



REVA
UNIVERSITY

Bengaluru, India

**SCHOOL OF COMPUTING AND
INFORMATION TECHNOLOGY**

Web Applications Lab
B18CS7010

For

Seventh Semester

B. Tech in Computer Science and Engineering

NAME	
SRN	
SEM	
SECTION	
BRANCH	
ACADEMIC YEAR	

CONTENTS

S. No.	Lab Programs	Page No
1	In today's digital world, information dissemination through printed documents consumes lot of time. To overcome this drawback, it is better to adopt digital technology for information dissemination, like e-journals, e-books, e-advertisements, etc. Information dissemination through Internet in the form of web content is essential and convenient option. Design and develop a static web page for an online Book store. The pages should resemble like www.amazon.com. The website should consist of: Home page, Registration & Login, User profile page, Books catalog, Shopping cart, Payment by credit card, and order confirmation.	
2	Write a JavaScript that calculates the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.	
3	Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT SHRINKING" in BLUE color. Then the font size decreases to 5pt.	
4	Clients interact with servers by sending service requests that contain input required to complete the requested task or service. Input required for requested service may be collected through a web page, that acts as an interface between users and the server, in the form of text fields, text areas, radio buttons, push buttons and so on. Hence it is better to instruct help clients to input correct data through web page by displaying appropriate error messages or alerts as and when users supply wrong input using event handlers. To demonstrate this task, design and develop a web page using Javascript, XHTML that	

	collects the SRN (Valid format is: Any letter followed by two digits, followed by two letters then followed by three digits). Include event handler for the form elements that collects information to validate the input. Messages must be produced in the alert windows as and when errors are detected.	
5	Internet or online services works on clients and server model. A client is a web browser through which users make requests, which contain input required, for service from the server to perform tasks. Server is a program running on a dedicated computer. Performance of any service or server depends on its throughput. Server throughput deteriorates when users send more and more invalid requests for service and thus results in wastage of server resources that are very precious. As a solution to this problem design a web page that takes student details such as Name, branch, Semester, University, date of admission, mobile number, email id and check for validity or correctness of the input data by writing a Javascript to validate these fields.	
6	Write the PHP programs to do the following: a) Implement simple calculator operations. b) Find the transpose of a matrix. c) Multiplication of two matrices. d) Addition of two matrices.	
7	Write a PHP program to store current date-time in a COOKIE and display the 'Last visited on' date-time on the web page upon reopening of the same page.	
8	Write a PHP program to store page views count in SESSION, to increment the count on each refresh, and to show the count on web page.	
9	Write a PHP program to sort the student records which are stored in the database using selection sort.	

10	<p>In any business organization, employees keep traveling across different geographical locations and at the same time they want to be connected to their organization's computing resources such as email server, database server, file server, etc. to retrieve information such as sales details, assigning tasks to employees, and upload inspection site details, so on. Using PHP develop a web page that accepts book information such as ISBN number, title, authors, edition and publisher and store information submitted through web page in MySQL database. Design another web page to search for a book based on book title specified by the user and displays the search results with proper headings.</p>	
----	--	--

Introduction

This lab is intended to give the students a sound knowledge in the Web side programming. Before going in to the details of the lab, the pre-requisites are the basic knowledge in HTML, XHTML, CSS, XML, JavaScript, Perl, PHP, Ruby and MySQL.

Basics of HTML: -

Hyper Text Markup Language (HTML) is a markup language developed by the W3C people. This can be used as an interface for working our programs. We submit all our requests in the HTML form. It is basically a markup language which describes how the documents are to be formatted.

HTML has two basic entities, the “Tags” (Formatting commands) and the strings within the tags called as the “Directives”. Most of the tags have the following syntax: - <something> that indicates the beginning of the tag and a </something> that indicates the end of the tag.

NOTE:

- Tags can either be in lower case or upper case, i.e. there is no difference between <html> and <HTML>
- The order in which parameters of the tag are given is not significant since each of these parameters is named.

HTML Essentials

An HTML file should be written in the following format and should be saved with .html or .htm file extension

```
<html>

  <body>

    <head>

      <title> New Page </title>

    </head>

    □TYPE YOUR TEXT HERE□

  </body>

</html>
```

The “*New Page*” title comes on the top of the Browser Window.

Basic HTML Tags: -**To create a text box**

```
<input type=text name=T1 size=20>
```

To create a Normal Button

```
<input type=button name=B4 value=GO>
```

To create a Submit Button

```
<input type=submit name=B1 size=20>
```

To create a Reset Button

```
<input type=reset name=T1 size=20>
```

To create a Radio Button

```
<input type=radio value=V1 checked name=R1>
```

To create a Check box

```
<input type=checkbox name=C1 value=ON >
```

To create a Form

```
<form method=[GET/POST] action=[url]>  
<input type=submit value=Submit name=B1>  
<input type=reset value=Reset name="B2">  
</form>
```

To create a Text Area

```
<textarea rows=2 name=S1 cols=20></textarea>
```

To create a Drop down Menu

```
<select size=1 name=D1></select>
```

To create a Hyper Link

```
<a href=http://localhost: 8080/a.htm>BACK </a>
```

To create a Marquee *(The Marquee tag ensures that the text scrolls horizontally across the screen. It is usually used by Advertisement sites to catch the user's attention. Although they sound and look cool, it is preferred to avoid using too much of these since they can be tiring and confusing to the users eye especially if the scroll speed is set too high)*

```
<marquee align=middle>Type your text here</marquee>
```

To give Background color

```
<body bgcolor=green>...</body>
```

(The basics colours can be given literally here. For a more elaborate set of colours, Hex code of the colours can be given. Refer to the possible ranges of the Hex codes in a HTML Book)

More Miscellaneous Tags: -

- 1) `<h#>..... </h#>` - where '#' is a number ranging from 1-6. This is used to set the text size.
- 2) `<pre>` - **Preformatted text**, ensures that the text appears exactly the way it appears in the HTML code thereby preserving the white spaces as well.
- 3) `
` - Inserts a "New line" character (similar to '\n').
- 4) **To Draw a Horizontal Line (Horizontal Ruler):**

```
<hr size=4 width="50 %">
```

- 5) `< b >` - **Bold**, `< I >` - *Italics*

6) Tables:

```
<table>
```

```
<caption> Your Caption here </caption> [Optional Tag]
```

```
<tr>
```

```
    <th> Row 1, Col 1 </th> [th implies Table Header]
```

```
    <th> Row 2, Col 2 </th>
```

```
</tr>
```

```
<tr>
```

```
    <td> Table Definition here </td>
```

```
<td>.....</td>
```

</tr>

</table>

7) Comments:

<!-- Your Comments here -->

8) Background Images:

<body background = "pathname/abc.gif">

.....

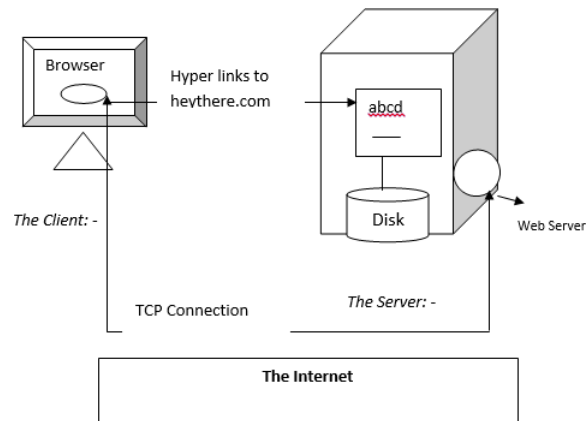
</body>

How does the Web work?

The Web is usually accessed through a browser. When the user types in a URL say, www.revainstitution.org in the Address Bar of the browser, the browser makes a socket (Network) connection to the server www.revainstitution.org. This name is mapped to an IP address which is of the form 1.2.3.4 by making use of a DNS Server. The browser connects to this server using a logical *port 80*, the port that the server OS opens for internet connections. This port is standardized.

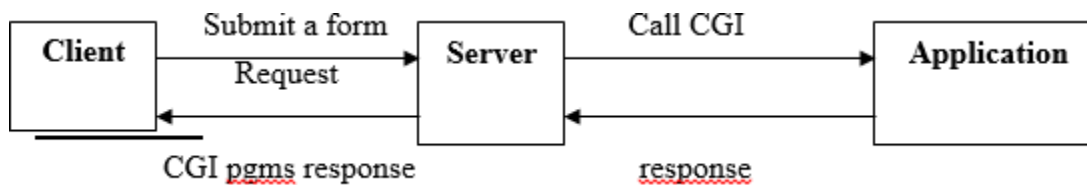
Based on the client request, the server delivers information. The type of data that the server sends back to the client could be a simple plain text (HTML), images, Java Applets (More about Applets later!) etc. this data can be obtained and delivered in three ways.

- *Serving Static Data* – The server does not do any kind of the processing. It merely obtains the data present on its local hard disk and sends it back to the client.
- *Serving Dynamic Data* – The Server does some processing in this case like executing a program and then outputs the result of the program back to the client as a response.
- *Serving Content with Embedded HTML* – Here, an executable code is present with the HTML file. It's not quite static or dynamic.



Basics of CGI: -

CGI stands for *Common Gateway Interface*. It is a part of the web server that can communicate with other programs running on the server. With CGI, the web server can call up a program, while passing user-specific data to the program. The program then processes that data and the server passes the program's response back to the web browser.



Gateways are programs or scripts used to access information that is not directly readable by the client.

Basics of Perl: -

Perl is a platform-independent scripting language that stands for Practical Extraction and Reporting Language. Perl basically originated as a Text Processing Language and was meant to manage and manipulate a database of text files.

Essential Features of Perl: -

- It is an object-oriented language.
- Its syntax is C – like.
- Perl is free format – white space can be scattered about to make the code more readable.

- All statements must end with a ‘;’.
- Variables in Perl do not have to be declared but can be used.
- Built in functions can be invoked with or without parentheses.
- Perl scripts are stored as Text files. When executed, the source text file is first compiled into a “*Byte Code*”, an intermediate form, not text or binary. Perl then interprets the byte code, executing it.
- Anything that comes after a ‘#’ symbol is treated as a Comment except the Interpreter line or the Shebang line.

Basics of PHP-

PHP stands for Hypertext Preprocessor.

Essential Features of Perl: -

- It is a server-side scripting language
- It is used for form handling and database access
- Syntax and semantics of PHP is closely related to syntax and semantics of Perl and Javascript
- Variables in PHP do not have to be declared but can be used.
- PHP supports both procedural and object-oriented programming

Basics of MySQL: -

MySQL is an Open source Standard Query Language (SQL) database that is fast, reliable, easy to use and suitable for applications of any size. MySQL can be integrated into Perl programs by using the Perl *DBI (Database Independent Interface)* module. DBI is an API that allows Perl to connect and query a number of SQL Databases such as MYSQL, Oracle, Sybase etc.

For some of the programs in the Lab course, the MySQL database is to be used. For that, the MySQL Server is to be started. The following steps are to be performed in the same sequence on the Linux shell to start the server and create the database along with the table.

To Start MySQL Server:

```
# mysql
```

```
mysql> create database reva;
```

```
mysql> show databases;
```

```
mysql> use reva;
```

```
mysql> create table employee ( name varchar(25), age int);
```

```
mysql> insert into employee values ("e1",21);
```

```
mysql> insert into employee values ("e2",22);
```

```
mysql> exit;
```

#.....(The MySQL server is now started and a database along with a table called "employee" is ready for use).

Apache Http Server:

The web server we are using here is Apache Http Server. It is freely downloadable from the site www.apache.org.

Once you have downloaded the installer, double click on that and install it in to your system.

Then go to start menu □ programs □ Apache HTTP Server □ Control Apache Server.

Then click on start to start your server. Then open an Internet explorer and type <http://localhost:80/>.

The port number 80 is *optional* in the URL.

If you have successfully installed the server then you will get a screen shown below:



Steps to Execute XHTML Program

- ⇒ Login as root
- ⇒ Open the terminal
- ⇒ cd /var/www/html
- ⇒ vi filename.html
- ⇒ press I (insert mode) and type the program
- ⇒ press Esc shift : wq
- ⇒ chmod 777 filename.html
- ⇒ Open the Mozilla Web browser and type the URL “http://localhost/filename.html”
- ⇒ The output of the program will be displayed.

Steps to Execute XML using XSLT & CSS Program

- ⇒ Open notepad and type the XML program and save the file with **.xml** extension in var/www/html.
- ⇒ Open notepad and type the XSL/CSS program and save the file with **.xsl** extension **for XSLT program & save the file with .css extension for CSS program** in var/www/html.
- ⇒ Open the Mozilla Web browser and type the URL “http://localhost/filename.xml”
- ⇒ The output of the program will be displayed.

Steps to Execute Perl Program

- ⇒ Open notepad and type the XML program and save the file with **.pl** extension in var/www/cgi-bin folder.
- ⇒ Open the Mozilla Web browser and type the URL <http://localhost/cgi-bin/filename.pl>
- ⇒ If you create html file as an interface then store the html file in var/www/html folder and access the URL <http://localhost/filename.html>
- ⇒ The output of the program will be displayed.
- ⇒ Permissions for cgi-bin should be given as **chmod 777 filename.pl**
- ⇒ Errors in the perl file can be known by compiling as **perl filename.pl** in terminal

Steps to Execute PHP Program

- ⇒ Open notepad and type the XML program and save the file with **.php** extension in var/www/html folder.
- ⇒ Open the Mozilla Web browser and type the URL “http://localhost/filename.php”
- ⇒ If you create html file as an interface then store the html file in var/www/html folder and access the URL “http://localhost/filename.html”
- ⇒ The output of the program will be displayed.
- ⇒ Errors in the php file can be known by compiling as **php filename.php** in terminal

Program No. 1

1 Problem Statement

In today's digital world, information dissemination through printed documents consume lot of time. To overcome this drawback it is better to adopt digital technology for information dissemination, like e-journals, e-books, e-advertisements, etc. Information dissemination through Internet in the form of web content is essential and convenient option. Design and develop static web pages for an online Book store. The pages should resemble like www.amazon.com The website should consist of. Home page, Registration & Login, User profile page, Books catalog, Shopping cart, Payment by credit card, and order confirmation.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Get the knowledge on Basic concepts of web programming

3 Procedure

Main.html

```
<html>
<head>
  <title>Main Page</title>
  <style type="text/css">
    a
    {
      color:Black;
      font-size:large;
    }
  </style>
</head>
<body style="background-image: url(BgImg2.jpg); background-repeat: no-repeat; background-size: 100%;">
  <center>
    <h1 style="color:White;">
      Main Page</h1>
    <br />
    <p>
      <b><a href="Home.html">Home</a></b>
    </p>
    <p>
      <b><a href="SignUp.html">Register</a></b>
    </p>
    <p>
      <b><a href="Order.html">Order</a></b>
    </p>
  </center>
</body>
```

Home.html

```

<html>
<head>
  <title>Home</title>
</head>
<body style="background-image: url(cbgimg1.jpg); background-repeat: no-repeat; background-size:
  100%; color:White;">
<center>
  <h1>Welcome to e-Books</h1>
</center>
  <p>Select your book</p>
  <hr />
<center>
  <p>
    <a href="CheckOut.html"></a>
    <a href="CheckOut.html"></a>
    <a href="CheckOut.html"></a>
    <a href="CheckOut.html"></a>
    <a href="CheckOut.html"></a>
  </p>
</center>
<center><a href="MainPage.html">Go to Main page</a></center>
</body>
</html>

```

Checkout.html

```

<html>
<head>
  <title>Checkout</title>
</head>
<body bgcolor="#9395E3">
  <center><h1>Checkout</h1></center>
  <p>Enter Card details</p>
  <hr />
  <table><tr><td> Card No : </td><td><input type="text" /></td></tr>
  <tr><td>Name on Card : </td><td><input type="text" /> </td></tr>
  <tr><td>Expiry date : </td><td> <select >
    <option>2018</option>
    <option>2019</option>
    <option>2020</option>
    <option>2021</option>
  </select> </td></tr>
  <tr><td>CVV No : </td><td> <input type="text" /> </td></tr>
  <tr><td>Amount paid : </td><td> <input type="text" /></td></tr>
  <tr><td><input type="submit" value="Submit" /></td><td><input type="reset" value="reset" />
</td></tr>

```

```
<center>
  <a href="MainPage.html">Go to Main Page</a>
</center>
</body>
</html>
```

Order.html

```
<html>
<head>
  <title>Order</title>
</head>
<body style="background-image: url(cbgimg1.jpg); background-repeat: no-repeat; background-size: 100%;
color:White;">
  <center>
    <h1>
      Order</h1>
    <hr />
    <p>
      Your Order</p>
    <a href="MainPage.html">Go to Main Page</a></center>
</body>
</html>
```

Signup.html

```
<html>
<head>
  <title>Sign up</title>
</head>
<body bgcolor="#F3C497">
<center><h1>Sign up</h1></center>
  <p>Enter your details</p>
  <hr />
  <table>
    <tr><td>First Name :</td><td> <input type="text" /> </td></tr>
    <tr><td>Last Name : </td><td><input type="text" /> </td></tr>
    <tr><td>Email Id :</td><td> <input type="text" /></td></tr>
    <tr><td>User Id : </td><td><input type="text" /> </td></tr></td></tr>
    <tr><td>Password :</td><td> <input type="password" /> </td></tr>
    <tr><td>Phone No : </td><td><input type="text" /> </td></tr>
    <tr><td>Day : </td><td><input type="text" /> </td></tr>
    <tr><td> <input type="submit" value="Submit" /></td><td>
    <input type="reset" value="reset" /> </td></tr></table>
  <center>
    <a href="MainPage.html">Go to Main Page</a>
  </center>
</body>
</html>
```


OUTPUT:

Main.html



Home



Select a Book

Checkout

Enter Card details

[Go to Main Page](#)

Card No :

Name on Card :

Expiry date :

CVV No :

Amount paid :

Register



Sign up

Enter your details

First Name :

Last Name :

Email Id :

User Id :

Password :

Phone No :

Day :

[Go to Main Page](#)

Viva Questions:

1. What are tags?
2. Do all HTML tags come in pair?
3. What is the difference between HTML elements and tags?

Program No. 2

1 Problem Statement

Internet or online services works on clients and server model. A client is a web browser through which users make requests, which contain input required, for service from the server to perform tasks. Server is a program running on a dedicated computer. Performance of any service or server depends on its throughput. Server throughput deteriorates when users send more and more invalid requests for service and thus results in wastage of server resources that are very precious. As a solution to this problem design a web page that takes student details such as Name, branch, Semester, University, date of admission, mobile number, email id and check for validity or correctness of the input data by writing a JavaScript to validate these fields.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Get the knowledge on JavaScript, CSS.

3 Procedure

html

```
<html>
<head>
<title>Student Registration</title>
</head>
<body>
  <div align="Left">
    <h1>Student Registration Portal</h1>
    <form id="xyz">
      <label for="name">Enter name: </label>
      <input type="text" id="name" /><br /><hr />
      <label for="dob">Select date of birth: </label>
      <input type="date" id="dob" /><br /><hr />
      <label for="branch">Enter branch: </label>
      <input type="text" id="branch" /><br /><hr />
      <label for="semester">Select Semester: </label>
      <input type="number" id="semester" max="8" min="0" /><br /><hr />
      <label for="doj">Select date of joining: </label>
      <input type="date" id="doj" /><br /><hr />
      <label for="university">Enter University Name: </label>
      <input type="text" id="university" /><br /><hr />
      <label for="mobile">Enter mobile number: </label>
      <input type="text" id="mobile" /><br /><hr />
      <label for="email_add">Enter email: </label>
      <input type="email" id="email_add" /><br /><hr />
    </form>
    <button onclick="validate()">Submit</button>
  </div>
</body>
</html>
```

```

<p>
    Result: <span id="result"></span>
</p>
</div></body>
<script>

function validate()
{
    var result_text = document.getElementById("result");
    var dob = document.getElementById("dob").value;
    var birth_year = parseInt(dob.substring(0, 4));
    var doj = document.getElementById("doj").value;
    var join_year = parseInt(doj.substring(0,4));
    if (join_year - birth_year < 17)
    {
        result_text.innerHTML = "Too young to have started college!"
        return;
    }
    var branch = document.getElementById("branch").value;
    if (branch.search(/(CSE|ECE|ME|CE|EEE|BCA|MCA)/i) == -1)
    {
        result_text.innerHTML = "Invalid branch!";
        return;
    }
    var mobile_no = document.getElementById("mobile").value;
    if (mobile_no.search(/^[0-9]+$/) == -1 || mobile_no.length != 10)
    {
        result_text.innerHTML = "Invalid mobile number!";
        return;
    }
    var email = document.getElementById("email_add").value;
    if (email.search(/^(([<>()\[\]\\.,;:~\s@"]+(\.[<>()\[\]\\.,;:~\s@"]+)*)(".+")@((\[[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3})|((([a-zA-Z-0-9]+\.)+[a-zA-Z]{2,}))$)/) == -1)
    {
        result_text.innerHTML = "Invalid email ID";
        return;
    }
    alert('Successfully transmitted data!');
    result_text.innerHTML = "Success!";
}
</script>
</html>

```


Student Registration Portal

Enter name:

Select date of birth:

Enter branch:

Select Semester:

Select date of joining:

Enter University Name:

Enter mobile number:

Enter email:

This page says:
Successfully transmitted data!

Student Registration Portal

Enter name:

Select date of birth:

Enter branch:

Select Semester:

Select date of joining:

Enter University Name:

Enter mobile number:

Enter email:

Result: Success!

Viva Questions:

1. What is "Semantic HTML?"
2. How do you insert a copyright symbol on a browser page?
3. Is there any way to keep list elements straight in an html file?

Program No. 3

Problem Statement

Clients interact with servers by sending service requests that contain input required to complete the requested task or service. Input required for requested service may be collected through a web page that acts as an interface between users and the server, in the form of text fields, text areas, radio buttons, and push buttons and so on. Hence it is better to instruct or help clients to input correct data through web page by displaying appropriate error messages or alerts as and when users supply wrong input using event handlers. To demonstrate this task, design and develop a web page using JavaScript, XHTML that collects the SRN (Valid format is: Any letter followed by two digits, followed by two letters then followed by three digits). Include event handler for the form elements that collects information to validate the input. Messages must be produced in the alert windows as and when errors are detected.

Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Acquire PHP Programming knowledge

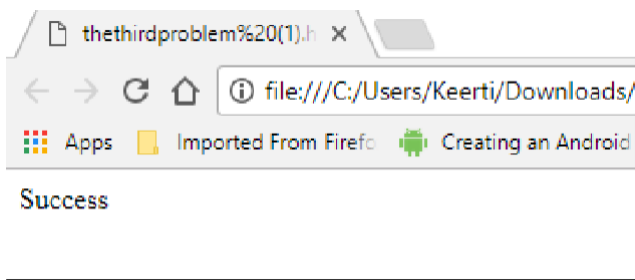
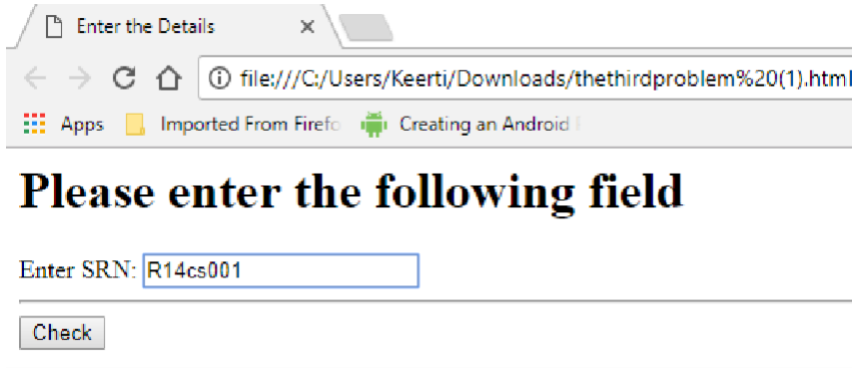
Procedure

html

```
<html>
<head>
<title>Enter the Details</title>
<script>
    function validate()
    {
        var srn = document.getElementById("srn_check").value;
        if (srn.search(/^[A-Z a-z]+[0-9]+[0-9]+[A-Z a-z]+[A-Z a-z]+[0-9]+[0-9]+[0-9]+$/)) == -1 ||
        srn.length != 8)
        {
            document.write("Invalid SRN.....!!!!Enter the SRN properly");
            return;
        }
        document.write("Success");
    }
</script>
</head>
<body>
    <h1>Please enter the following field</h1>
    <form>
        <label>Enter SRN: </label>
```



```
<input type="text" id="srn_check" /><br /><hr />
<input type="submit" value="Check" onclick="validate()" />
</form>
</body>
</html>
```

OUTPUT:**Viva Questions:**

1. Does a hyperlink apply to text only?
2. What are style sheets?
3. What are CSS?

Program No. 4

1**Problem Statement**

Dynamic web content is the information that is retrieved from one or more web servers depending upon what information client have requested for, and composed in response to users' requests. Advanced web technologies play a vital role in storage, processing and retrieval of dynamic web content from web servers. Hence it is important to use advanced web technologies such as XML to improve the efficiency in data retrieval. Create and save XML document for student's information and display the same using cascaded style sheet.

2**Student Learning Outcomes**

After successful completion of this experiment, student shall be able to

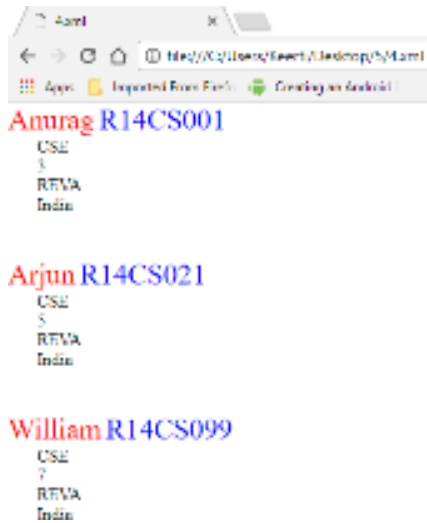
1. Get the knowledge on JavaScript, CSS.

3**Procedure****xml**

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/css" href="4.css"?>
<CATALOG>
<STUDENT>
  <NAME>Anurag</NAME>
  <SRN>R14CS001</SRN>
  <BRANCH>CSE</BRANCH>
  <SEMESTER>3</SEMESTER>
  <UNIVERSITY>REVA</UNIVERSITY>
  <COUNTRY >India</COUNTRY>
</STUDENT>
<STUDENT>
  <NAME>Arjun</NAME>
  <SRN>R14CS021</SRN>
  <BRANCH>CSE</BRANCH>
  <SEMESTER>5</SEMESTER>
  <UNIVERSITY> REVA </UNIVERSITY>
  <COUNTRY> India </COUNTRY>
</STUDENT>
<STUDENT>
  <NAME>William</NAME>
  <SRN>R14CS099</SRN>
  <BRANCH>CSE</BRANCH>
  <SEMESTER>7</SEMESTER>
  <UNIVERSITY> REVA </UNIVERSITY>
  <COUNTRY> India </COUNTRY>
</STUDENT>
</CATALOG>
```

```
CSS
CATALOG
{
    background-color: #ffffff;
    width: 100%;
}
STUDENT
{
    display: block;
    margin-bottom: 30pt;
    margin-left: 0;
}
NAME
{
    color: #FF0000;
    font-size: 20pt;
}
SRN
{
    color: #0000FF;
    font-size: 20pt;
}

BRANCH,SEMESTER,UNIVERSITY,COUNTRY
{
    display: block;
    color: #000000;
    margin-left: 20pt;
}
```

OUTPUT:

Viva Questions:

1. What bullet types are available?
2. How do you make comments without text being picked up by the browser?
3. What is span in HTML?

Program No. 5

1 Problem Statement

Information technology has become part and parcel of humanity to such an extent that people can shop anything online, from anywhere, at any time using an electronic device that has access to Internet. This has brought in the concept of virtual stores which provide products at less cost. To improve sales it is mandatory to organize items catalog based on item name, item price, and manufacturer so on. For such online shopping sites, look and feel is an obvious requirement which can be achieved using CSS & XSLT. Design a document using CSS and XSLT to create a catalog of items for an online electronic shopping.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Get the knowledge of Client server connection and data retrieval
2. Get the knowledge on JavaScript, CSS.

3 Procedure

5a.xml

```
<?xml version = "1.0"?>
<?xml-stylesheet type="text/css" href="5a.css" ?>
<RU>
  <b> Books </b><br />
  <e> Electronics </e><br />
  <s> Stationaries </s><br />
  <c> Cloths</c><br />
  <o> other </o><br />
</RU>
```

5a.css

```
b{ display:block;color:blue;font-style:italic;}
e{ display:block;color:green;font-style:italic;}
s{ display:block;color:red;font-style:italic;}
c{ display:block;color:blue;font-style:italic;}
o{ display:block;color:black;font-style:italic;}
```

5b.xml

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="5b.xsl" ?>
<RU>
  <b> Books </b>
  <e> Electronics </e>
  <s> Stationaries </s>
  <c> Cloths </c>
  <o> Other </o>
</RU>
```

5b.xsl

```
<?xml version = "1.0"?> <xsl:stylesheet version = "1.0" xmlns:xsl = "http://www.w3.org/1999/XSL/
Transform" xmlns="http://www.w3.org/1999/xhtml">
<xsl:template match = "RU">
<html><head><title> Style sheet for 5b.xml </title>
</head><body>
<h2> Shopping </h2>
<span style = "font-style: italic; color: blue;"> Books:
</span> <xsl:value-of select = "b" /> <br />

<span style = "font-style: italic; color: blue;"> Electronics:
</span> <xsl:value-of select = "e" /> <br />

<span style = "font-style: italic; color: blue;"> Stationary:
</span> <xsl:value-of select = "s" /> <br />

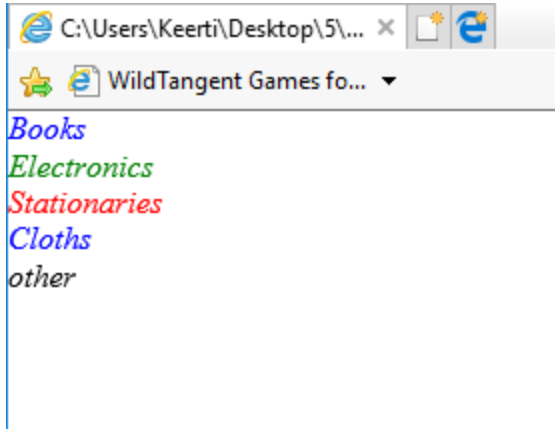
<span style = "font-style: italic; color: blue;"> Clothes:
</span> <xsl:value-of select = "c" /> <br />

<span style = "font-style: italic; color: blue;"> Others:
</span> <xsl:value-of select = "o" /> <br />

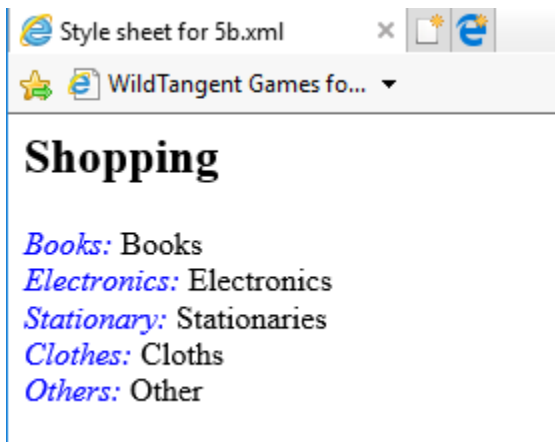
</body>
</html>
</xsl:template>
</xsl:stylesheet>
```

OUTPUT:

Open 5a.xml in browser



Open 5b.xml in browser



Viva Questions:

1. Is CSS case sensitive?
2. What are the limitations of CSS ?
3. What is the difference between an ID selector and CLASS?

Program No. 6

1 Problem Statement

In any business organization, employees keep traveling across different geographical locations and at the same time they want to be connected to their organization's computing resources such as email server, database server, file server, etc. to retrieve information such as sales details, assigning tasks to employees, and upload inspection site details, so on. Using PHP develop a web page that accepts book information such as ISBN number, title, authors, edition and publisher and store information submitted through web page in MySQL database. Design another web page to search for a book based on book title specified by the user and displays the search results with proper headings.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to
1. Acquire PHP Programming knowledge

3 Procedure

book.html

```
<html>
<body>
    <form action="http://localhost/cgi-bin/bookinsert.php" method="post">
        Title:      <input type="text" name="title"/>
        Author:     <input type="text" name="author"/>
        Publisher:  <input type="text" name="publisher"/>
                   <input type="submit"/>
    </form>
</body>
</html>
```

bookinsert.php


```
<html>
<body>
    <?php
        $con = mysql_connect("localhost","root","") or die(mysql_error());
        mysql_select_db ("test") or die(mysql_error());
        $sql="insert into books (title, author, publisher) values ('$_POST[title]', r',
        '$_POST[publisher]')";

        if (!mysql_query($sql,$con))
        {
            die('Error: ' . mysql_error());
        }

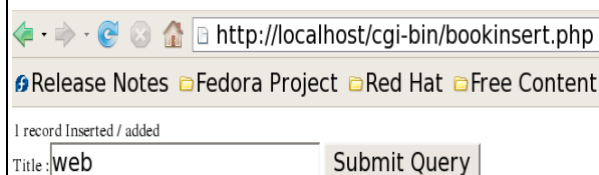
        echo "1 record added";
        mysql_close($con);
    ?>
<form action="bookresult.php" method="post">
```

```
Title: <input type="text" name="title" />
        <input type="submit" />
    </form>
</body>
</html>
bookresult.php
<html>
<body>
    <?php
        $con = mysql_connect("localhost","root","") or die(mysql_error());
        mysql_select_db("test") or die(mysql_error());
        $result = mysql_query("select * from books where title= '$_POST[title]'");
        if(!$result)
        {
            echo "There is no record";
        }
        echo "<table border='1'><tr><th>Title</th><th>Author</th><th>Publisher</th></tr>";
        while($row = mysql_fetch_array($result))
        {
            echo "<tr>";
            echo "<td>" . $row['title'] . "</td>";
            echo "<td>" . $row['author'] . "</td>";
            echo "<td>" . $row['publisher'] . "</td>";
            echo "</tr>";
        }
        echo "</table>";

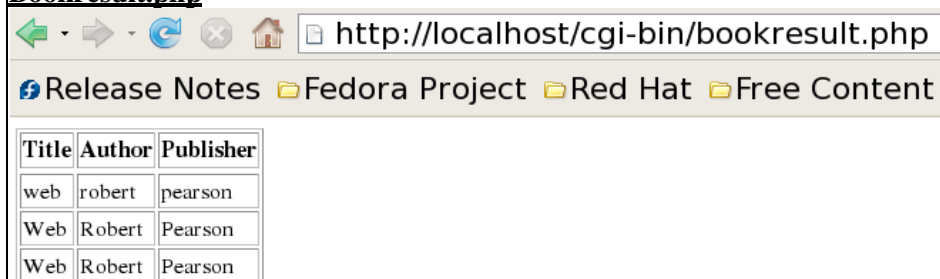
        mysql_close($con);
    ?>
</body>
</html>
```


OUTPUT:**Book.html**

The screenshot shows a web browser window with the address bar displaying `http://localhost/book.html`. The browser has a menu bar with 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Tools', and 'Help'. Below the menu bar is a search bar with a 'Google' button. The main content area contains a navigation bar with links: 'Release Notes', 'Fedora Project', 'Red Hat', and 'Free Content'. Below this is a form with three input fields: 'Title' with the value 'Web', 'Author' with the value 'Robert', and 'Publisher' with the value 'Pearson'. To the right of these fields is a 'Submit Query' button.

Bookinsert.php

The screenshot shows a web browser window with the address bar displaying `http://localhost/cgi-bin/bookinsert.php`. The browser has a menu bar with 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Tools', and 'Help'. Below the menu bar is a search bar with a 'Google' button. The main content area contains a navigation bar with links: 'Release Notes', 'Fedora Project', 'Red Hat', and 'Free Content'. Below this is a form with a single input field labeled 'Title' with the value 'web'. To the right of this field is a 'Submit Query' button.

Bookresult.php

The screenshot shows a web browser window with the address bar displaying `http://localhost/cgi-bin/bookresult.php`. The browser has a menu bar with 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Tools', and 'Help'. Below the menu bar is a search bar with a 'Google' button. The main content area contains a navigation bar with links: 'Release Notes', 'Fedora Project', 'Red Hat', and 'Free Content'. Below this is a table with the following data:

Title	Author	Publisher
web	robert	pearson
Web	Robert	Pearson
Web	Robert	Pearson

Viva Questions:

1. Enumerate the differences between Java and JavaScript?
2. What are global variables? How are these variable declared and what are the problems associated with using them?
3. What do mean by NULL in Javascript?

Program No. 7**1 Problem Statement**

Using computers without graphical user interfaces require the knowledge about syntax of computer commands and programming languages, also this makes users to feel that the use of computers is difficult and cumbersome. This impression of users on computers can be changed by providing good and easy-to-use graphical user interfaces which play vital role in use of computer applications or software without worrying about syntax of programming languages or computer commands. In fact computer software with good and easy-to-use graphical user interfaces will have large number of users. a) Design HTML page that takes UNIX command as input in a text field and submit it to a Perl program that executes given command and display the output on the web page b) Write a Perl program to keep track of the number of visitors to a web page and display the count of visitors with proper headings.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to
1. Develop user-interfaces for Web Applications and Web Services.

3 Procedure

html

```
<html>

<head><title>Unix Command</title></head>

<body>

    <form method=GET action="http://localhost/cgi-bin/7a.pl" >

        <center><br><h1>ENTER UNIX COMMAND TO BE EXECUTED</h1>

        <input type="text" name="msg">

        <input type="submit" value="CLICKME">

    </form>

</body>

</html>
```

7a.pl

```
#!/usr/bin/perl

use CGI:standard';

    print "con tent-type:text/html\n\n";

    $c=param('msg');

    system($c);

exit(0);
```

7b.pl

```
#!/usr/bin/perl

print "content-type:text/html ";

    $count_file="/var/www/cgi-bin/ru.txt";

    if(open(FILE,'<'.$count_file))

    {

        $no_accesses=<FILE>;

        close(FILE);

        if(open(FILE,'>'.$count_file))

        {

            $no_accesses++;

            print FILE $no_accesses;

            close(FILE);

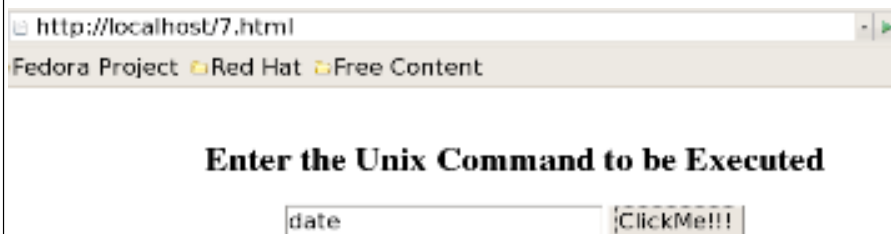
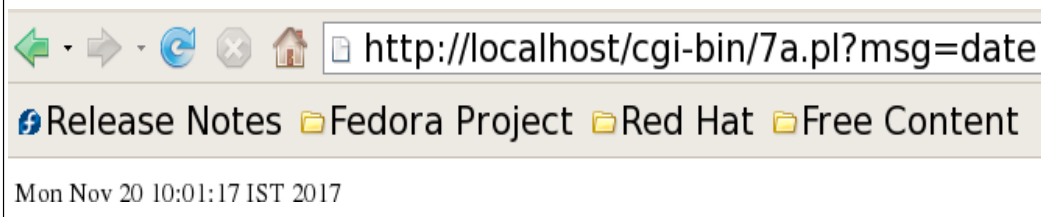
            print "no. of visitors:",$no_accesses;

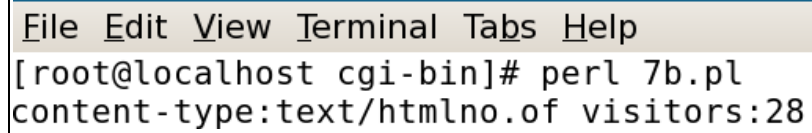
        }

        else

        {
```

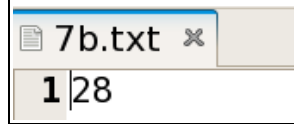
```
        print "[can't write to data file]";  
    }  
}  
else  
{  
    print "[sorry]";  
}  
exit(0);
```

OUTPUT:**Html****7a.pl**

7b.pl

A screenshot of a terminal window with a menu bar containing 'File', 'Edit', 'View', 'Terminal', 'Tabs', and 'Help'. The terminal shows a shell prompt '[root@localhost cgi-bin]#', followed by the command 'perl 7b.pl' and its output 'content-type:text/htmlno.of visitors:28'.

```
File Edit View Terminal Tabs Help
[root@localhost cgi-bin]# perl 7b.pl
content-type:text/htmlno.of visitors:28
```

7b.txt

A screenshot of a text editor window with a tab titled '7b.txt'. The editor shows the number '1' on the first line and '28' on the second line.

```
7b.txt
1
28
```

Viva Questions:

1. Explain what is pop() method in JavaScript?
2. What is the use of type of operator?
3. Define event bubbling?
4. How are event handlers utilized in JavaScript?

Program No. 8

1 Problem Statement

Databases are the storage systems used by most of the business and information technology enterprises as back end. When users generate data using GUI, for ex. personal information, data are sent to back end database for storage and also users can retrieve this data as and when required from the back end (database) to the front GUI. In the real world there are several databases such as Oracle, DB2, MySQL, SQL Server, MS-Access, DBMongo, etc. To illustrate the process of generating data from the front end and store it on back end database then retrieve the available data from the back end database, write a Perl program to read personal information of a person such as first name, last name, age, permanent address and pin code entered by the user into a table created in MySQL. Read the same information from the database and display on the front end.

First Name	Last Name	Age	Address	Pincode
Ram	Kumar	21	REVA University	560064
Anil	Vinay	30	REVA University	560064

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Develop a Dynamic Web Page.

3 Procedure

html

```
<html>
```

```
<body>
```

```
    <form action="http://localhost/cgi-bin/8.pl" method="get">
```

```
        First Name : <input type="text" name="fname"> <br>
```

```
        Last Name : <input type="text" name="lname"> <br>
```

```
        Age : <input type="text" name="age"> <br>
```

```
        Address : <input type="text" name="address"> <br>
```

```
        Pincode : <input type="text" name="pincode"> <br>
```

```
        <input type="submit" value="submit">
```

```
    </form>
```

```
</body>
```

```
</html>
```

8.pl

```
#!/usr/bin/perl
print "content-type:text/html ";

    print "<html><title>Result of the insert operation </title>";
    use CGI ':standard';
    use DBI;
    $dbh=DBI->connect("DBI:mysql:test","root","");
    $fname=param("fname");
    $lname=param("lname");
    $age=param("age");
    $address=param("address");
    $pincode=param("pincode");
    $qh=$dbh->prepare("insert into stud values('$fname','$lname','$age','$address','$pincode')");
    $qh->execute();
    $qh=$dbh->prepare("select * from stud");
    $qh->execute();

    print                                     "<table                                     border
size=1><tr><th>Firstname</th><th>LastName</th><th>Age</th><th>Address</th><th>Pincode</th></tr>"
;
while ( ($fname,$lname,$age,$address,$pincode)=$qh->fetchrow()
{
    print
    "<tr><td>$fname</td><td>$lname</td><td>$age</td><td>$address</td><td>$pincode</td></tr>";
}
print "</table>";
$qh->finish();
$dbh->disconnect();
print"</HTML>";
```

OUTPUT:

A screenshot of a web browser window. The address bar shows 'http://localhost/8.html'. The browser's title bar includes links for 'Release Notes', 'Fedora Project', 'Red Hat', and 'Free Content'. Below the browser window, there is a form with the following fields: 'First Name' with the value 'Johnny', 'Last Name' with the value 'Deep', 'Age' with the value '22', 'Address' with the value 'Bangalore', and 'Phone' with the value '560064'. A 'submit' button is located at the bottom of the form.

ram	kumar	20	bihar	513245
Johnny	Deep	22	Bangalore	560064

Viva Questions:

1. What is the correct and the most two common way to start and finish a PHP block of code?
2. How can PHP and HTML interact?
3. How can PHP and Javascript interact?
4. What does the PHP error 'Parse error in PHP - unexpected T_variable at line x' means?

Program No. 9**1 Problem Statement**

Write a PHP program to store current date-time in a COOKIE and display the 'Last visited on' date-time on the web page upon reopening of the same page.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Acquire PHP Programming knowledge
2. Acquire perl Programming knowledge

3 Procedure**9.html**

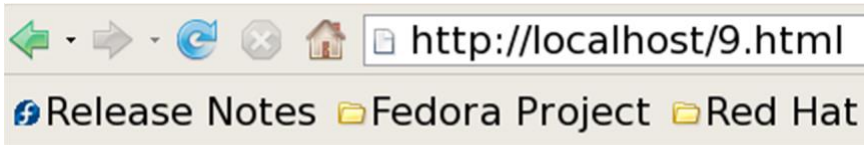
```
<html >
<head> <title>Cookies</title> </head>
<body>
<form action="http://localhost/cgi-bin/9.php" method="post">
<p> The last visited time was <input type="submit" value="Display Now"/> </p>
</form>
</body>
</html>
```

9.php

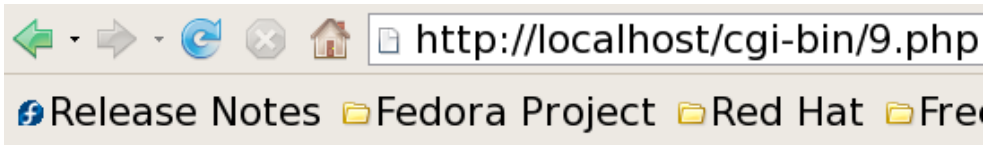
```
<?php
$present_time=date("H:i:s-m/d/y");
$expiry= 60 * 60 *24 *60 + time();
setcookie("Lastvisit",$present_time, $expiry);
if(isset($_COOKIE["Lastvisit"]))
{
echo "Cookie has been set";
echo "The current time of the system is";
echo $present_time;
echo "The Last visited Time and Date";
echo $_COOKIE["Lastvisit"];
}
else
```

```
echo "You've got some old cookies!";
```

```
?>
```

OUTPUT:**9.html**

The last visited time was [Display Now](#)



You have got some old cookies

Viva Questions:

1. Cookies can store which type of data?
2. What are the types of cookies?
3. You need to log data to a database when a user's session times out. Which event should you respond to?
4. What are Session Cookies

Program No. 10**1 Problem Statement**

Write a PHP program to store page views count in SESSION, to increment the count on each refresh, and to show the count on web page.

2 Student Learning Outcomes

After successful completion of this experiment, student shall be able to

1. Acquire PHP Programming knowledge

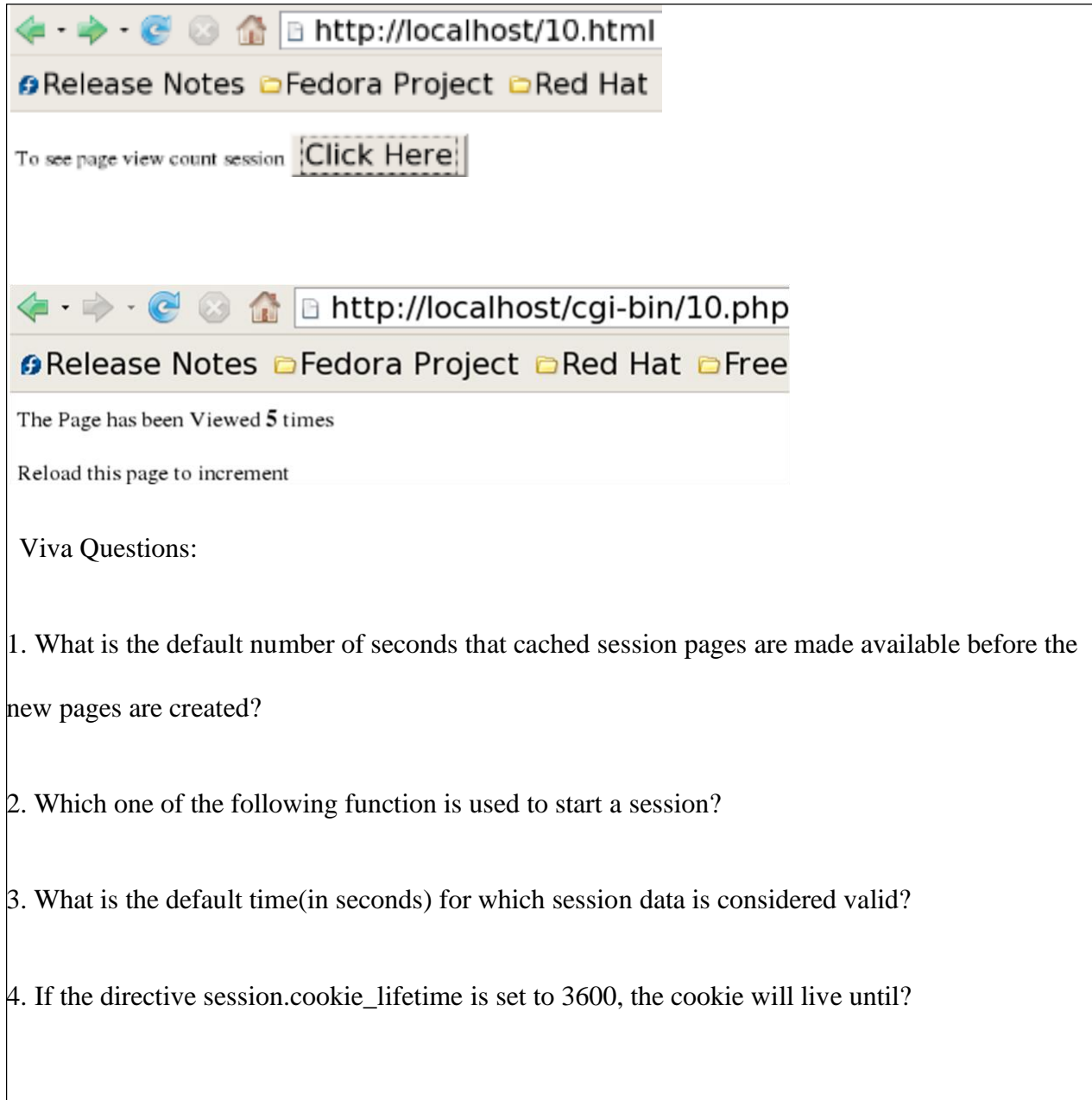
3 Procedure**10.html**

```
<html>
<head> <title>SESSION PROGRAM </title> </head>
<body>
<form action="http://localhost/cgi-bin/10.php" method="post">
<p> To see page views count in session <input type="submit" value="Click Here"/> </p>
</form>
</body>
</html>
```

10.php

```
<?php
session_start();
if (!isset($_SESSION))
{
$_SESSION["count"] = 1;
echo "<p>Counter initialized</p>\n";
}
else { $_SESSION["count"]++; }
echo "<p>This page has been viewed <b>$_SESSION[count]</b> times.</p>".
"<p>reload this page to increment</p>";
?>
```

OUTPUT:**10.html**



The image shows two screenshots of a web browser. The top screenshot shows a browser window with the address bar at `http://localhost/10.html`. The page content includes a link labeled "Click Here" with the text "To see page view count session" above it. The bottom screenshot shows the browser window at `http://localhost/cgi-bin/10.php`. The page content displays "The Page has been Viewed 5 times" and a message "Reload this page to increment".

Viva Questions:

1. What is the default number of seconds that cached session pages are made available before the new pages are created?
2. Which one of the following function is used to start a session?
3. What is the default time(in seconds) for which session data is considered valid?
4. If the directive `session.cookie_lifetime` is set to 3600, the cookie will live until?

Viva Questions & Answers:

What are tags?

1. Content is placed in between HTML tags in order to properly format it. It makes use of the less than symbol (<) and the greater than symbol (>).

Do all HTML tags come in pair?

2. No, there are single HTML tags that does not need a closing tag. Examples are the tag and
 tags.

What is the difference between HTML elements and tags?

3. HTML elements communicate to the browser how to render text. When surrounded by angular brackets <> they form HTML tags. For the most part, tags come in pairs and surround text.

What is “Semantic HTML?”

4. ☐ Semantic HTML is a coding style where the tags embody what the text is meant to convey.
☐ In Semantic HTML, tags like for bold, and <i> </i> for italic should not be used, reason being they just represent formatting, and provide no indication of meaning or structure.
☐ The semantically correct thing to do is use and .
☐ These tags will have the same bold and italic effects, while demonstrating meaning and structure (emphasis in this case).

How do you insert a copyright symbol on a browser page?

5. To insert the copyright symbol, you need to type © or & #169; in an HTML file.

Is there any way to keep list elements straight in an html file?

6. ☐ By using indents, you can keep the list elements straight.
☐ If you indent each subnested list in further than the parent list that contains it, you can at a glance determine the various lists and the elements that it contains.

Does a hyperlink apply to text only?

- 7.

No, hyperlinks can be used on text as well as images. That means you can convert an image into a link that will allow user to link to another page when clicked. Just surround the image within the `< a href="" "> ...< /a>` tag combinations.

What are style sheets?

8. Style sheets enable you to build consistent, transportable, and well-defined style templates. These templates can be linked to several different web pages, making it easy to maintain and change the look and feel of all the web pages within a site.

What bullet types are available?

9. With ordered lists, you can select to use a number of different list types including alphabetical and Roman numerals. The type attribute for unordered lists can be set to disc, square, or circle.

How do you make comments without text being picked up by the browser?

10. Comments are used to explain and clarify code or to prevent code from being recognized by the browser. Comments start with `"*< !--"` and end with `"--> ".< !--` Insert comment here. `-->`

What is span in HTML?

11. The SPAN having notation as

`< SPAN > < /SPAN >`

is used for highlighting text of any color desired, for adding colored text, for adding background image to text. SPAN doesn't cause a line break. It delimits text and it allows styles to be applied to a 'elemental' region, or for the 'elemental' region to be identified, without causing a break in the text flow.

Is CSS case sensitive?

12. ☐ Cascading Style Sheets (CSS) is not case sensitive.
- ☐ However, font families, URLs to images, and other direct references with the style sheet may be.
- ☐ The trick is that if you write a document using an XML declaration and an XHTML doctype, then the CSS class names will be case sensitive for some browsers.

What are the limitations of CSS ?

13. **Limitations are:**

- Ascending by selectors is not possible
- Limitations of vertical control
- No expressions
- No column declaration
- Pseudo-class not controlled by dynamic behavior
- Rules, styles, targeting specific text not possible

What is the difference between an ID selector and CLASS?

14. An ID selector identifies and sets style to only one occurrence of an element, while CLASS can be attached to any number of element

What is Contextual Selector?

15. ☐ Contextual selector addresses specific occurrence of an element.
- ☐ It is a string of individual selectors separated by white space (search pattern), where only the last element in the pattern is addressed providing it matches the specified context

What are Pseudo Classes?

16. Pseudo classes allow you to identify HTML elements on characteristics (as opposed to their name or attributes). The classes are specified using a colon to separate the element name and pseudo class. A good example is the :link and :visited pseudo classes for the HTML A element. Another good example is first-child, which finds an element's first child element.

What does z-index do?

The z-index property specifies the stack order of an element. An element with greater stack order is always in front of an element with a lower stack order. Here is the Example, where using z-index property you can display in front of image.

What is parent-child selector?

17. Parent-child selector is a selector representing the direct descendent of a parent element. Parent-child selectors are created by listing two or more tilde (~) separated selectors.
- BODY ~ P {background: red; color: white}

The P element will be declared the specified style only if it directly descends from the BODY element:

Enumerate the differences between Java and JavaScript?

18. Java is a complete programming language. In contrast, JavaScript is a coded program that can be introduced to HTML pages. These two languages are not at all inter-dependent and are designed for the different intent. Java is an object - oriented programming (OOPS) or structured programming language like C++ or C whereas JavaScript is a client-side scripting language.

What is the use of isNaN function?

19. isNaN function returns true if the argument is not a number otherwise it is false.

What is negative infinity?

20. Negative Infinity is a number in JavaScript which can be derived by dividing negative number by zero.

What are global variables? How are these variable declared and what are the problems associated with using them?

21. Global variables are those that are available throughout the length of the code, that is, these have no scope. The var keyword is used to declare a local variable or object. If the var keyword is omitted, a global variable is declared.

What is a prompt box?

22. A prompt box is a box which allows the user to enter input by providing a text box. Label and box will be provided to enter the text or number.

What is === operator?

23. === is called as strict equality operator which returns true when the two operands are having the same value without any type conversion.

What is called Variable typing in Javascript?

24. Variable typing is used to assign a number to a variable and the same variable can be assigned to a string.

What do mean by NULL in Javascript?

- 25.

The NULL value is used to represent no value or no object. It implies no object or null string, no valid boolean value, no number and no array object.

What is the difference between an alert box and a confirmation box?

26. An alert box displays only one button which is the OK button.
But a Confirmation box displays two buttons namely OK and cancel.

Explain what is pop() method in JavaScript?

27. The pop() method is similar as the shift() method but the difference is that the Shift method works at the start of the array. Also the pop() method take the last element off of the given array and returns it. The array on which is called is then altered.

What are the two basic groups of datatypes in JavaScript?

They are as –

- ☐ Primitive
- ☐ Reference types

What is the use of type of operator?

28. "Typeof" is an operator which is used to return a string description of the type of a variable.

What is the use of blur function?

29. Blur function is used to remove the focus from the specified object.

Explain window.onload and onDocumentReady?

30. The onload function is not run until all the information on the page is loaded. This leads to a substantial delay before any code is executed. onDocumentReady loads the code just after the DOM is loaded. This allows early manipulation of the code.

Define event bubbling?

31. JavaScript allows DOM elements to be nested inside each other. In such a case, if the handler of the child is clicked, the handler of parent will also work as if it were clicked too.

How are event handlers utilized in JavaScript?

32. Events are the actions that result from activities, such as clicking a link or filling a form, by the user. An event handler is required to manage proper execution of all these events. Event

handlers are an extra attribute of the object. This attribute includes event's name and the action taken if the event takes place.

What is the correct and the most two common way to start and finish a PHP block of

33. **code?**

The two most common ways to start and finish a PHP script are:

`<?php [--- PHP code----] ?>` and `<? [--- PHP code ---] ?>`

How can we display the output directly to the browser?

34. To be able to display the output directly to the browser, we have to use the special tags `<?=` and `?>`.

How can PHP and HTML interact?

35. It is possible to generate HTML through PHP scripts, and it is possible to pass pieces of information from HTML to PHP.

What type of operation is needed when passing values through a form or an URL?

36. If we would like to pass values through a form or an URL, then we need to encode and to decode them using `htmlspecialchars()` and `urlencode()`.

How can PHP and Javascript interact?

37. PHP and Javascript cannot directly interact since PHP is a server side language and Javascript is a client-side language. However, we can exchange variables since PHP can generate Javascript code to be executed by the browser and it is possible to pass specific variables back to PHP via the URL.

What is the main difference between `require()` and `require_once()`?

38. `require()`, and `require_once()` perform the same task except that the second function checks if the PHP script is already included or not before executing it.

What does the PHP error 'Parse error in PHP - unexpected T_variable at line x' means?

39. This is a PHP syntax error expressing that a mistake at the line x stops parsing and executing the program.

What is the function `file_get_contents()` useful for?

40. `file_get_contents()` lets reading a file and storing it in a string variable.

How is it possible to know the number of rows returned in the result set?

41. The function `mysqli_num_rows()` returns the number of rows in a result set.

Which function gives us the number of affected entries by a query?

42. `mysqli_affected_rows()` return the number of entries affected by an SQL query.

What is the difference between `mysqli_fetch_object()` and `mysqli_fetch_array()`?

43. The `mysqli_fetch_object()` function collects the first single matching record where `mysqli_fetch_array()` collects all matching records from the table in an array.

How can we access the data sent through the URL with the POST method?

44. To access the data sent this way, you use the `$_POST` array. Imagine you have a form field called 'var' on the form when the user clicks submit to the post form, you can then access the value like this:

```
$_POST["var"];
```

How do I escape data before storing it in the database?

45. The `addslashes` function enables us to escape data before storage into the database.

