Introduction to Web Technologies

Short Answer Questions

**UNIT-I**

**1.What is the difference between node and host?**

A node is any addressable device connected to a network whereas the host is a more

specific descriptor that refers to a networked general-purpose computer rather than a single

purpose device (such as a printer).

**2. Define Protocol?**

A protocol is a formal set of rules that must be followed in order to communicate. The

protocol determines the following:

1.The type of error checking to be used

2.Data Compression method, if any

3.How the sending device will indicate that it has finished sending a message

4.How the receiving device will indicate that it has received a message

**3. What are the functions of a browser?**

1.Automatic URL completion

2.Script execution

3.Event Handling

4.Secure Communication

5.Plug-in execution

**4. Define a Port?**

A port is a logical channel to an application running on a host. ie. The applications

running on the host machines are uniquely identified by port numbers.

**5. What do you mean by Well-Known Ports?**

Port numbers can range from 1 to 65535, however ports 1 to 1023 are reserved. These

reserved ports are referred to as we1l-known ports because the Internet Assigned Numbers

Authority publicly documents the applications that use them.

**6. What is W3C?**

World Wide Web Consortium (W3C)is a standardizing organization for web

technologies-web technologies standardized by W3C are called Recommendations.

**7. Define URI, URL, URN?**

1. URI (Uniform Resource Identifier): It identifies an object on the Internet.

2. URL (Uniform Resource Locator): It is a specification for identifying an object such as

a file, newsgroup, CGI program or e-mail address by indicating the exact location on

the internet.

3. URN (Uniform Resource Name): It is a method for referencing an object without

declaring the full path to the object.

**8. Define URL Encoding?**

URL encoding involves replacing all unsafe and nonprintable characters with a percent

sign (%) followed by two hexadecimal digits corresponding to the character's ASCII value.

**9. List the goals of SGML?**

1. To manage the flow of millions of pages.

2. For structuring information exchange

3. For modeling inter-document linkages

4. For managing information flows between departments and weapons systems

**10. What is a Recommendation?**

A Recommendation is not an actual software product, but a document that specifies

technology’s role, syntax rules.

**11. Define DTD?**

A DTD is a set of rules that specifies how to use XML markup. It contains specifications

for each element, including what the element's attributes are, what values the attributes can

take on and what elements can be contained in others.

**12. Name some browsers?**

Microsoft Internet explorer, Netscape, Google Chrome, Mozilla Firefox.

**13. Define MIME?**

MIME (Multipurpose Internet Mail Extensions) is an open standard for sending

multipart, multimedia data through Internet email.

**14. What are the sequences of steps for each HTTP request from a client to the server?**

1. Making the connection

2. Making a request

3. The response

4. Closing the connection

**15. Define Encapsulation?**

Placing the data inside a package of headers is known as encapsulation.

**16. What is meant by Stateless Connection?**

When a web server receives a HTTP request from a web browser it evaluates the request

and returns the requested document, if it exists, and then breaks the HTTP connection. This

document is preceded by the response header, which has details about how to display the

document that will be sent by the server. Each time a request is made to the server, it is as if

there was no prior connection and each request can yield only a single document. This is

known as Stateless Connection.

**17. Name some web servers?**

Microsoft Internet Information Services (IIS), Apache.

**18. What are the common HTTP request types?**

Get

Post

**19. What is a GET request?**

A get request typically gets information from a server. Common use of get requests is to

retrieve an HTML document or an image.

**20. What is a POST request?**

A post request typically posts or sends data to a server. Common use of post requests is to

send information to server such as authentication information.

**21. Name some Recommendations by W3C?**

XHTML, CSS, HTML, XML.

**22. Explain the syntax of <frame> tags in detail?**

<frameset rows=” “, cols=” “>

<frame name=” “

<frame name=” “

…

<frame name=” “

src=” “>

src=” “>

src=” “>

</frameset>

**23. Name the three flavors of Document Type declaration?**

1.Strict

2.Transitional

3.Frameset

**24. What are the three types of list supported by HTML?**

1.Unordered

2.Ordered

3.Definition

**25. Define an HTML Form?**

An HTML Form is used to allow a user to input data on a web page. The value of

the required action attribute specifies a URL to which the information collected on the form

should be sent when the user submits the form.

**UNIT-II**

**1. What are Style Sheets?**

Style sheets are collections of style information that are applied to plain text. Style

information includes font attributes such as type size, special effects (bold ,italic,underline),

color and alignment. Style sheets also provide broader formatting instructions by specifying

values for quantities such as line spacing and left and right margins.

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**2. Give the elements to write a script?`**

<script type=”text/javascript”> write script here

</script>

**3. List down the ways of including style information in a document?**

**1.Linked Styles** -Style information is read from a separate file that is specified in the

<LINK> tag

**2.Embedded Styles** -Style information is defined in the document head using the

<STYLE> and </STYLE> tags.

**3.Inline Styles** -Style information is placed inside an HTML tag and applies to all

content between that tag and it companion closing tag.

**4. What is the use of method ParseInt?**

PareseInt converts integer in string format to its corresponding numeric value.

**5. Define cascading?**

Cascading refers to a certain set of rules that browsers use to determine how to use the

style information. Such a set of rules is useful in the event of conflicting style information

because the rules would give the browser a way to determine which style is given precedence.

**6. How will you create an array using JavaScript?**

var newarray = new array (size);

**7. What are the style precedence rules when using multiple approaches?**

Inline styles override both linked style sheets and style information stored in the

document head with <STYLE> tag

Styles defined in the document head override linked style sheets.

Linked style sheets override browser defaults.

**8. Give some methods of String Object?**

concat(string), indexOf(string, start), lastIndexOf(string, start), substr(start, length),

substring(start, end), toLowercase(), toUpperCase(),split(token)

**9. List down font characteristics permitted in Style Sheets.**

1.font-family

2.font-size

3.font-weight

4.font-style

5.font-variant

**10. Give some methods of Date Object?**

getDate(), gatDay(), getHours(), getMonth(), getMinutes(), getSeconds(), hetFullYear()

**11. Define Scriptlets**?

Scriptlets enable you to create small, reusable web applications that can be used in any

web page. Scriptlets are created using HTML, scripting and Dynamic HTML. To include

them in an HTML document use the <OBJECT> tag.

**12. What are the three values the user defined compare function for sorting array should**

**return?**

1.A negative value if the first argument is less than the second

2.Zero if both argument are equal

3.A positive value if the first argument is greater than the second

**13. Give some methods of Document Object?**

write (), writeln(), cookie

**14**. **Write a script to display the position of mouse click?**

<html>

<head>

<script type = "text/javascript">

function start()

{

alert (event.offsetX+","+event.offsetY);

}

</script>

</head>

<body onclick = "start()">

<p>Welcome to our Web page!</p>

</body>

</html>

**15. Give some methods of window object?**

Open (url, name, options), prompt (message, default), close(), focus()

**16. How will you create an event for an element?**

<script type =”text/javascript” for=”objectname” event=”eventname”>

//code to handle event

</script>

**17. What is Margin Collapse?**

When two consecutive block boxes are rendered(the first on top of second),a

special rule called margin collapse is used to determine the vertical separation between the

boxes. The bottom margin of the first box and the top margin of the second box are

collapsed into a single margin.

**18. List the JavaScript global objects?**

escape, eval, isFinite, isNan, parseFloat, parseInt, unEscape

**19.What is Half-Leading?**

If the height of a line box is greater than the character cell height, then the character cells

are vertically centered within the line box. The distance between the top of a character cell

and the top of a line box is called half-leading.

**20. Define CSS shortcut property?**

It is a property that allows values to be specified for several nonshorthand properties with

a single declaration. Example: line-height property.

**UNIT-III**

**1. What is a DOM?**

A Document Object Model is an application programming interface that defines how

javascript programs can access and manipulate the HTML document currently displayed by a

browser.

**2. What is an Event?**

An event in a browser is an occurrence of potential interest. Example events are the

mouse moving over an element. a mouse button being clicked, or a key being pressed. Each

type of event has an abbreviated name associated with it.

**3. Define Intrinsic Event handling.**

Browser-based java script programs are event-driven.ie, the java script functions are

called in response to various user actions, such as clicking a button, or moving the mouse

over a certain element.

**4. What is Event listener in DOM?**

An event listener is a function that takes a single argument that is an instance of Event. A

call to the addEventListener () method on a node object associates an event listener with a

type of event occurring on that node.

**5. Differentiate Dynamic document with Static document?**

An HTML document that contains scripting is called a dynamic document

whereas a simple HTML document without scripting is known as a static document.

**6. What are the stages in a Servlet life cycle?**

1.init()

2.service()

3.destroy()

**7. What are Servlets?**

A small program that runs on a server, the term usually refers to a Java applet that runs

within a Web server environment. This is analogous to a Java applet that runs within a Web

browser environment. Java servlets are becoming increasingly popular as an alternative to CGI

programs. The biggest difference between the two is that a Java applet is persistent.

**8. What do you mean by Server-side?**

Occurring on the server side of a client-server system. For example, on the World Wide

Web, CGI scripts are server-side applications because they run on the Web server. In contrast,

JavaScript scripts are client-side because they are executed by your browser (the client). Java

applets can be either server-side or client- side depending on which computer (the server or

the client) executes them.

**9. What is a Session?**

A collection of HTTP requests all associated with a single session ID is known as a

session. Each HTTP request is examined by the server to see if it contains a special identifier

known as a session ID.

**10. What are Cookies?**

A cookie is a Name-value pair that a web server sends to a client machine as part of an

HTTP response, specifically through the Set-Cookie header field. Browsers will store the

cookie pairs found in the response in a file on the client machine.

**11. Define a Thread?**

A thread is the java VM’s abstract representation of the processing to be performed to

accomplish a particular task, possibly concurrently with other tasks.

**12. Give the examples of the types of information that are not part of a thread’s state.**

1.Instance Variables

2.Class variables

3.Files,databases,other servers and any resource external to the java VM

**13. When the threads are said to be deadlocked?**

Once an application has two or more locks, it is possible to reach a state in which there

are two threads, each holding a lock for which the other is waiting. The threads are said to be

deadlocked and neither will complete execution.

**14. What is rollover effect?**

An image changes when we place the mouse over it,and changes back when the mouse

moves away from the image.

**15. Give the functions of the HTML Intrinsic Event attributes “onmousedown” and**

**“onmouseup”?**

“onmousedown”-The mouse has been clicked over the element

“onmouseup”-The mouse has been released over the element.

**16. Define a bubbling listener.**

A bubbling listener is a listener associated with the ancestor of the target node and that

was created with a call to addEventlistener() that had its third argument set to false.

**17. What are the actions involved in a doGet()method?**

1.Set the HTTP Content-Type header of the response.

2.Obtain a PrintWriter object from the HttpServletResponse parameter object.

3.Output a valid HTML document to the PrintWriter object.

4.Close the PrintWriter object.

**18. Illustrate the general steps to run a servlet.**

1.Compile the servlet using an appropriate compiler version.

2.Copy the resulting .class file to the appropriate directory for our java-servlet

capable server.

3.Start the server

4.Navigate to the URL corresponding to the servlet.

**19. Define a parameter name or value?**

A parameter name or value can be composed of any sequence of 8-bit characters,

including control characters and other nonprinting characters. if a name or value contains any

nonalphanumeric characters then the name or value will undergo a transformation known as

url encoding.

**20. How to terminate a Session?**

The Http Session interface defines a setMaxInactiveInterval(int interval)method that

takes an integer argument interval representing a number of seconds. if more than interval

seconds elapse between any two HTTP requests to the servlet from the user represented by

this Http Session object, then the users session will expire before the second of these two

requests can be processed.

**21.Define the function of HttpServletRequest Methods”StringBuffer getRequestURL( )”**

Return a string buffer containing the URL used to access this servlet, excluding any

query string appended to the URL as well as any jsessionidpath parameter.

**UNIT-IV**

**1. Define Java Server Pages?**

It can be defined as one instantiation of a class of related technologies that facilitate

separate development of a website’s presentation and logic. The key contribution of these

technologies is to embed program code related to presentation within a document.

**2. What is a Scriplet?**

A Scriplet is a fragment of java code that is embedded within the JSP document.

**3. What are the drawbacks of two-step approach in JSP over direct interpretation?**

1.Debugging

2.Delay during the first time a JSP document is requested.

**4. Define a Web Application?**

To implement larger tasks, a large collection of resources such as Servlets,JSP

documents, Utility and Support Java Classes, Static HTML documents, Style Sheets, JavaScript

files, Images are needed that work together in order to provide what appears to an end user to be

a single software application.. Such a collection of resources is known as a web application..

**5. Write the steps for installing a Web Application?**

1.Create a directory under the webapps subdirectory.

2.Place the JSP document in the new subdirectory.

3.Deploy the application to the sever.

**6. What is meant by deploying the application to the server?**

During the installation of a web application, after loading the JSP document in the

subdirectory, the server have to be notified that a new web application is available. This step

is known as deploying the application to the server.

**7. Define a Deployment Descriptor?**

The value to be displayed in the Display Name field is one of the pieces of information

that can be associated with a web application through an XML document called a deployment

descriptor.

**8. Specify the use of the deployment descriptor element “login-config”?**

It defines how the container should request user-name and password information

when a user attempts to access a protected resource.

**9. How a URL pattern is interpreted?**

When the server receives a request for a URL,it first selects the web application that will

handle this request. It chooses the application that has the longest context path matching a

prefix of the path portion of the URL.

**10. Name the three types of information available in a valid JSP document?**

1.JSP markup

2.Expression Language(EL)expressions

3.Template data

**11. What are the two contexts by which an EL expression can be invoked?**

1.Within template data

2.Within certain attribute values in JSP markup

**12. What are the Literals that can be used in a EL?**

1.The Booleans-True and False

2.Decimal,Integer and Floating point

3.Reserved word-Null

**13. Name the reserved words in EL?**

1.and 2.div 3.empty

4.eq

7.gt

5.false 6.ge

8.not 9.null

**14. What is the function of EL implicit objects pageScope and requestScope?**

pageScope-Values accessible via calls to page.getAttribute()

requestScope- Values accessible via calls to requestpage.getAttribute()

**15. Name the two types of directives available for use in a JSP document?**

**1**.**Page**-The page directive(directive. page element) has a variety of attributes

that may be set.

**2.Include**-The include directive(directive. include element) imports text from

another file into the JSP document at the point at which the directive

appears.

**16. What is known as a Translation Unit?**

A top-level JSP document plus all of the segments it includes either directly or indirectly

through include directives in segments is known as a translation unit, because the translator

effectively assembles all of the text from these files into a single JSP document which is then

translated.

**17. What are the three categories of JSP element types**?

1.Scripting

2.Directive

3.Action

**18. Explain the JSP action element?**

It is an element that is translated into javaservlet code that performs some action. These

elements provide standard actions ie, the actions that are required by the JSP specification to

be provided by any JSP-compliant container. The JSP tag library mechanism allows

additional action elements to be used within a JSP document, which provide custom actions.

**19. Give some JSTL Core actions and their functions.**

set-Assign a value to a scoped variable

remove-Destroy a Scoped variable

url-Create a URL with query string

forEach-Iterate over a collection of items

**20. Define a Scoped variable.**

It is a non implicit EL variable, that is an attribute of one of the page ,request ,session,or

application objects. The object containing the attribute is called the scope of the variable and

hence the name scoped variable

**21. Define JavaBeans Technology.**

A simple mechanism to call java methods from within a JSP document.JSP provides such

a mechanism through its support for JavaBeans classes.If a java class is written so as to

conform with certain aspects of the JavaBeans Specification,the certain methods of this class

can be called from a JSP document.

**22. Describe the Model-View-Controller paradigm**.

Most real-world web applications are much larger and may contain a large number of

components such as Servlets and JSP documents and numerous support files such as

JavaBeans classes. While there are many possible ways of organizing the components and

support files for such an application, one approach called the model-view-controller

paradigm is widely used in one form or another in many web applications.

**23. Define PHP:Hypertext Preprocessor.**

PHP is a Perl-like scripting language that can be embedded in HTML documents much as

Java Scriplets can be embedded in JSP pages or scripting code in ASP. The syntax<?php…?>

can be used to embed PHP code which means that an XML parser will interpret the tags as

XML processing instructions with target php.

**24. Define ColdFusion®.**

It is the technology for embedding program logic in HTML documents. All program

logic is embedded as XML elements, so a Cold Fusion document is XML compatible. A

ColdFusion document may also contain expressions enclosed in # characters, which are

evaluated when a ColdFusion document is requested and replaced with the values obtained.

**UNIT-V**

**1. Define a Web Service.**

A web service is a server application that uses HTTP to accept and return SOAP

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documents, where the content of the documents is specified by a WSDL document that uses

embedded XML Schema markup to define data types.

**2. Describe the implementation of Web Service.**

A web service servlet accepts HTTP requests from clients and provides an HTTP

response for each request received. It expects that each HTTP request it receives will contain a

SOAP XML document in the body of the request. This SOAP document specifies an operation

to be performed by the web service and supplies input data for that operation.

**3. Define a WSDL.**

A Web service definition language document for a web service identifies the operations

provided by the web service, what the input data to each operation is, and what output data is

produced by the operation.

**4. What is known as the Service Endpoint Interface?**

The starting point for writing a web service using the JWSDP 1.3 tools is writing a Java

interface that specifies the operations that will be provided by the service(essentially an API

for the service).This is known as the service endpoint interface.

**5. Write the basic rules for service endpoint interface.**

1.the interface must extend the java.rmi.Remote interface

2.Every method in the interface must throw java.rmi.RemoteException

3.Every method parameter and every return value must conform to certain restrictions on

the allowed data types

4.The interface must not contain any public static final declarations.

**6. Define XML Schema.**

XML schema defines the structure of XML documents. A key contribution of XML

schema is its definition of a collection of standard data types. Each data type definition

includes a specification of the range of values that can be represented by the data type and

details on how to represent those values as strings.

**7. What is a deployment descriptor?**

Deployment descriptor specifies various configuration parameters.

**8. Define Simple Object Access Protocol.(SOAP).**

SOAP is an XML vocabulary that can be used to communicate data and was originally

designed for communicating structured data that might be found in object-oriented programs.

**9. What is RPC Representation?**

RPC is the generic term for the type of communication used for web service

operations.The client makes a call to a method or procedure that resides on another

machine.This concept has been implemented in many ways by many programming languages

and operating systems.

**10. Define a Struct?**

A struct can be thought of as an instance of a class that consists entirely of public

instance variables. It is simply a container in which data can be stored in named variables.

**11. What is literal-encoding?**

An encoding conforming with the XML schema contained in the we service’s WSDL

over SOAP 1.1 encoding of data.A literal encoding is indicated within a WSDL by specifying

literal for the use attribute of a soap:body element.

**12.Name the two operations defined by WSDL 1.1.**

1.RPC

2.Document

**13. Define Serialization?**

The flexibility in converting from an internal form of data to a SOAP representation is

known as serialization and it comes at the price of forcing the software that deserializes a

SOAP representation to be prepared to accept SOAP documents in a variety of forms.

**14. Describe the Java support for SOAP?**

Java provides support for creating and manipulating SOAP documents through SAAJ, the

SOAP with Attachments API for Java technology. This API is included with JWSDP1.3.

**15.What are Serializable objects?**

When an object is serialized, the data contained within the object is transformed into a

stream of bytes representing the data. This object data stream can then be stored in a file,

transmitted over a communications network, or treated like any other stream of data.

**16. Name the methods of HttpServletRequest interface?**

String getParameter(string name), string[] getParameterValues(String name),

cookie[] getCookies(), HttpSession getSession(boolen, create)

**17. What are directives?**

Directives are messages to the jsp container that enables the programmer to specify page

settings, to include content from other resources and to specify custom-tag libraries for use in

JSP.

**18. Name the Header Child Element Attributes in SOAP?**

1.must understand

2.encoding style

3.role

4.relay

**19. What is the use of JSP?**

JSP enable web application programmers to create dynamic content by reusing

predefined components and by interacting with components using server side scripting.

**20. Differentiate a Simple type with a Complex type**

A simple type is a data type whose values are represented in XML documents by

character data, while a complex type is represented using markup.

**21. Define CDATA?**

Character data(CDATA) is a text in a document that should not be parsed by the XML

parser. Any entities included in the CDATA block will not be replaced by their value and

markup (such as HTML tags) will not be treated as markup.

**22. Describe the structure of SOAP element?**

It consists of the following:

1.The SOAP envelope element

2.The SOAP header element

3.The SOAP body element

4.The SOAP fault element

**23. Define JAX-RPC?**

JAX-RPC (Java API for XML-Based RPC) is an application program interface (API) in

the Java Web Services Developer Pack (WSDP) that enables Java developers to include

remote procedure calls (RPCs) with Web services or other Web-based applications. JAX-

RPC is aimed at making it easier for applications or Web services to call other applications or

Web services.

**24. What is SOAP Envelope element?**

The required SOAP Envelope element is the root element of a SOAP message. This

element defines the XML document as a SOAP message.

**Example**

<?xml version="1.0"?>

<soap:Envelope xmlns:soap="http://www.w3.org/2001/12/soap-

envelope"

soap:encodingStyle="http://www.w3.org/2001/12/soap-encoding">

Message information [goes here </soap:Envelope>](http://www.w3.org/2001/12/soap-encoding)

**25. Define the SOAP Fault element**?

The SOAP fault mechanism returns specific information about the error, including a

predefined code, a description, the address of the SOAP processor that generated

1.A SOAP Message can carry only one fault block

2.Fault element is an optional part of SOAP Message

3.SOAP fault is linked to the 500 to 599 range of status codes.

Long Answer Questions

**UNIT-I**

**1. Explain the World Wide Web.**

The World Wide Web, the WWW, or the We b, is the largest, the fastest growing, and

the most popular Internet service. In addition to text, it can display images, animations,

sounds, and videos. To access the Web information you need:

(1) A connection to the Internet and

(2) A Web browser such as Netscape or Internet Explorer.

**Web browser**

A Web browser is a software program that allows you to view or "browse" individual

pages on the Web. The computer running a Web browser is called a client machine (because

it just requests and receives data) while the computer called server provides the data it stores.

**Web page**

A Web page is a single electronic document written in HTML. Web pages vary in

content, design, and size, depending on the purpose.

**Web site**

A Web site may have one or more related Web pages. The first page one sees in a

website is called the home page. This page usually provides an overview of what you will

find in the Web site and offers a list of items, which link to other pages on the site or to other

Web sites.

**Home Page**

It is the web page that appears each time your Web browser (internet explorer). We

can choose any page on the web to set as your home page.

**HTML**

HTML stands for Hypertext Markup Language and it is the standard computer

language used on the World Wide Web. The HTML code tells browsers (such as Explorer

and Netscape) how Web pages should be presented. Web browsers then let you see the Web

pages content.

**Navigation Buttons**

Allow you to move through information on the web (Back, Forward). You can even

stop the transfer of a web page if it is taking a lot of time.

**Hyperlinks**

A web page contains a lot of text that is highlighted such that when you click

on it can take you to another page. Hyperlinks allow you to move through a vast number of

information on the internet by moving from one web page to another.

**URL**

Each Web page has its own address, or URL (Uniform Resource Locator). The URL

identifies the location of each file on the WWW. Ex.www.aub.edu.lb

**E-mail**

The internet allows you to exchange electronic mail with people around the

world.Electronic mail is fast, inexpensive, and saves paper. The most popular web-based e-

mail services are www.hot mail.com and www. yahoo.com.

**Downloading** [**software**](file:///C%3A%5CUsers%5CSatish%5CAppData%5CLocal%5CTemp%5Cwww.hot)

Thousands of programs are available on the internet. The internet offers you the

facility of downloading programs.

**2. Explain HTTP Request and Response Message?**

**HTTP Request Message**

The client initiates an HTTP session by opening a TCP connection to the HTTP

server with which it wishes to communicate. It then sends request messages to the server,

each of which specifies a particular type of action that the user of the HTTP client would like

the server to take.

Requests can be generated either by specific user action (such as clicking a hyperlink

in a Web browser) or indirectly as a result of a prior action (such as a reference to an inline

image in an HTML document leading to a request for that image.)

HTTP requests use a message format that is based on the generic message format

described in the preceding topic, but specific to the needs of requests. The structure of this

format is as follows :

<request-line>

<general-headers>

<request-headers>

<entity-headers>

<empty-line>[<message-body>][<message-trailers>]

**HTTP Response Message**

Each request message sent by an HTTP client to a server prompts the server to send

back a response message. Actually, in certain cases the server may in fact send two

responses, preliminary response followed by the real one. Usually though, one request yields

one response, which indicates the results of the server's processing of the request, and often

also carries an entity (file or resource) in the message body.

Like requests, responses use their own specific message format that is based on the

HTTP generic message format. The format, shown is as follows:

<status-line>

<general-headers>

<response-headers>

<entity-headers>

<empty-line>[<message-body>][<message-trailers>]

**3. Explain in detail about various protocols used in ?**

**HTTP**

Hypertext Transfer Protocol (HTTP) is the industry standard protocol for

transferring web documents over the internet.

The Hypertext Transfer Protocol (HTTP) is an Application Layer protocol for

distributed, collaborative, hypermedia information systems.

HTTP is a request-response standard typical of client-server computing.

In HTTP, web browsers or spiders typically act as clients, while an

application running on the computer hosting the web site acts as a server.

The client, which submits HTTP requests, is also referred to as the user agent.

The responding server, which stores or creates resources such as HTML files

and images, may be called the origin server

**SMTP**

Simple Mail Transfer Protocol (SMTP) is used to send messages from server

to server, most e-mail systems use SMTP

Simple Mail Transfer Protocol is an Internet standard for electronic mail (e-

mail) transmission across Internet Protocol (IP) networks.

SMTP was first defined in RFC 821 (STD 15) , and last updated by RFC5321

which includes the extended SMTP (ESMTP) additions, and is the protocol in

widespread use today.

SMTP is specified for outgoing mail transport and uses TCP port 25.

While electronic mail servers and other mail transfer agents use SMTP to send

and receive mail messages, user-level client mail applications typically only

use SMTP for sending messages to a mail server for relaying.

**POP3**

Post Office Protocol (POP3) services store email messages on a remote server

until a user chooses to view the messages and download them onto a local

machine

POP and IMAP (Internet Message Access Protocol) are the two most

prevalent Internet standard protocols for e-mail retrieval.

Virtually all modern e-mail clients and servers support both. The POP

protocol has been developed through several versions, with version 3 (POP3)

being the current standard.

**MIME**

Multipurpose Internet Mail Extensions (MIME) is an Internet standard that

extends the format of e-mail to support

o Text in character sets other than ASCII

o Non-text attachments

o Message bodies with multiple parts

o Header information in non-ASCII character sets

MIME's use, however, has grown beyond describing the content of e-mail to

describing content type in general, including for the web

Virtually all human-written Internet e-mail and a fairly large proportion of

automated e-mail is transmitted via SMTP in MIME format. Internet e-mail is

so closely associated with the SMTP and MIME standards that it is sometimes

called SMTP/MIME e-mail.

The content types defined by MIME standards are also of importance outside

of e-mail, such as in communication protocols like HTTP for the World Wide

Web. HTTP requires that data be transmitted in the context of e-mail-like

messages, although the data most often is not actually e-mail.

**IMAP**

Internet Message Access Protocol (IMAP) mail services also store the e-mails

on a remote server but allow users to manipulate e-mail messages directly on

the server without downloading the message onto a local machine.

**4. Describe HTML Forms with example.**

HTML Forms are used to select different kinds of user input. HTML forms are used

to pass data to a server. A form can contain input elements like text fields, checkboxes, radio-

buttons, submit buttons and more. A form can also contain select lists, textarea, fieldset,

legend, and label elements.The <form> tag is used to create an HTML form.

**HTML Input Element**

The most important form element is the input element. The input element is

used to select user information.An input element can vary in many ways, depending on the

type attribute. An input element can be of type text field, checkbox, password, radio button,

submit button, and more.The most used input types are described below.

**Text Fields**

<input type="text" /> defines a one-line input field that a user can enter text into:

<form>

First name: <input type="text" name="firstname" /><br />

Last name: <input type="text" name="lastname" />

</form>

**Password Field**

<input type="password" /> defines a password field:

<form>

Password: <input type="password" name="pwd" />

</form>

**Radio Buttons**

<input type="radio" /> defines a radio button. Radio buttons let a user select only one of a

limited number of choices:

<form>

<input type="radio" name="sex" value="male" /> Male<br />

<input type="radio" name="sex" value="female" /> Female

</form>

**Checkboxes**

<input type="checkbox" /> defines a checkbox. Checkboxes let a user select one or more

options of a limited number of choices.

<form>

<input type="checkbox" name="vehicle" value="Bike" /> I have a bike<br />

<input type="checkbox" name="vehicle" value="Car" /> I have a car

</form>

**Submit Button**

<input type="submit" /> defines a submit button.A submit button is used to send form data to

a server. The data is sent to the page specified in the form's action attribute. The file defined

in the action attribute usually does something with the received input:

<form name="input" action="html\_form\_action.asp" method="get">

Username: <input type="text" name="user" />

<input type="submit" value="Submit" />

</form>

**5. Differentiate Relative URLs with Absolute URL.**

**Absolute URL**

An Absolute URL is independent or free from any relationship. When we use

an absolute URL, it point directly to a file. Hence, an absolute URL specifies the exact

location of a file/directory on the internet. It also follows that each absolute URL is unique,

which means that if two URLs are identical, they point to the same file.

**Example**

http://www.webdevelopersnotes.com/images/email.gif

specifies an image

file

email.gif located in the *images* directory, under www.webdevelopersnotes.com domain

name.

**Relative URL**

A relative URL points to a file/directory in relation to the present file/directory.Partial

internet address which points to a directory or file in relation to the current directory or file.

When creating a link in a website's code, if just a filename is given without any other

modifications, that is an indicator to find that file within the current directory and link to it.

Modifiers can be added to a relative URL which indicate that the file is found in a higher

directory, or code can be added to indicate that the file is in a deeper directory. Relative

URLs are often easier to maintain than absolute URLs.

**Using a Absolute URL in an <IMG>tag**

imgsrc="http://www.webdevelopersnotes.com/images/email.gif"width="..."height="..."/>

**Using a Relative URL in an<IMG>tag**

<img src="../images/email.gif" width="..." height="..." />

**UNIT-II**

**1.What are Literals in javascript?**

Literals are the way you represent values in JavaScript. These are fixed values

that we literally provide in your application source, and are not variables. Examples of

literals include:

42

3.14159

"To be or not to be"

**Integers**

Integers can be expressed in decimal (base 10), hexadecimal (base 16), or octal (base

8) format. A decimal integer literal consists of a sequence of digits (optionally suffixed as

described below) without a leading 0 (zero). An integer can be expressed in octal or

hexadecimal rather than decimal. A leading 0 (zero) on an integer literal means it is in octal;

a leading 0x (or 0X) means hexadecimal. Hexadecimal integers can include digits (0-9) and

the letters a-f and A-F. Octal integers can include only the digits 0-7.

**FloatingPointLiterals**

A floating point literal can have the following parts: a decimal integer, a decimal point

("."), a fraction (another decimal number), an exponent, and a type suffix. The exponent part

is an "e" or "E" followed by an integer, which can be signed (preceded by a "+" or "-"). A

floating point literal must have at least one digit, plus either a decimal point or "e" (or "E").

Some examples of floating point literals are:

3.1415

-3.1E12

.1e12

2E-12

**Boolean Literals**

The boolean type has two literal values: true and false.

**String Literals**

A string literal is zero or more characters enclosed in double (") or single (') quotes.

A string must be delimited by quotes of the same type; that is, either both single quotes or

double quotes. The following are examples of string literals:

"blah"

'blah'

"1234"

"one line \n another line"

**Special Characters**

we can use the following special characters in JavaScript string literals:

**\b** indicates a backspace.

**\f** indicates a a form feed.

**\n** indicates a new line character.

**\r** indicates a carriage return.

**\t** indicates a tab character.

**2.Describe JavaScript Variables and DataTypes.**

**JavaScript DataTypes:**

One of the most fundamental characteristics of a programming language is the set of

data types it supports. These are the type of values that can be represented and

manipulated

in a programming language.JavaScript allows to work with three primitive data types:

Numbers eg. 123, 120.50 etc.

Strings of text e.g. "This text string" etc.

Boolean e.g. true or false.

JavaScript also defines two trivial data types, null and undefined, each of which defines

only

a single value.In addition to these primitive data types, JavaScript supports a composite

data

type known as object.

**JavaScript Variables:**

Like many other programming languages, JavaScript has variables. Variables can

be thought of as named containers. We can place data into these containers and then refer

to the data simply by naming the container. Before we use a variable in a JavaScript

program, we must declare it. Variables are declared with the var keyword as follows:

<script type="text/javascript">

<!--

var money;

var name;

//-->

</script>

We can also declare multiple variables with the same **var** keyword as follows:

script type="text/javascript">

<!--

var money, name;

//-->

</script>

**3.Explain the CSS Box Model in detail**.

All HTML elements can be considered as boxes. In CSS, the term "box model" is

used when talking about design and layout.The CSS box model is essentially a box that

wraps around HTML elements, and it consists of: margins, borders, padding, and the actual

content.The box model allows us to place a border around elements and space elements in

relation to other elements.The image below illustrates the box model:

Explanation of the different parts:

**Margin** - Clears an area around the border. The margin does not have a background

color, it is completely transparent

**Border** - A border that goes around the padding and content. The border is affected

by the background color of the box

**Padding** - Clears an area around the content. The padding is affected by the

background color of the box

**Content** - The content of the box, where text and images appear

**4.Describe the CSS Border Style Properties:**

The border-style property can have from one to four values.

**border-style:dotted solid double dashed;**

o

o

o

top border is dotted

right border is solid

bottom border is double

o

left border is dashed

**border-style:dotted solid double;**

o

o

o

top border is dotted

right and left borders are solid

bottom border is double

**border-style:dotted solid;**

o

o

top and bottom borders are dotted

right and left borders are solid

**border-style:dotted;**

o

all four borders are dotted

**5.Explain CSS Text Properties?**

**Text Color**

**-**The color property is used to set the color of the text. The color can be specified

by:

name – a color name, like “red”

RGB – an RGB value, like “rgb(255,0,0)”

Hex – a hex value, like “#ff0000”

-The default color for a page is defined in the body selector.

**Text Alignment**

-The text-align property is used to set the horizontal alignment of a text.

-Text can be centered, or aligned to the left or right, or justified.

-When text-align is set to “justify”, each line is stretched so that every line has equal

width, and the left and right margins are straight (like in magazines and

newspapers).

**Text Decoration**

-The text-decoration property is used to set or remove decorations from text.

-The text-decoration property is mostly used to remove underlines from links for

design purposes:

**Text Transformation**

-The text-transform property is used to specify uppercase and lowercase letters in a

text.It can be used to turn everything into uppercase or lowercase letters, or

capitalize the first letter of each word.

**Text Indentation**

-The text-indentation property is used to specify the indentation of the first line of

a text.

UNIT-III

1. **Design a web page to detect the visitor’s browser name and version?**

<html>

<body>

<script type="text/javascript">

document.write("Browser CodeName: " + navigator.appCodeName);

document.write("<br /><br />");

document.write("Browser Name: " + navigator.appName);

document.write("<br /><br />");

document.write("Browser Version: " + navigator.appVersion);

document.write("<br /><br />");

document.write("Cookies Enabled: " + navigator.cookieEnabled);

document.write("<br /><br />");

document.write("Platform: " + navigator.platform);

document.write("<br /><br />");

document.write("User-agent header: " + navigator.userAgent);

</script>

</body>

</html>

2. **Describe Cookies in detail.**

Cookies are used

to store an ID for a shopping session with each subsequent

connection, and can look up the current session ID and then use that ID to extract

information about that session from a lookup table on the server machine. So, there would

really be two tables: one that associates session IDs with user tables, and the user tables

themselves that store user-specific data. For example, on the initial request a servlet could do

something like the following:

String sessionID = makeUniqueString();

HashMap sessionInfo = new HashMap();

HashMap globalTable = findTableStoringSessions();

globalTable.put(sessionID, sessionInfo);

Cookie sessionCookie = new Cookie("JSESSIONID", sessionID);

sessionCookie.setPath("/");

response.addCookie(sessionCookie);

In later requests the server could use the global Table hash table to associate a session

id from the jsessionid cookie with the session Info hash table of user-specific data. Using

cookies in this manner is an excellent solution and is the most widely used approach for

session handling. it is nice that servlets have a higher-level API that handles all this plus the

following tedious tasks:

· Extracting the cookie that stores the session identifier from the other

cookies (there may be many cookies, after all).

· Determining when idle sessions have expired, and reclaiming them.

· Associating the hash tables with each request.

· Generating the unique session identifiers.

**3. Explain Sessions in detail?**

Sessions in servlets is straightforward and involves four basic steps.

1. **Accessing the session object associated with the current request.**

**-**Call request.getSession to get an HttpSession object, which is a simple hash table

for

storing user-specific data.

2. **Looking up information associated with a session.**

**-**Call getAttribute on the HttpSession object, cast the return value to the appropriate

type, and check whether the result is null.

3. **Storing information in a session.**

**-**Use setAttribute with a key and a value.

4. **Discarding session data.**

**-**Call removeAttribute to discard a specific value. Call invalidate to discard an entire

session. Call logout to log the client out of the Web server and invalidate all

sessions associated with that user.

**Accessing the Session Object Associated with the Current Request**

Session objects are of type HttpSession, but they are basically just hash tables that

can store arbitrary user objects (each associated with a key). The HttpSession object can be

implemented by calling the getSession method of HttpServletRequest, as below.

HttpSession session = request.getSession();

**4.Explain URL Rewriting?**

**URL Rewriting:**

-URL rewriting is another way to support anonymous session tracking. ie,If the

browser does not support cookies, URL rewriting provides with another session tracking

alternative.

-With URL rewriting, every local URL the user might click on is dynamically

modified, or rewritten, to include extra information.

-The extra information can be in the form of extra path information, added

parameters, or some custom, server-specific URL change.

-Due to the limited space available in rewriting a URL, the extra information is

usually limited to a unique session ID.

**Example:**

For example, the following URLs have been rewritten to pass the session ID 123:

http://server:port/servlet/Rewritten

http://server:port/servlet/Rewritten/123

http://server:port/servlet/Rewritten?sessionid=123

http://server:port/servlet/Rewritten;$sessionid$123

*original*

*extra path information*

*added parameter*

*custom change*

**Advantages:**

1. URL rewriting works for all dynamically created documents servlet.

2. Custom URL rewriting can even work for static documents with the right

server support.

**Disadvantages:**

1.Using extra path information works on all servers, and it works as a target for forms

that use both the GET and POST methods. It doesn't work well if a servlet has to use the

extra path information as true path information.

2.Using an added parameter works on all servers too, but it fails as a target for forms

that use the POST method, and it can cause parameter naming collisions.

3.Using a custom, server-specific change works under all conditions for servers that support

the change. Unfortunately, it doesn't work at all for servers that don't support the change.

**5.Explain about javascript global function?**

**parseInt(x, [radix])**

Parses any string "x" and returns the first valid number (integer) it encounters.

If the first character in the string is not a number, white spaces, or a leading

minus sign, parseInt() returns NaN instead. You can test for NaN using the

isNaN() function below.

parseInt() supports an optional 2nd "radix" parameter to specify the base of

the number to be parsed (valid range is 2-36).

Entering "10" would parse the number in the familiar decimal system, while

"16" would be hexadecimal.

Without this parameter present, parseInt() assumes any number that begins

with "0x" to be radix 16, "0" to be radix 8, and any other number to be radix

10.

Examples:

parseInt("3 chances") //returns 3

parseInt("I have 3 computers") //returns NaN

parseInt("17", 8) //returns 15

**parseFloat(x)**

Parses any string "x" and returns the first valid floating point number it

encounters.

Use this function to extract numbers with decimals, for example.

If the first character in the string is not a number, white spaces, or a leading

minus sign, parseFloat() returns NaN instead. You can test for NaN using the

isNaN() function below.

Example:

parseFloat("-3.98 points") //returns -3.98

**UNIT-IV**

**1. Explain in detail about Microsoft IIS?**

Internet Information Services (IIS) is a web server application and set of feature

extension modules created by Microsoft for use with Microsoft Windows.

It is the world's second most popular web server in terms of overall websites

behind the industry leader Apache HTTP Server.

The protocols supported in IIS include FTP,

FTPS,SMTP,NNTP,

and HTTP/HTTPS.

The different Versions of IIS are

o IIS 1.0, Windows NT 3.51 available as a free add-on

o IIS 2.0, Windows NT 4.0

o IIS 3.0, Windows NT 4.0 Service Pack 3

o IIS 4.0, Windows NT 4.0 Option Pack

o IIS 5.0, Windows 2000

o IIS 5.1, Windows XP Professional, Windows XP Media Center Edition

o IIS 6.0, Windows Server 2003 and Windows XP Professional x64 Edition

o IIS 7.0, Windows Server 2008 and Windows Vista

IIS is not turned on by default when Windows is installed, but it can be selected

from the list of optional features

The first Microsoft web server was a research project at European Microsoft

Windows NT Academic Centre (EMWAC), part of the University of

Edinburgh in Scotland, and was distributed as freeware. However since the

EMWAC server was unable to scale sufficiently to handle the volume of traffic

going to microsoft.com, Microsoft was forced to develop its own web server, IIS

By default IIS 5.1 and lower run websites in-process under the SYSTEM

account a default Windows account with 'superuser' rights.

IIS 6.0 contain a new kernel HTTP stack (http.sys) with a stricter HTTP request

parser and response cache for both static and dynamic content

There are various built-in security features from Microsoft

**2. Explain XML Namespaces in detail?**

XML Namespaces provide a method to avoid element name conflicts.In XML, element

names are defined by the developer. This often results in a conflict when trying to mix XML

documents from different XML applications.This XML carries HTML table information:

<table>

<tr>

<td>Apples</td>

<td>Bananas</td>

</tr>

</table>

This XML carries information about a table (a piece of furniture):

<table>

<name>African Coffee Table</name>

<width>80</width>

<length>120</length>

</table>

If these XML fragments were added together, there would be a name conflict. Both contain a

<table> element, but the elements have different content and meaning.An XML parser will

not know how to handle these differences.

**Solving the Name Conflict Using a Prefix**

Name conflicts in XML can easily be avoided using a name prefix.This XML carries

information about an HTML table, and a piece of furniture:

<h:table>

<h:tr>

<h:td>Apples</h:td>

<h:td>Bananas</h:td>

</h:tr>

</h:table>

<f:table>

<f:name>African Coffee Table</f:name>

<f:width>80</f:width>

<f:length>120</f:length>

</f:table>

In the example above, there will be no conflict because the two <table> elements have

different names.

**3.Explain the XML HTTPRequest object?**

The XMLHttpRequest object is used to exchange data with a server behind the scenes.

The XMLHttpRequest object is **a developer's dream**, because we can:

Update a web page without reloading the page

Request data from a server after the page has loaded

Receive data from a server after the page has loaded

Send data to a server in the background

**Create an XMLHttpRequest Object**

All modern browsers (IE7+, Firefox, Chrome, Safari, and Opera) have a built-in

XMLHttpRequest object.

Syntax for creating an XMLHttpRequest object:

xmlhttp=new XMLHttpRequest();

Old versions of Internet Explorer (IE5 and IE6) uses an ActiveX Object:

xmlhttp=new ActiveXObject("Microsoft.XMLHTTP");

**4.Explain Selecting XML Data: XPath?**

XPath is used to navigate through elements and attributes in an XML document. XPath is a

major element in W3C's XSLT standard - and XQuery and XPointer are both built on XPath

expressions.

**XPath Path Expressions**

XPath uses path expressions to select nodes or node-sets in an XML document. These path

expressions look very much like the expressions you see when you work with a traditional

computer file system.

**XPath Standard Functions**

XPath includes over 100 built-in functions. There are functions for string values, numeric

values, date and time comparison, node and QName manipulation, sequence manipulation,

Boolean values, and more.

**XPATH is a W3C Recommendation**

XPath became a W3C Recommendation 16. November 1999. XPath was designed to be used

by XSLT, XPointer and other XML parsing software.

**XPATH SYNTAX**

XPath uses path expressions to select nodes or node-sets in an XML document. The node is

selected by following a path or steps.

**Predicates**

Predicates are used to find a specific node or a node that contains a specific value.Predicates

are always embedded in square brackets.

**UNIT-V**

**1.Convert an XML file to a DTD file .**

An XML Schema describes the structure of an XML document.The advantages of

XML schema over DTD are

-XML Schemas Support Data Types

-XML Schemas use XML Syntax

-XML Schemas Secure Data Communication

-XML Schemas are Extensible

A Simple XML Document:note.xml

<?xml version="1.0"?>

<note>

<to>Tove</to>

<from>Jani</from>

<heading>Reminder</heading>

<body>Don't forget me this weekend!</body>

</note>

**A DTD File**

The following example is a DTD file called "note.dtd" that defines the elements of the XML

document above ("note.xml"):

<!ELEMENT note (to, from, heading, body)>

<!ELEMENT to (#PCDATA)>

<!ELEMENT from (#PCDATA)>

<!ELEMENT heading (#PCDATA)>

<!ELEMENT body (#PCDATA)>

The first line defines the note element to have four child elements: "to, from, heading, body".

Line 2-5 defines the to, from, heading, body elements to be of type "#PCDATA".

**2.Illustrate a WSDL example?**

This is a simplified fraction of a WSDL document:

<message name="getTermRequest">

<part name="term" type="xs:string"/>

</message>

<message name="getTermResponse">

<part name="value" type="xs:string"/>

</message>

<portType name="glossaryTerms">

<operation name="getTerm">

<input message="getTermRequest"/>

<output message="getTermResponse"/>

</operation>

</portType>

In this example the **<portType>** element defines "glossaryTerms" as the name of a **port**, and

"getTerm" as the name of an **operation**.The "getTerm" operation has an **input message**

called "getTermRequest" and an **output message** called "getTermResponse"The **<message>**

elements define the **parts** of each message and the associated data types.Compared to

traditional programming, glossaryTerms is a function library, "getTerm" is a function with

"getTermRequest" as the input parameter, and getTermResponse as the return parameter.

**3.Write a script to display a drop down menu?**

<form name="form1">

<select name="select1" onChange="displaydesc(document.form1.select1, thetext1,

'textcontainer1')">

<option selected value="http://www.javascriptkit.com">JavaScript Kit

</option>

<option value="http://freewarejava.com">Freewarejava.com</option>

<option value="http://wired.com" target="newwin">Wired News</option>

<option value="http://www.news.com">News.com</option>

<option value="http://www.codingforums.com" target="newwin">Coding

Forums</option>

</select>

<input type="button" value="Go"

onClick="jumptolink(document.form1.select1)"><br>

<span id="textcontainer1" align="left" style="font:italic 13px Arial">

</span>

</form>

**4. Explain XML Schema in detail.**

The following example is an XML Schema file called "note.xsd" that defines the

elements of the XML document above ("note.xml"):

<?xml version="1.0"?>

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="http://www.w3schools.com"

xmlns="http://www.w3schools.com"

elementFormDefault="qualified">

<xs:element name="note">

<xs:complexType>

<xs:sequence>

<xs:element name="to" type="xs:string"/>

<xs:element name="from" type="xs:string"/>

<xs:element name="heading" type="xs:string"/>

<xs:element name="body" type="xs:string"/>

</xs:sequence>

</xs:complexType>

</xs:element>

</xs:schema>

The note element is a **complex type** because it contains other elements. The other elements

(to, from, heading, body) are **simple types** because they do not contain other elements.

**5.Explain the structure of WSDL?**

**The WSDL Document Structure**

A WSDL document describes a web service using these major elements:

**Element**

<types>

<message>

<portType>

<binding>

**Defines**

The data types used by the web service

The messages used by the web service

The operations performed by the web service

The communication protocols used by the web service

A WSDL document can also contain other elements, like extension elements, and a service

element that makes it possible to group together the definitions of several web services in one

single WSDL document.

**WSDL Ports**

The **<portType>** element is the most important WSDL element. It describes a web service,

the operations that can be performed, and the messages that are involved.The <portType>

element can be compared to a function library in a traditional programming language.

**WSDL Messages**

The **<message>** element defines the data elements of an operation.Each message can consist

of one or more parts. The parts can be compared to the parameters of a function call in a

traditional programming language.

**WSDL Types**

The **<types>** element defines the data types that are used by the web service. For maximum

platform neutrality, WSDL uses XML Schema syntax to define data types.

**WSDL Bindings**

The **<binding>** element defines the message format and protocol details for each port.