of the following is not the attribute of image tag?

   a) Width b) Alt

   c) Src d) Direction

2. What is the meaning of 'a' in <a> tag?

   a) Amount b) Action

   c) Assign d) None of these

3. Which of the following is an attribute of hyperlink <a> tag?

   a) Href b) Height

   c) Width d) Bgcolor

4. How many type of links are used in HTML?

   a) One b) Two

   c) Three d) Four

5. Which of the following is not the attribute of ordered list <OL> tag?

   a) Type b) Start

   c) Size d) All of these

6. Which of the following is a list type?

   a) Ordered b) Unordered

   c) Nested d) All of these

7. Which of the following is the value of type attribute in <UL> tag?

   a) Disk b) Circle

   c) Square d) All of these

8. Which of the following is not the part of the definition list tag?

   a) DL b) DC

   c) DT d) DD

9. Which of the following is a value of behavior attribute in marquee tag?

a) Alternate b) Slide

c) Scroll d) All of these

10. Which of the following data can be arranged into tables?

a) Text b) Images

c) Links d) All of these

11. Which of the following are the children of table element?

a) Caption b) Heading

c) Margin d) Name

12. Which of the following is the attribute of table tag?

a) Back b) Name

c) Title d) None of these

13. Which of the following attribute specifies in either pixels or percentage?

a) Style b) Width

c) Type d) Name

14. Colspan attribute is used to make a cell span of multiple-

a) Rows b) Columns

c) Cells d) None of these

15. _____ control is not created using type attribute of input tag.

a) List b) Radio button

c) Checkbox d) Button

16. _____ submits the details filled in the form to the web server.

a) Rest b) Submit

c) Button d) Save

17. _____ control allows to select multiple choices.

a) Radio b) Textbox

c) Checkbox d) All of these

18. Radio buttons can be grouped by giving them same value in _____ attribute of input tag.

a) Id b) Name

c) Group d) None of these

B. Answer the following questions.

1. Explain the attributes of <img> tag.
2. Explain the attributes of anchor <a> tag.

3. Define internal linking and external linking.
4. Write the names of different types of lists.
5. Write and any two attributes of marquee tag with their uses.
6. Define table of HTML.
7. Write the name of five child elements of HTML table.
8. Write the five attributes of HTML table.
9. Define table head. What are it's uses?
10. Define the 'rowspan' and 'colspan' attributes of table.
11. What is the use of HTML form?
12. What is the difference between radio button and checkbox?
13. How will you group radio buttons?
14. What is the difference between list and drop down list?

Exercise-2

A. Fill in the blanks.

1. _____ tag is used to insert image on the web page.
2. _____ tag is used to link one page with another.
3. There are two types of Hyperlinks. These are _____ and _____.
4. _____ attribute of <a> tag is defines how each link will be opened i.e, in same window or in a new window.
5. In a definition list, each item contains two or more entries.
6. A list which has list within the list is called _____ list.
7. Marquee tag is used to display the text in _____.
8. _____ behavior of a marquee is used to move the object from one side to another.
9. _____ behavior of a marquee bounce back the text back and forth between the marquee widths.
10. HTML table allows web designers to arrange data in the form of _____ and _____.
11. _____ tag is used to create a table.
12. 'Cellpadding' attribute of _____ tag adjust the spacing between the table cells.
13. Most browsers displays table headers in _____ and center-aligned.
14. _____ attribute of <table> tag make a cell span multiple rows.

B. State true or false.

1. 'Alt' attribute in Image tag is used to put alternate text besides image.
2. Hyperlink is used to connect one page with another only.

3. 'Target' attribute of hyperlink tag is used to set the position of file.
4. Internal link is used to create links within the page.
5. Nested list is used to create lists starts with one.
6. HTML table is the collection of rows and columns.
7. The HTML <table> tag is used to define the tables.
8. 'Bgcolor' attribute is used to set the background of table.
9. You can format a table using style.

C. Write the full form of the following.

a. Img: _____ b. src: _____

c. Href: _____ d. UL: _____

e. LI: _____ f. OL: _____

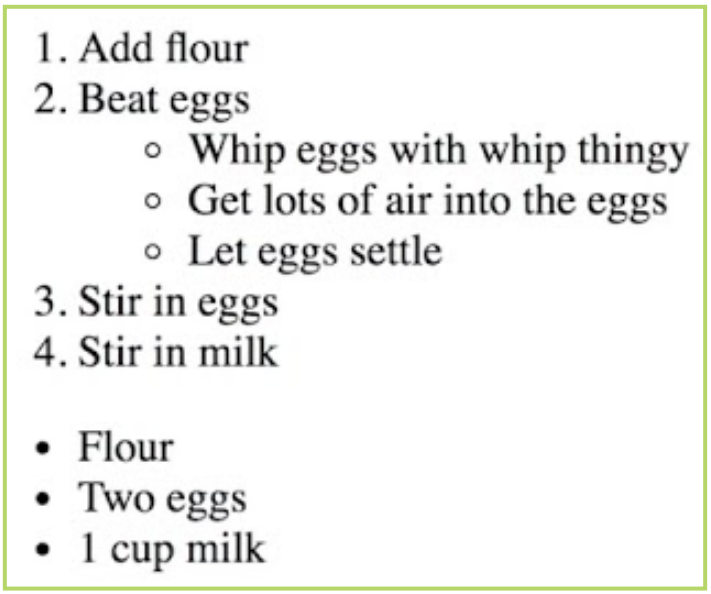
g. DL: _____ h. DD: _____

i. DT: _____ j. Alt: _____

D. Practical/ Lab Activity

1. Create an unordered list and change the style of bullets to square.
2. Create a html page according to following instruction:
   a. Text should be aligned center.
   b. Use marquee tag in direction=up, behavior=scroll and text color should be Purple.
   c. Place an image from your computer.
   d. Use ordered list with an example in the page.
3. Design an image gallery using <img> tag.uage (with Red color, Center align, Underline style)
4. Create a HTML pages as following:

5. Analyze the following webpages and try to generate the same.

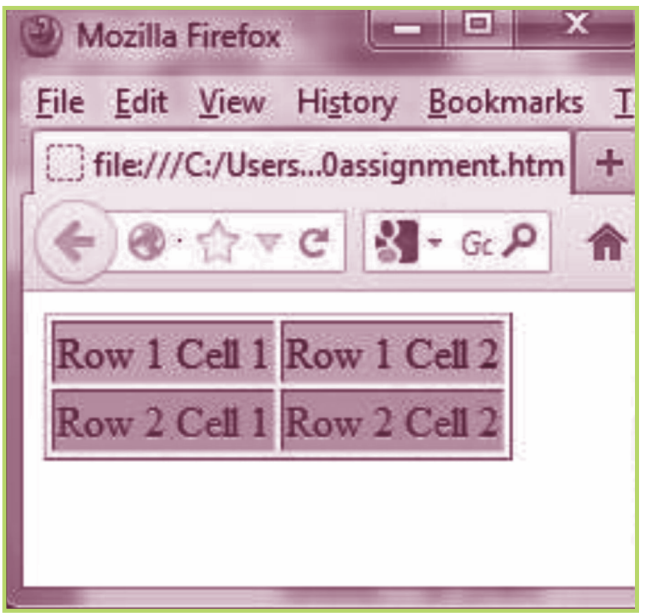


6. Create a Web page which contains the following elements in the given sequence:
   - The background of the web page in sky blue.
   - Horizontal page.
   - The title text is in bold style, font size is 18 and font color is Algerian.
   - Another horizontal row.
   - Insert an image that is center- aligned with height=200 and width=300.
7. Write the HTML code to create hyperlinks on text as well as on an image. (Take help of your teacher)
8. Type the given program code and view the output.

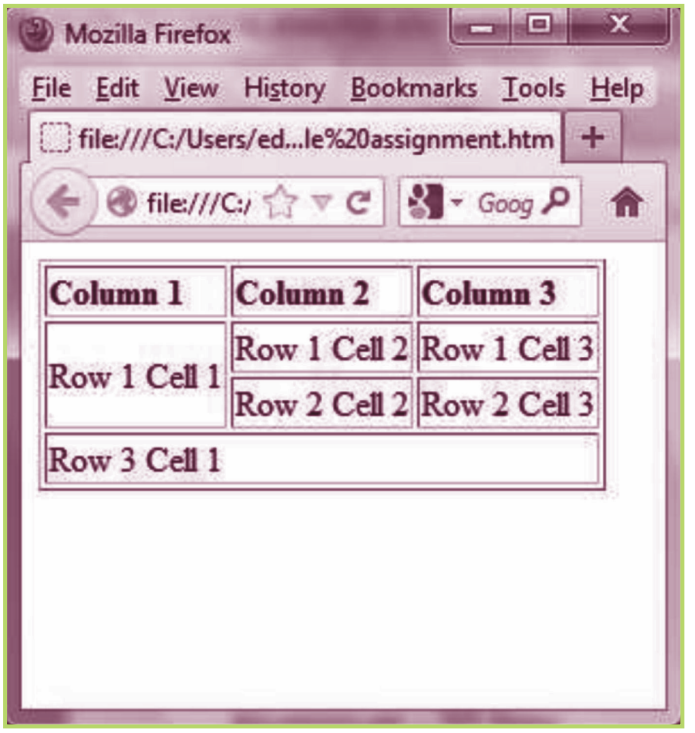
```
<html>
<body>
<table border="1" cellpadding="10" bgcolor="rgb(0,255,0)">
<tr>
<td><b>Column 1</b></td>
<td><b>Column 2</b></td>
</tr>
<tr>
<td>Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
</tr>
<tr>
```

```
<td>Row 2 Cell 1</td>
<td>Row 2 Cell 2</td>
</tr>
</table>
</body>
</html>
```

9. Write the HTML code to generate the following output:



10. Write the HTML code to generate the following output:



11. Write the HTML code to generate a web page in the format given below:

Special notes:

a) Title of the web page is "Save the earth".

b) The background of the web page is silver.

c) The font used for the heading is "Arial", font size is 6, and the color is black.

d) The subheading is in "verdana" font, font size is 4, and the color is Brown. The rest of the text is in "Verdana" font, font size is 4, and the color is black.

e) Image used in .jpg format.

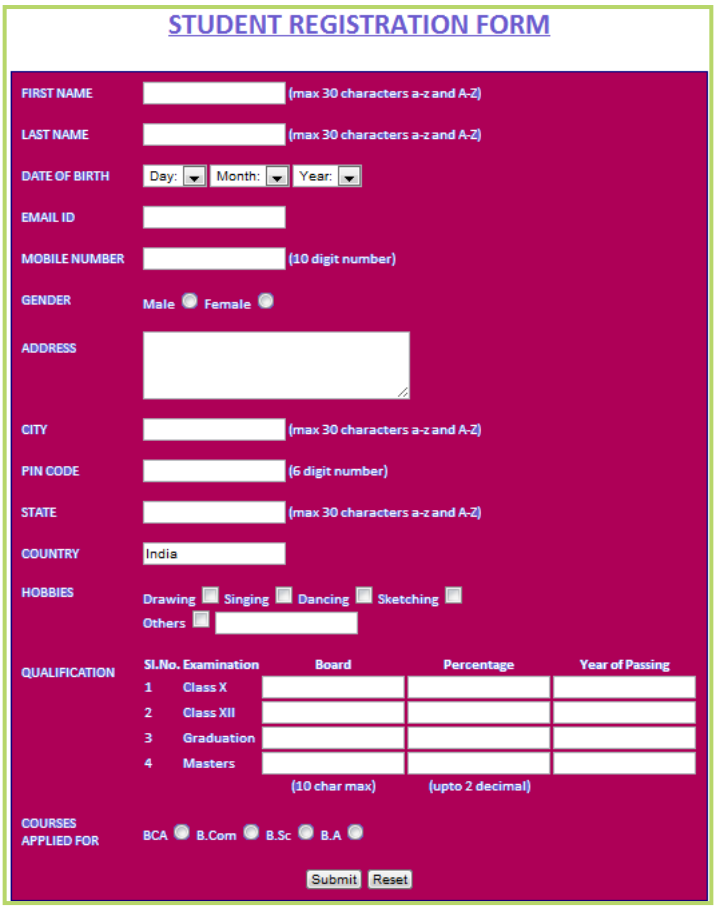
f) The links are provided in an unordered list with ordered list used in between.

g) The pages are linked as follows:

h) The categories 'controlling' and 'saving ' in the unordered list are not linked to any page.

i) The width and height of the horizontal line is 820 and 80 respectively. [C.B.S.E. 2005]

12. Write the HTML code to generate the following form:



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