

B.E.
Fifth Semester Examination, 2009-2010
Web Development (CSE-307-E)

Note : Attempt any five questions. Each question carry equal marks.

Q. 1. (a) What do you mean by Web Server and Web pages ?

Ans. Web Servers : A Web server is a computer program that delivers (serves) content, such as web pages, using the hypertext transfer protocol (HTTP) over the world wide web. The term web server can also refer to the computer or virtual machine running the program.

The primary function of a web server is to deliver web pages, to clients. This means delivery of HTML documents and any additional content that may be included by a document, such as images, style sheet and java scripts.

Web servers are computers on the internet that host websites, serving pages to viewers upon request. This service is referred to as webhosting.

Every web server has a unique address so that other computers connected to the internet know where to find it on the vast network.

Web Page : A web page can be defined as HTML document form

A web page is a document or resource of information that is suitable for the world wide web & can be accessed through a web browser and displayed on a monitor or mobile device. This information is usually in HTML or XHTML format & may provide navigation to other web pages via hypertext links.

Web pages may consist of files of static text stored within the web server's file system (static web pages), or the web server may construct the (x)HTML for each web page when it is requested by a browser.

Q. 1. (b) What is WWW & explain in detail how Web works?

Ans. Web is one of the services that runs on the internet. It is a collection of interconnected documents and other resources, linked by hyperlinks and URLs. In short, the web is an application running on the internet. Viewing a web page on the world wide web (WWW) normally begins either by typing the URL of the page into a web browser, or by following a hyperlink to that page or resource. The web browser then initiates a series of communication messages, behind the scenes, in order to fetch and display.

First, the server-name portion of the URL is resolved into an IP address using the global, distributed internet database known as the domain name system (DNS). This IP address is necessary to contact the web server. The browser then requests the resource by sending an HTTP request to the web server at that particular address. In the case of typical web page, the HTML text of the page is requested first and parsed immediately by the web browser, which then makes additional requests for images and any other files that form parts of the page. Statistics measuring a website's popularity are usually based either on number of 'page views' or associated server 'hits' (file requests) that take place.

While receiving these files from the web server, browsers may progressively render the page onto the screen as specified by its HTML, CSS and other web languages. Any image and other resources are

incorporated to produce the on-screen web page that the user sees. Most web pages will themselves contain hyperlinks to other related pages and perhaps to downloads source documents definitions and other web resources. Such a collection of useful, related resources, interconnected via hypertext links, is what, was dubbed a 'web' of information. Making it available on the internet created what Tim Burners-Lee first called the world wide web in November 1990.

Q. 2. (a) How do we decide which type of style sheets to use ?

Ans. When a browser reads a style sheet, it will format the document according to it. There are three ways of inserting a style sheet :

- (i) External style sheet
- (ii) Embedded or internal style sheet
- (iii) Inline styles

External Style Sheet : Sometimes we need to apply particular style to more than one web document in such cases external style sheets can be used. The central idea in this type of style sheet is that the desired style is stored in one .css file. And the name of that file has to be mentioned in our web pages. Then the styles defined in .css file will be applied to all these web pages. Here is a sample program in which external style sheet is used.

Embedded or Internal Style Sheet : This is also called as document level style sheet. This type style sheet appears only in the head section & in the body section newly defined selector tags are used with the actual contents.

- Advantages :** (i) The document level style sheet helps to decide the layout of the web page.
(ii) Useful when we want to apply the unique style sheet for the web page.

Disadvantage : When we want to apply the style to more than one documents at a time then the document level style sheet is of no use.

Inline Style Sheet : It is a kind of style sheet in which the styles can be applied to XHTML tags

The inline style specification appears within the opening tag and can be applied to the content of that tag.

Advantage : Using inline style sheet we can apply the uniform style on tags for the whole document.

Disadvantage : This is not much suitable for web page designing because the actual contents of the web page are mixed with the presentation.

Q. 2. (b) Explain form handling in Java Script.

Ans. Form Handling in JavaScript : Javascript is used to validate forms, that means checking the proper information are entered to the users in the form fields before submission. It provide the facilities if we use the validation in the forms then it automatically check the your entered number or text. If the entered number or text is right, then we easily give any type of text on numbers. If we entered wrong number or it means not follows the validations then it automatically represent the given messages. We read the messages and we again try the enter number or text. Java script can be used to validate data in HTML forms before sending off the content to a server.

Form data that typically are checked by a Javascript could be :

- (i) Has the user left required fields empty?
- (ii) Has the user entered a valid e-mail address?
- (iii) Has the user entered a valid date?
- (iv) Has the user entered text in a numeric field?

For example, The function below checks if a required field has been left empty. If the required field is blank an alert box alerts a message and the function returns false. If a value is entered, the function returns true.

```
<html>
<head>
<script type = "text/javascript">
function validate_required (field, alert text)
{
with(field)
{
if (value == null || value == " ")
{
alert(alerttext); return false; }
else { return true; } }
}
function validate_form (thisform)
{
with (thisform ) {
if (validate_required (email, "Fill this" ) == false)
{ email.focus(); return false; } }
}
}
</script> </head>
<body>
<form action = "submit.htm" on submit = "return validate_form (this)" method = "post" >
Email:<input type = "text" name = "email">
<input type = "submit" value = "submit" >
</form> </body></html>
```

Q. 3. (a) What do you mean by server side programming and give examples ?

Ans. In case of internet programming server side programming plays very vital role. The server side programming deals with actual handling of data. This data is typically stored in databases. Hence if we develop an application which consists of client program (it may be applet or some script programs), server program (it may be JSP or servlets) and database then it becomes an useful web application.

The typical scenario of such applications can be described as, "User enters the url on some web browser. The browser then generates the HTTP request & sends it to appropriate web server. The browser then generates the HTTP request and sends it to appropriate web server. The web server maps

this request to requested file and as a response to HTTP request, this file is returned to the browser, and then user's demand gets fulfilled". Sometimes this requested file can perform some updates to the central database which might be stored at the server side. Thus, based on request-response pattern the web application runs smoothly.

The popular method of creating served side programs is by means of services.

An example we will consider Apache Web Server's Tomcat.

The programs that take care of processing data on the web server are called server side scripts. Web applications also demand more functionality from the web server. This has triggered the development of tools that enable efficient server side programming such as servlets java server pages (JSP), active server pages (ASP) and so on.

Q. 3. (b) Discuss ASP.

Ans. ASP (Active Server Pages) : ASPs are web pages that contain server-side scripts in addition to the usual mixture of text and HTML (Hyper text markup language) tags-server side scripts are special command you put in web pages that are processed before the pages are sent from your personal web server to the web browser of someone who's visiting your website. When you type a URL in the address box or click a link on a web page, you are asking a web server on a computer somewhere to send a file to the web browser on your computer. If that file is a normal HTML file it looks exactly the same when your web browser receives it as it did before the web server sent it. After receiving the file, your web browser displays its contents as a combination of text images and sounds.

In the case of active server pages, the processor is similar, except there is an extra processing step that take place just before the web server sends the file. Before the web server sends the active server page to the web browser, it runs all server side script contained in the page. Some of the these scripts display the current date, time & other information. Others process information the user has just typed into a form, such as page in the website's guest book.

To distinguish them from the HTML pages, Active server pages are given the ".asp" extension.

Applications of ASP : (i) You can display date, time and other information in different ways.

(ii) You can make a survey form and ask people who visit your site to fill it out, send emails, save the information to a file, etc.

Q. 4. (a) How does the JSP provide connectivity to data bases.

Ans. Accessing Database from JSP Page : Consider the connectivity of JSP with MYSQL

Assumptions : (i) Tomcat web server is installed.

(ii) MYSQL server is installed

(iii) JDK is installed.

Step 1 : Create a database.

```
mysql > CREATE DATABASE = Students;
```

```
create table_
```

```
CREATE TABLE stud_table (roll_no INT(4) NOT NULL AUTO_INCREMENT, name  
VARCHAR (50) NOT NULL, PRIMARY KEY (roll_no);
```

Step 2 : Download MYSQLJDBC connector i.e., mysql_connector_java-3.1.14_bin_jar to c:\your_tomcat_dir\common\lib. Then set CLASSPATH using environment variable.

Step 3 : Restart TOMCAT server Write JSP program in c:\your_tomcat_dir\jsp_examples\DB Demo. i.e., Student Form_jsp page.

Student Form_jsp Page

```
<%@ page language = " java" import = " java.sql.*"%>
<%@ page import = "java.io.*"%>
<% Connection Conn = null;
Result set.rs = null;
Statement st = null;
Class for Name( "com.mysql.jdbc.Driver").newInstance( );
Conn = DriverManager.getConnection( "jdbc : mysql : // localhost
: 3306/students", "root", system");
Out/write ("Connected to mysql !!");
st = Conn.Create Statement( );
if(request.getParameter("action") != null){
string studname = request.getParameter ("studname");
st.executeUpdate ("insert into stud_table(name) values
(' " + Studname + " ' ) ");
rs = st.execute Query ("Select*from stud_table "); %>
<html> <body> <center> <h2> student_list </h2>
<table border = "1"cellspacing = "0" cell padding = "0">
<tr> <td> <b> Roll No </b> </td> <td> <b> student Name </b> </td> </tr>
<% int num = 1; while < rs.next( ) { %>
<tr> <td> <% = num %> </td> <td>
<% = rs.getString("name") %> </td> </tr>
<% num ++; } rs. (10 se( ); st. close( ) )
conn.close( ); %> </table> </center> </body>
</html> <%} else { %>
<html> <head> <title> Student.Registration </title>
<form action = "student form.jsp" method = "post"
name = "entry" on Submit = " return valid (this) ">
<input type = "hidden" value = "list" name = "action" >
<table> <tr> <td> student_Name : </td>
<td> <input type = "text" name = "studname"
size = "50" > </td> </tr>
```

```
<tr> <td> <input type = "submit" value = "Submit">
</td> </tr> </table> </form> </center> </body> </html>
```

Q. 4. (b) Discuss the contribution of Applets and Servlets to Web development.

Ans. Servlets are java programs that can be displayed on a Java enabled web server to enhance and extend the functionality of the web server for example, you can write a servlet to add a messenger service to any bank website. Servlets can also be used to add dynamic content to web pages.

There are following some reasons because of which we say that "servers are used to extend the web server's functionality".

(i) The servlets are very efficient in their performance and get executed in the address space of the belonging web server. There is one more advantage of using servlet at the server side is that the servlets are platform independent.

(ii) The servlets working is based on Request-Response.

(iii) Servlets provide a way to generate the dynamic document.

(iv) Servlets also perform the activity of session tracking.

Applets : An applet is a program written in the java programming language that can be included in HTML page, much in the same way an image is included in a page. When you use a java technology enabled browser to view a page that contains an applet, the applet's code is transferred to your system and executed by the browser's java virtual machine (JVM).

Java Applets can provide web applications with interactive features which cannot be provided by HTML. Since java's byte code is platform-independent, java applets can be executed by browsers running under many platforms including, windows, unix etc.

Q. 5. (a) Explain delivering multimedia over Web Pages.

Ans. The technology of networked media consists of four main components; the server, the network, the client computer, and the web browser and browser plug-ins in use. These components must work in tandem to deliver good web multimedia to the desktop. The bandwidth available between you and the viewer is the latest predictable part of the equation. If your media files are served from a high-end media server, you can expect a high level of performance, you can predict playback performance on desktop machines. But unless you are working with a dedicated network, bandwidth will be hugely variable and difficult to predict in all possible conditions across the internet. Issues regarding bandwidth run from the basic configuration of your connection to the network to the amount of network traffic at any given time.

Given these variables, the parameters for creating and delivering web multimedia are not easily defined. They will vary depending on the scope and content of your project. If you are creating a web site for a corporate intranet, for example, your media can be more technologically demanding than if you send it world wide over the internet. The key is to be well acquainted with the configuration of your client base, study your web server logs so that you know what your typical user's connection speed is, and prepare your multimedia content accordingly.

Q. 5. (b) Differentiate between ASP & JSP.

Ans.

Point of Difference	ASP	JSP
Default Script	VB Script	Java Script
Connectivity	COM-Component Object Model	JDBC
Reusability	Active x models	Javabeans
Distribution	COM/D COM	RMI/EJB
Server	Internet information server and personnel web servers.	Web servers, web logic, TOMCAT, J2EE, JDK etc.
Product Running	Can run only MS products	Can run web server products excluding MS.

ASP (Active Server Pages) : ASPs are web pages that contain server-side scripts in addition to the usual mixture of text and HTML tags.

JSP (Java Server Pages) : JSP is a kind of scripting language in which we can embed JAVA code along with HTML elements.

Q. 6 . Give a brief description of microsoft net technology and discuss how it is better than other technologies ?

Ans. .NET is an object-oriented programming (OOP) model introduced to help developers create internet-based distributed systems. It provides a platform-independent framework that enables developers to quickly build, deploy and manage web-based applications, smart client applications, and XML web services applications. The platform-independence feature enables businesses to quickly integrate their systems, information, and devices, thereby helping users collaborate and communicate effectively.

COM and DNA : Before the development of .NET, COM and DNA technologies were used for application development on Microsoft platforms. COM is Microsoft's framework for developing and supporting program component objects. DNA is a framework that integrates web applications with the n-tier model of development. It is used to develop cost-effective solutions that can meet the demands of the Internet, intranet, global e-commerce and corporate computing.

COM and Deployment : COM components are difficult to deploy. The COM standard was developed for use on systems having limited memory and was designed with a focus on memory sharing between applications. The Dynamic Link Libraries (DLLs) on systems were shared between applications to save memory.

Deployment Issues : The process of sharing DLLs between application resulted in several deployment issues. DLLs had to be registered in the local Windows Registry so that components required to run an application could be located quickly. This resulted in other limitations. For instance, you could not place a COM application on CD-ROM or a network drive and then run it from that location without an installation procedure.

Benefits of .NET: To address the limitations of COM and DNA, Microsoft designed the .NET platform for Internet-based applications. .NET manages the scripting limitations of COM and DCOM

and makes component development an easy task. .NET provides the core technologies for developing Web services. Therefore, it not only benefits individual users but also organizations and developers.

Two major benefits of .NET include side-by-side execution of code and decentralized registration of components.

Benefits of .NET : Side-by-Side Code Execution

.NET supports side-by-side execution of the code that helps resolve versioning problems. This feature solves the problem of overwriting of a shared component by allowing multiple versions of a component to be installed and run simultaneously on the same computer. Therefore .NET developers are not required to maintain backward compatibility because different applications can use different versions of a shared component.

.NET developers can also specify the version and dependencies between different software components. The dependencies are stored with the components in an assembly and this information helps maintain application integrity. Each application can request to use a specific version of the component. At runtime, the stored information is used to load the correct version of the dependency. .NET errors if components are not loaded, missing dependencies are found or tampered files are generated.

Benefits of .NET : Decentralized Registration of Components

.NET also reduces problems that occur because of centralized registration of components in the Registry. It does not use the Registry for component registration. Instead, it stores information about the components with the code and retrieves this information directly from the files at runtime.

When an application instantiates a new component, the application directory and other predefined locations for the component are scanned. When the component is located, information about the component is cached for future use. This decentralized registration of components minimizes the chances of applications interfering with each other. You also do not need to register and unregister components. Therefore, deployment of applications becomes easy and can be done by simply copying files into a directory.

Benefits of .NET to Individual Users : .NET provides an integrated, mobile computing experience to individual users. Data can be integrated from a range of computing hardware, such as laptops, Pocket PCs, Smartphones, and other devices. This enables users to access information easily regardless of their location.

Benefits of .NET to Developers : .NET provides developers with an integrated set of tools for building web services quickly and cost-effectively. Developers can use these tools to create scalable solutions that can work across different computing devices.

Q. 7. (a) What is a relative path name ? Why is it advantageous to use them ?

Ans. A relative path name gives directions that start in your current working directory and lead you up or down through a series of directories to a particular file or directory. By moving down from your current directory, you can access files and directories you own.

To refer to a file in a sub-directory of the current working directory, use the name of the sub-directory followed by a slash (/) and the name of the file. For example, to display a file called rain in a sub-directory called red that is located in the current directory : % cat red/rain

To refer to a file in the parent directory of the current directory, use "../" followed by the name of the file. For example, the pathname "../rowr" would refer to a file named rowr in the parent of the current working directory. Pathname "../../b" would refer to a file named b in the directory two levels above.

Advantage : Relative paths are used much more frequently than absolute paths. Any time you need to send a visitor to another page within your site or include an object from your site on one of the your pages a relative link will work just fine, which form of relative link you should use will depend on how the site is constructed.

Relative links have the advantage if you need to move your entire site to a different domain or anything you don't need to go through the entire code to change the links and can make the coding of the site generally easier.

Q. 7. (b) What do we mean by CGI ?

Ans. CGI : CGI stands for Common Gateway Interface.

CGI is a standard for interfacing external applications with information servers, such as HTTP or web servers. A plain HTML document that the web daemon retrieves is static, which means it exists in a constant state; a text file that does not change. A CGI program, on the other hand, is executed in real-time, so that it can output dynamic information.

Functioning of CGI : CGI functioning comprises of two parts :

- (i) Getting information from the server.
- (ii) Sending documents back to the client.

Getting Information from the Server : Each time a client requests the URL corresponding to your CGI program, the server will execute it in real time. The output of your program will go more or less directly to the client. A common misconception about CGI is that you can send command_line options and arguments to your program such as :

Command % myprog-qa blorf.

CGI uses this command line for other purposes and thus, this is not directly possible. Instead, CGI uses environment variables to send your program its params. The two major environment variables you will use for this purpose are :

- (i) QUERY_STRING
- (ii) PATH_INFO

Sending Documents Back to the Client : CGI program can return a heap of document types. They can send back an image to the client, and HTML document, a plaintext document; or perhaps even an audio clip. They can also return references to other documents. The client must know what kind of document you are sending it so it can present it accordingly. In order for the client to know this, your CGI program must tell the server what type of document it is returning

Q. 8. Write short notes on the following :

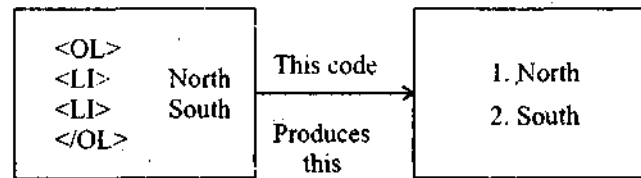
- (i) Cookies
- (ii) Ordered and unordered lists
- (iii) VB SCRIPT

Ans. (i) Cookies : Cookies are some little information that can be left on your computer by the other computer when we access an internet. Generally this information is left on your computer by some

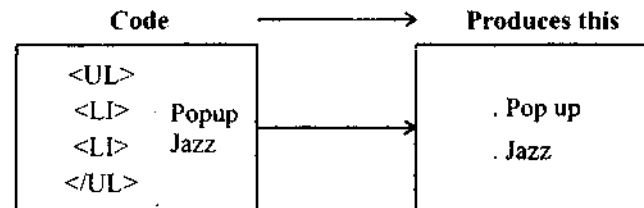
advertising agencies on internet. Using the information stored in the cookies these advertising agencies can keep track of your internet usage for the applications like online purchase system once you enter your personal information such as your name or your email ID then it can be remembered by these systems with the help of cookies.

Sometimes cookies are very much dangerous because by using information from your local disk some malicious data may be passed to you. So it is upto you how to maintain your own privacy security.

(ii) Ordered Lists and Unordered Lists : "Ordered" means that the order of the items in the list. The elements in html are prefixed by a symbol that denotes, their order in the list. By default, Arabic numbers are automatically made by the browser. The beginning and ending tags for an ordered list are `` and ``. The beginning tag for each list item is ``. Each list starts counting at 1. For ex.,



Unordered list is used when the order of items is not significant. Rather than being numbered the items are usually marked with bullets. The beginning and ending tags for unordered list are `` and `` respectively. Each item is identified by a list item tag ``. Example,



(iii) VB Script : VB script is a scripting language. A scripting language is a light weight programming language. VB script is a light version of Microsoft's programming language Visual Basic. When a VB script is inserted into a HTML document, the internet browser will read the HTML and interpret the VB script. The VB script can be executed immediately or at a later event.

In VB script, all variables are of type variant, that can store different types of data.

In VB scripts there are two kinds of procedures :

- (i) The sub procedure and
- (ii) The function procedure.