Biyani Girls College
I Internal Examination Sept. 2019
Class: - BCA II
Subject: Web Designing and Multimedia (BCA 235)

MM: 40   Set: B   Time: 1 ½ Hrs.

[I]   Very short answer questions (Max 40 words).   (2 * 5 = 10)

1. What is web page?

Ans) A Web page is a document for the World Wide Web that is identified by a unique uniform resource locator (URL).A Web page can be accessed and displayed on a monitor or mobile device through a Web browser . The data found in a Web page is usually in HTML or XHTML format.

2. What is web browser?

Ans)A web browser is a software program that allows a user to locate, access, and display web pages. Common browsers include Internet Explorer from Microsoft, Firefox from Mozilla, Google Chrome, Safari from Apple, and Opera.

3. What do you mean by cell padding and cell spacing?

Ans) Cellpadding is the amount of space between the outer edges of the table cell and the content of the cell. Cellspacing is the amount of space in between the individual table cells.

4.Write down the names of the tags which are used to create frames in HTML?

Ans) The <frameset> tag defines, how to divide the window into frames. The rows attribute of <frameset> tag defines horizontal frames and cols attribute defines vertical frames. Each frame is indicated by <frame> tag and it defines which HTML document shall open into the frame.

5.What is hyperlink?

Ans)A hyperlink is an element in an HTML document that links to either another portion of the document or to another document altogether. On webpages, hyperlinks are usually colored purple or blue and are sometimes underlined.

[II]Short answer questions (Max 80 words)   (5*2=10)

1. What do you mean by ActiveX control? Explain in brief.

Ans) An ActiveX control is a component program object that can be re-used by many application programs within a computer or among computers in a network. The technology for creating ActiveX controls is part of Microsoft's overall ActiveX set of technologies, chief of which is the Component Object Model (COM). ActiveX controls can be downloaded as small programs or animations for Web pages, but they can also be used for any commonly-needed task by an application program in the latest Windows and Macintosh environments. In general, ActiveX controls replace the earlier OCX (Object Linking and Embedding custom controls). An ActiveX control is roughly equivalent in concept and implementation to the Java applet.

2.Explain the attributes of <table> tag in HTML.
Ans)The HTML <table> tag is used for defining a table. The table tag contains other tags that define the structure of the table. Specific Attributes

The HTML <table> tag also supports the following additional attributes −

Attribute	Value	Description
abbr	abbreviated_text	*Deprecated* − Specifies an abbreviated version of the content in a cell.
align	right left center justify char	*Deprecated* − Visual alignment.
bgcolor	rgb(x,x,x) #hexcode colorname	*Deprecated* − Specifies the background color of the table.
border	pixels	*Deprecated* − Specifies the border width. A value of "0" means no border.
cellpadding	pixels or %	*Deprecated* − Specifies the space between the cell borders and their contents.

cellspacing	pixels or %	*Deprecated* − Specifies the space between cells.
frame	void above below hsides lhs rhs vsides box border	*Deprecated* − Used in conjunction with the border attribute, specifies which side of the frame that makes up the border surrounding the table is displayed.
rules	none groups rows cols all	*Deprecated* − Used in conjunction with the border attribute, specifies which rules appear between the cells of the table.
summary	text	*Deprecated* − Specifies the summary of the content.
width	pixels or %	*Deprecated* − Specifies the width of the table.

[III]Long answer questions (Max 150 words).
1. Explain different elements of web in details?
Ans) you are a business owner, your website is absolutely one of the most important tools you have in your arsenal to get more - and better - clients and customers.Here are 10 qualities that a great website will need. Whether or not you end up retaining makespace! as your Louisville based web designers, you should find them helpful:
1 Navigation
The website design should be easy to navigate and the menu items should easily accessible from any page. The viewer should always know exactly where they are on the website and have easy access to where they would like to be. A site map is a great idea and will be used if available. This sounds elementary but most websites could be improved in this area. Remember, there is a fine line between an interactive menu and an annoying one, so functionality should be the idea.
2 Visual Design

People are visually oriented creatures, and utilizing great graphics is a good way to make your website more appealing. Your website has about 1/10th of a second to impress your visitor - and potential customer - and let them know that your website - and business (by proxy) - is trustworthy and professional. However, it's important not to go overboard with too much. Scrolling text, animation, and flash intros should be used sparingly in your web design and only to emphasize a point for maximum effect.

3 Content

This is the backbone of your website. Not only does your content play a major role in your search engine placement, it is the reason most visitors are seeking from your website in the first place. Your website text should be informative, easy to read, and concise. Well thought out web content and copy will do more than anything else to make your website design engaging, effective and popular.

4 Web Friendly

No matter how informative, beautiful, and easy to use your website design is, it's useless unless it's web-friendly. It is important that your web designers know the keys to making your website work on all the major browsers, and that they utilize meta tags, alt tags, are fully versed in SEO (Search Engine Optimization). Many factors effect your search engine placement and visual appearance of your site, so make sure your web designers know their stuff.

5 Interaction

A truly effective website design engages your visitors immediately and continues to hold their attention through EVERY page, as well as influences them to contact you. This is called 'conversion', and is probably your website's ultimate goal. Again, there is a fine line between 'interaction' and 'annoyance', so the level of interac- tion should never outweigh the benefit.

6 Information Accessibility

Not all visitors to your website are interested in, or have the time to peruse the entire site. They may need to access only a phone number or address, or just a certain bit of info. For this reason it's important to place key information in plain site, in an area that's easily accessible. We've all had the experience of not being able to locate some needed information on a website, and the result is always a frustrated visitor. The experience is annoying at best, and a disgruntled visitor won't stay on your site very long and is unlikely not to return, much less do business with you.

7 Intuitiveness

A great website anticipates what your visitor is thinking and caters directly to their needs, and has elements arranged in a way that makes sense. If a visitor is searching for one of your products or services on a search engine or directory where your site is listed, it's important that your website have a landing page that is directly relevant to what they searched for rather than forcing them to filter through all of your information. Remember, the shortest distance between two points is a straight line.

8 Branding

Your website should be a direct reflection of your business and your brand. Your visitor should immediately make a visual connection between your logo, print material, and brick-and-mortar location. A website that does this not only contributes to the memorability of your branding, but adds a level of credibility and enhanced image of that of your overall business.

9 Turnaround Time

The number one complaint of website design customers is the time it takes to get the site up and running. Unfortunately, a firm that takes unusually long to complete your website is par for the course. The longer it takes to complete the website, the more business - and value - you lose. A website that isn't on the web isn't and working properly isn't going to bring you any business!

10 Conversion

Your website can be the most important client generator your business can have, and must place the primary emphasis on bringing in new clients and making additional services available to existing clients through increased awareness of all the services you offer. Providing them with the tools they need to do business with you in an easy and enjoyable way will increase your website conversion and bring you the kind of success you seek.

2. Define HTML forms.Explain Different Types of Button used in forms.Write note on GET and POST method.

Ans) An HTML form is a section of a document containing normal content, markup, special elements called controls (checkboxes, radio buttons, menus, etc.), and labels on those controls. Users generally "complete" a form by modifying its controls (entering text, selecting menu items, etc.), before submitting the form to an agent for processing (e.g., to a Web server, to a mail server, etc.)

Here's a simple form that includes labels, radio buttons, and push buttons (reset the form or submit it):

```
 <FORM action="http://somesite.com/prog/adduser" method="post">
   <P>
   <LABEL for="firstname">First name: </LABEL>              <INPUT type="text" id="firstname"><BR>
   <LABEL for="lastname">Last name: </LABEL>
        <INPUT type="text" id="lastname"><BR>
   <LABEL for="email">email: </LABEL>
        <INPUT type="text" id="email"><BR>
   <INPUT type="radio" name="sex" value="Male"> Male<BR>
   <INPUT type="radio" name="sex" value="Female"> Female<BR>
   <INPUT type="submit" value="Send"> <INPUT type="reset">
```

</P>
</FORM>

17.2.1 Control types

HTML defines the following control types:

buttons

Authors may create three types of buttons:

•submit buttons: When activated, a submit button submits a form. A form may contain more than one submit button.

•reset buttons: When activated, a reset button resets all controls to their initial values.

•push buttons: Push buttons have no default behavior. Each push button may have client-side scripts associated with the element's event attributes. When an event occurs (e.g., the user presses the button, releases it, etc.), the associated script is triggered.Authors should specify the scripting language of a push button script through a default script declaration (with the META element).Authors create buttons with the BUTTON element or the INPUT element. Please consult the definitions of these elements for details about specifying different button types.

Note. Authors should note that the BUTTON element offers richer rendering capabilities than the INPUT element.

checkboxes

Checkboxes (and radio buttons) are on/off switches that may be toggled by the user. A switch is "on" when the control element's checked attribute is set. When a form is submitted, only "on" checkbox controls can become successful.Several checkboxes in a form may share the same control name. Thus, for example, checkboxes allow users to select several values for the same property. The INPUT element is used to create a checkbox control.

radio buttons

Radio buttons are like checkboxes except that when several share the same control name, they are mutually exclusive: when one is switched "on", all others with the same name are switched "off". The INPUT element is used to create a radio button control.If no radio button in a set sharing the same control name is initially "on", user agent behavior for choosing which control is initially "on" is undefined. At all times, exactly one of the radio buttons in a set is checked. If none of the <INPUT> elements of a set of radio buttons specifies `CHECKED', then the user agent must check the first radio button of the set initially.Since user agent behavior differs, authors should ensure that in each set of radio buttons that one is initially "on".

menus

Menus offer users options from which to choose. The SELECT element creates a menu, in combination with the OPTGROUP and OPTION elements.

text input

Authors may create two types of controls that allow users to input text. The INPUT element creates a single-line input control and the TEXTAREA element creates a multi-line input control. In both cases, the input text becomes the control's current value.

file select

This control type allows the user to select files so that their contents may be submitted with a form. The INPUT element is used to create a file select control.

hidden controls

Authors may create controls that are not rendered but whose values are submitted with a form. Authors generally use this control type to store information between client/server exchanges that would otherwise be lost due to the stateless nature of. The INPUT element is used to create a hidden control.

object controls

Authors may insert generic objects in forms such that associated values are submitted along with other controls. Authors create object controls with the OBJECT element.

The elements used to create controls generally appear inside a FORM element, but may also appear outside of a FORM element declaration when they are used to build user interfaces. This is discussed in the section on intrinsic events. Note that controls outside a form cannot be successful controls.The formmethod attribute specifies which HTTP method to use when sending the form-data. This attribute overrides the form's method attribute.The formmethod attribute is only used for buttons with type="submit".The form-data can be sent as URL variables (with method="get") or as HTTP post (with method="post").

Notes on the "get" method:
•   it appends the form-data to the URL in name/value pairs
•   it is useful for form submissions where a user want to bookmark the result
•   There is a limit to how much data you can place in a URL (varies between browsers), therefore, you cannot be sure that all of the form-data will be correctly transferred
•   Never use the "get" method to pass sensitive information! (password or other sensitive information will be visible in the browser's address bar)

Notes on the "post" method:
•   it sends the form-data as an HTTP post transaction
•   Form submissions with the "post" method cannot be bookmarked
•   it is more robust and secure than "get"
•   it does not have size limitations

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[I]   Very short answer questions (Max 40 words).   (2 * 5 = 10)

1. What is WWW?

Ans) The World Wide Web (WWW), commonly known as the Web, is an information system where documents and other web resources are identified by Uniform Resource Locators (URLs, such as *https://www.example.com/*), which may be interlinked by hypertext, and are accessible over the Internet.[1] The resources of the WWW may be accessed by users by a software application called a *web browser.*

*2.*What is the use of TITLE tag?

Ans) The HTML <title> tag is used for declaring the title, or name, of the HTML document.The title is usually displayed in the browser's title bar (at the top). It is also displayed in browser bookmarks and search results.The title tag is placed between the opening and closing <head> tags.

3.What is the use of <P> tag?

Ans) When writing in HTML, the <p> tag is a block element used to designate a paragraph. It is useful because Internet browsers add a bit of margin before after each element. The following sections contain information about this tag, including an example of it in use, as well as related attributes and browser compatibility.

4.What is protocol? Write the example of two protocols.

Ans) A protocol is a standard set of rules that allow electronic devices to communicate with each other. These rules include what type of data may be transmitted, what commands are used to send and receive data, and how data transfers are confirmed. there are different protocols used in internet that are

•TCP/IP(Transmission   Control   Protocol/Internet   Protocol)
• ARP (Address Resolution Protocol)

5.How to insert an in-line image in HTML document?

Ans) all images are best viewed separately from the HTML document and are best displayed as part of the document. Such images are called **In-line Images**.An example of the use of in-line images can be seen at the bottom of every page of this course. Using the Source... option on the View menu you can see the original source tags used to construct an HTML page. Look at this page and pay particular attention to the in-line graphics shown at the bottom of this page. They are included by using the following commands:

[II]   Short answer questions (Max 80 words).   (5* 2 = 10)

1. Explain the method of viewing a page with browser.

   Ans) a web page is a special type of document written in a computer language called *HTML* (that's short for HyperText Markup Language). Web pages are written for web *browsers*—programs like Internet Explorer, Google Chrome, and Safari. These browsers have a simple but crucially important job: they read the HTML in a web page document and display the perfectly formatted result for you to read. HTML plays a key role in web pages: It tells browsers how to display the contents of a page, using special instructions called *tags* that tell a browser when to start a paragraph, italicize a word, or display a picture. To create your own web pages, you need to learn to use this family of tags.

2. How to create list in HTML? Explain any two types of lists used in HTML with example.

   Ans) Lists are used to group together related pieces of information so they are clearly associated with each other and easy to read. In modern web development, lists are workhorse elements, frequently used for navigation as well as general content.Lists are good from a structural point of view as they help create a well-structured, more accessible, easy-to-maintain document. They are also useful because they provide specialized elements to which you can attach CSS styles. Finally, semantically correct lists help visitors read your web site, and they simplify maintenance when your pages need to be updated.There are three list types in HTML:
   •unordered list — used to group a set of related items in no particular order
   •ordered list — used to group a set of related items in a specific order
   •description list — used to display name/value pairs such as terms and definitions
   Each list type has a specific purpose and meaning in a web page.

[III]   Long answer questions (Max 150 words)   (2 * 10 = 20)

1. Explain various security and privacy issues in web?

Ans) Firewalls Internet security is a branch of computer security specifically related to not only Internet, often involving browser security and the World Wide Web, but also network security as

it applies to other applications or operating systems as a whole. Its objective is to establish rules and measures to use against attacks over the Internet. The Internet represents an insecure channel for exchanging information, which leads to a high risk of intrusion or fraud, such as phishing, online viruses, trojans, worms and more.Many methods are used to protect the transfer of data, including encryption and from-the-ground-up engineering. The current focus is on prevention as much as on real time protection against well known and new threats.

Network layer security

TCP/IP protocols may be secured with cryptographic methods and security protocols. These protocols include Secure Sockets Layer (SSL), succeeded by Transport Layer Security (TLS) for web traffic, Pretty Good Privacy (PGP) for email, and IPsec for the network layer security.

Internet Protocol Security (IPsec)

IPsec is designed to protect TCP/IP communication in a secure manner. It is a set of security extensions developed by the Internet Task Force (IETF). It provides security and authentication at the IP layer by transforming data using encryption. Two main types of transformation that form the basis of IPsec: the Authentication Header (AH) and ESP. These two protocols provide data integrity, data origin authentication, and anti-replay service. These protocols can be used alone or in combination to provide the desired set of security services for the Internet Protocol (IP) layer.

The basic components of the IPsec security architecture are described in terms of the following functionalities:
- Security protocols for AH and ESP
- Security association for policy management and traffic processing
- Manual and automatic key management for the Internet key exchange (IKE)
- Algorithms for authentication and encryption

The set of security services provided at the IP layer includes access control, data origin integrity, protection against replays, and confidentiality. The algorithm allows these sets to work independently without affecting other parts of the implementation. The IPsec implementation is operated in a host or security gateway environment giving protection to IP traffic.

Multi-factor authentication

Multi-factor authentication (MFA) is a method of computer access control in which a user is granted access only after successfully presenting several separate pieces of evidence to an authentication mechanism – typically at least two of the following categories: knowledge (something they know), possession (something they have), and inherence (something they are).[11][12] Internet resources, such as websites and email, may be secured using multi-factor authentication.

Security token

Some online sites offer customers the ability to use a six-digit code which randomly changes every 30–60 seconds on a security token. The keys on the security token have built in mathematical computations and manipulate numbers based on the current time built into the device. This means that every thirty seconds there is only a certain array of numbers possible which would be correct to validate access to the online account. The website that the user is logging into would be made aware of that device's serial number and would know the computation and correct time built into the device to verify that the number given is indeed one of the handful of six-digit numbers that works in that given 30-60 second cycle. After 30–60 seconds the device will present a new random six-digit number which can log into the website.

Electronic mail security

Background

Email messages are composed, delivered, and stored in a multiple step process, which starts with the message's composition. When the user finishes composing the message and sends it, the message is transformed into a standard format: an RFC 2822 formatted message. Afterwards, the message can be transmitted. Using a network connection, the mail client, referred to as a mail user agent (MUA), connects to a mail transfer agent (MTA) operating on the mail server. The mail client then provides the sender's identity to the server. Next, using the mail server commands, the client sends the recipient list to the mail server. The client then supplies the message. Once the mail server receives and processes the message, several events occur: recipient server identification, connection establishment, and message transmission. Using Domain Name System (DNS) services, the sender's mail server determines the mail server(s) for the recipient(s). Then, the server opens up a connection(s) to the recipient mail server(s) and sends the message employing a process similar to that used by the originating client, delivering the message to the recipient(s).

Pretty Good Privacy (PGP)

Pretty Good Privacy provides confidentiality by encrypting messages to be transmitted or data files to be stored using an encryption algorithm such as Triple DES or CAST-128. Email messages can be protected by using cryptography in various ways, such as the following:

Signing an email message to ensure its integrity and confirm the identity of its sender. Encrypting the body of an email message to ensure its confidentiality.Encrypting the communications between mail servers to protect the confidentiality of both message body and message header.The first two methods, message signing and message body

encryption, are often used together; however, encrypting the transmissions between mail servers is typically used only when two organizations want to protect emails regularly sent between each other. For example, the organizations could establish a virtual private network (VPN) to encrypt the communications between their mail servers over the Internet.Unlike methods that can only encrypt a message body, a VPN can encrypt entire messages, including email header information such as senders, recipients, and subjects. In some cases, organizations may need to protect header information. However, a VPN solution alone cannot provide a message signing mechanism, nor can it provide protection for email messages along the entire route from sender to recipient.

Multipurpose Internet Mail Extensions (MIME)

MIME transforms non-ASCII data at the sender's site to Network Virtual Terminal (NVT) ASCII data and delivers it to client's Simple Mail Transfer Protocol (SMTP) to be sent through the Internet.[15] The server SMTP at the receiver's side receives the NVT ASCII data and delivers it to MIME to be transformed back to the original non-ASCII data.

Message Authentication Code

A Message authentication code (MAC) is a cryptography method that uses a secret key to encrypt a message. This method outputs a MAC value that can be decrypted by the receiver, using the same secret key used by the sender. The Message Authentication Code protects both a message's data integrity as well as its authenticity.

Firewalls

A computer firewall controls access between networks. It generally consists of gateways and filters which vary from one firewall to another. Firewalls also screen network traffic and are able to block traffic that is dangerous. Firewalls act as the intermediate server between SMTP and Hypertext Transfer Protocol (HTTP) connections.

Role of firewalls in web security

Firewalls impose restrictions on incoming and outgoing Network packets to and from private networks. Incoming or outgoing traffic must pass through the firewall; only authorized traffic is allowed to pass through it. Firewalls create checkpoints between an internal private network and the public Internet, also known as choke points can create choke points based on IP source and TCP port number. They can also serve as the platform for IPsec. Using tunnel mode capability, firewall can be used to implement VPNs. Firewalls can also limit network exposure by hiding the internal network system and information from the public Internet.

Types of firewall

Packet filter
A packet filter is a first generation firewall that processes network traffic on a packet-by-packet basis. Its main job is to filter traffic from a remote IP host, so a router is needed to connect the internal network to the Internet. The router is known as a screening router, which screens packets leaving and entering the network.

Stateful packet inspection
In a stateful firewall the circuit-level gateway is a proxy server that operates at the network level of an Open Systems Interconnection (OSI) model and statically defines what traffic will be allowed. Circuit proxies will forward Network packets (formatted unit of data) containing a given port number, if the port is permitted by the algorithm. The main advantage of a proxy server is its ability to provide Network Address Translation (NAT), which can hide the user's IP address from the Internet, effectively protecting all internal information from the Internet.

Application-level gateway
An application-level firewall is a third generation firewall where a proxy server operates at the very top of the OSI model, the IP suite application level. A network packet is forwarded only if a connection is established using a known protocol. Application-level gateways are notable for analyzing entire messages rather than individual packets of data when the data are being sent or received.

Browser choice
Main article: Browser security
Web browser statistics tend to affect the amount a Web browser is exploited. For example, Internet Explorer 6, which used to own a majority of the Web browser market share,is considered extremely insecure[18] because vulnerabilities were exploited due to its former popularity. Since browser choice is now more evenly distributed (Internet Explorer at 28.5%, Firefox at 18.4%, Google Chrome at 40.8%, and so on),vulnerabilities are exploited in many different browsers.

Internet security products
Antivirus
Antivirus software and Internet security programs can protect a programmable device from attack by detecting and eliminating malware; Antivirus software was mainly shareware in the early years of the Internet,but there are nowseveral free security applications on the Internet to choose from for all platforms.

Password managers

A password manager is a software application that helps a user store and organize passwords. Password managers usually store passwords encrypted, requiring the user to create a master password; a single, ideally very strong password which grants the user access to their entire password database from top to bottom.
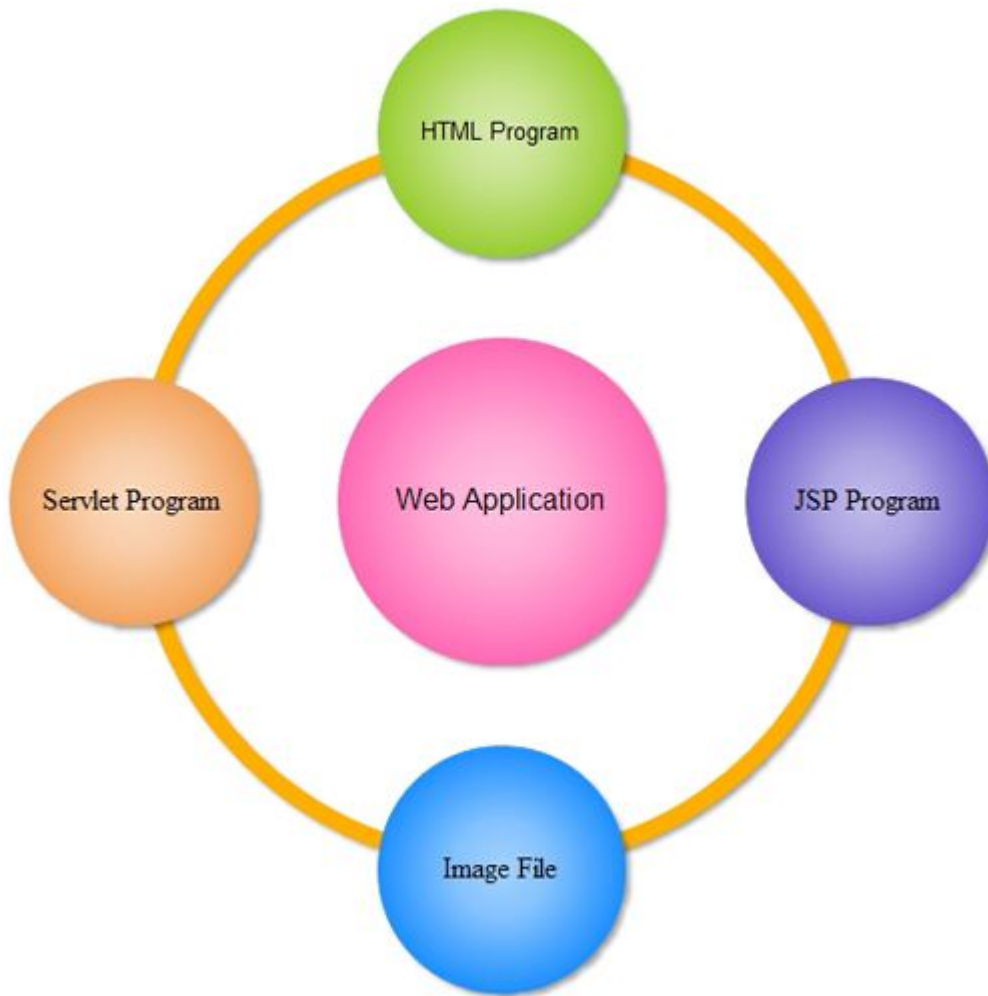
Security suites

So called security suites were first offered for sale in 2003 (McAfee) and contain a suite of firewalls, anti-virus, anti-spyware and more.They also offer theft protection, portable storage device safety check, private Internet browsing, cloud anti-spam, a file shredder or make security-related decisions (answering popup windows) and several were free of charge.

2. Explain various types of web resources?

Ans) A web application is a collection of web resource programs which can generate web pages. There are two types of web resource programs based on the web page they generate.

1. Static web resource programs: generates static web pages. Example HTML.

2. Dynamic web resource programs: generates dynamic web pages. Example Servlet Program, JSP Program, ASP.net program and etc…..

A web application is a collection of web resource programs.

web application architecture

• Static web page contains fixed content forever. The content of dynamic web page change based on the input values of the request or time of the request generation.

• Image file, Java Script file can't generate web pages directly but they act as helper programs to another web resource programs. Web application is a collection of static, dynamic and helper (like image files) web resource programs.

• Stand alone applications, desktop applications and client-server applications will be executed by programmer manually. But the web resource programs of web application

must be executed dynamically when they are requested by clients (Browser windows) so we can't think about manual execution for web resource programs. we can use a special software called web server software to execute the web resource programs dynamically when they are requested by the clients.

• A web server software can also manage, execute multiple web applications simultaneously or parallely.