DAYANANDASAGARCOLLEGEOFENGINEERING

Department of Computer Science & Engineering

Internet and Web Technologies Laboratory

Course Code: CSL67 Credits: 02 L: P: T: S: 1: 2: 0: 0 CIE Marks:

50

Exam Hours: 03 SEE Marks:

50

Course objectives:

1. To provide an introduction to the theory and practice of web technologies.

- 2. Apply web programming techniques to design, and create web applications.
- 3. Create effective web based programs to develop web based applications using XHTML, PHP, Java script
- 4. Analyze and design an application using ruby on rails.

Course Outcomes: At the end of the course, student will be able to:

CO1	Design and create web pages using XHTML and CSS			
CO2	Design and implement advanced dynamic web pages using JavaScript.			
CO3	Check forms for data entry validation on the server-side			
CO4	Design server-side scripts using PHP.			
CO5	Design and implement a Ruby and Rails application			
CO6	Create and maintain responsive web pages			

Mapping of Course outcomes to Program outcomes:

		PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3		3			2				2
CO ₂	3	3	3		3			2				2
CO3	3	3	3		3			2				2
CO4	3	3	3		3			2				2
CO5	3	3	3		3			2				2
CO6	3	3	3		3			2				2

Design, develop, and implement the following programs in C / C++ and OpenGL

Program	List of Programs	COs

No.		
1	 a. Write an external cascading style sheet to define the font, font color, background and foreground colors and various tag properties. Also use CSS to design the web page with tables. b. Create a simple text editor with pop-up menus using HTML. 	CO1,CO6
2	Develop and demonstrate a XHTML file that includes Javascript script for the following problems: a) Input: A number n obtained using prompt Output: The first n Fibonacci numbers b) Input: A number n obtained using prompt Output: A table of numbers from 1 to n and their squares using alert	CO1
3	Develop and demonstrate, using Javascript script, a XHTML documenthat collects the USN (the valid format is: A digit from 1 to 4 followedby two upper-case characters followed by two digits followed by twoupper-case characters followed by three digits; no embedded spacesallowed) of the user. Event handler must be included for the formelement that collects this information to validate the input. Messages inthe alert windows must be produced when errors are detected. b) Modify the above program to get the current semester also (restricted to be a number from 1 to 8)	CO1
4	Develop and demonstrate, using Javascript script, a XHTML documenthat contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placedover some part of them. When the cursor is placed over the exposed partof any paragraph, it should rise to the top to become completely visible. b) Modify the above document so that when a paragraph is moved from the top stacking position, it returns to its original position rather than to the bottom.	CO1
5	 a) Design an XML document to store information about a student in an Engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Brach, Year of Joining, and email id. Make up sample data for 3 students. Create a CSS style sheet and use itto display the document. b) Create an XSLT style sheet for one student element of the abovedocument and use it to create a display of that element. 	CO3,CO6
6	Develop a simple online shopping application using a javascript	CO2, CO6
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.	CO4
8	Write a PHP program to store page views count in SESSION, toincrement the count on each refresh, and to show the count on web page	CO4
9	Create a XHTML form with Name, Address Line 1, Address Line 2, andE-mail text fields. On submitting, store the values in MySQL	CO1

	table.Retrieve and display the data based on Name.	
10	Build a Rails application to accept book information viz. Accessionnumber, title, authors, edition and publisher from a web page and storethe information in a database and to search for a book with the titlespecified by the user and to display the search results with properheadings.	CO5

Assessment Pattern:

CIE - Continuous Internal Evaluation Laboratory (50 Marks)

Plaamia Catagawy	CIE				
Bloom's Category	Continuous Evaluation	Internal Test	Total		
Marks (Out of 50)	25	25	50		
Remember		5	5		
Understand	5	5	10		
Apply	10	10	20		
Analyze	5	5	10		
Evaluate	5		5		
Create					

SEE –Semester End Examination Laboratory (50 Marks)

Bloom's Category	Test	Quiz (Viva)
Marks (Out of 50)	45	05
Remember	05	
Understand	05	03
Apply	20	
Analyze	10	02
Evaluate	5	
Create		

Programs

a) Write an external cascading style sheet to define the font, font color, background and foreground colors and various tag properties. Also use CSS to design the web page with tables.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"</p>
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<a href="http://www.w3.org/1999/xhtml" xml:lang="en">
<title>LAB Program 1A </title>
k rel="stylesheet" type="text/css" href="1a.css">
</head>
<body bgcolor="lightblue"><center>
<h1>Welcome To Web Programming Laboratory</h1>
</center>
<caption><b>Fruits and Vegetables</b></caption>
\langle ol \rangle
Fruits
     <01>
          Apple
          Banana
          Orange
     Vegetables
     \langle ol \rangle
          Tomato
          Carrot
          Onion
     </01>
SUBJECTLECTURER
Java ProgrammingPraveen Kumar A.G
Computer NetworkM.S patel
Unix System programmingHarish.S
sure you will get a lot of <span class="demo">FUN</span> in Web programming
laboartry
 In this lab we will Learn XHTML,CSS,JavaScript,perl and Php
 XHTML,CSS,JavaScript are used as client side programming
 Perl and Php are use as server side programming 
</body>
</html>
```

b) Create a simple text editor with pop-up menus using HTML.

```
<html>
<head>
<style type="text/css">
h1 {
 text-align: center;
 font:bold 30px Georgia, serif;
 color: white;
 margin: 5px;
h2.head{
 text-align: center;
 font:bold 25px Georgia, serif;
 color: white;
 margin: 0px;
}
h4{
 text-align: center;
 font:bold 20px Georgia, serif;
 color: white;
 margin: 40px;
.button {
 font-size: 1em; /*emphasize*/
 padding: 20px;
 color: white;
 background:blue;
 border: 5px solid red;
 border-radius: 20px 20px 20px 20px;
 text-decoration: none;
 transition: 0.1s;
.button:hover {
 background: green;
.overlay {
 position: fixed;
```

```
top: 0;
 bottom: 0;
 left: 0;
 right: 0;
 background: inline;/*rgba(0, 0, 0, 0.7); /*background on open of popup*/
 transition: 100ms;
 visibility: hidden;
 opacity: 0;
              /*onclick of X opacity to 0*/
.overlay:target {
 visibility: visible;
 opacity: 1;
.popup {
 margin: 70px auto;
 padding: 20px;
 background: #fff; /*white*/
 border-radius: 15px;
 width: 40%;
 position: relative;
 transition: all 5s ease-in-out;
.popup .h2 {
 margin-top: 0;
 color: blue;
 font-family: Tahoma, Arial, sans-serif;
 text-align:center;
.popup .close {
 position: absolute;
 top: 15px;
 right: 30px;
 transition: all 200ms;
 font-size: 30px;
 font-weight: bold;
 text-decoration: none;
 color: black;
.popup .close:hover {
 color: red;
```

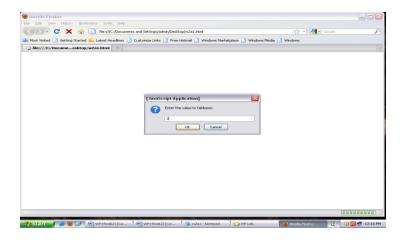
```
.popup .content {
 max-height: 30%;
 overflow: auto;
</style>
<body bgcolor="black">
<br/><br/><br/>
<h1> DAYANANDA SAGAR COLLEGE OF ENGINEERING </h1>
<h2 class="head"> Department of Computer Science & Engineering </h2>
<h4> LAB PROGRAM 1B: Demonstration of Popup Menu </h4>
<br/><br/>
      <center><a class="button" href="#popup1">CLICK</a></center>
<form action="">
<div id="popup1" class="overlay">
      <div class="popup">
             <h2>TEXT Editor</h2>
             <a class="close" href="#">&times;</a><!--default is X(missing)-->
             <div class="content">
                    <textarea rows="5" cols="54""></textarea>
<input type="reset" value="clear"></input>
             </div>
      </div>
</div>
</form>
</body>
</html>
```

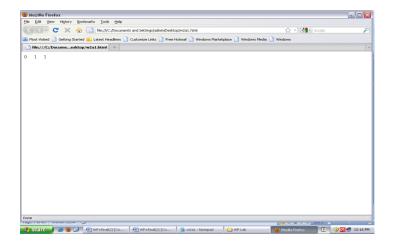
- 2) Develop and demonstrate a XHTML file that includes Javascript script for the following problems:
 - a) Input: A number n obtained using prompt Output: The first n Fibonacci numbers

PW2a.html

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"</pre>
```

```
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<a href="http://www.w3.org/1999/xhtml" xml:lang="en">
      <head>
      <script language="JavaScript">
               function calculation() {
              var x= prompt("Enter the value to fabbonici");
              x=parseInt(x)
       var y1 = 0,i,y2 = 1,res;
if(x < 0 || x == 0)
      document.write("series is not possible");
                     if (x == 1)
                           document.write(y1);
       }
       if(x > 1)
                           document.write(y1," &nbsp &nbsp ",y2);
       for (i = 2; i < x; i++) {
                           res = y1+y2;
                          y1 = y2;
                           y2 = res;
                           document.write(" &nbsp &nbsp ",res);
                           }// for
      </script>
      </head>
<body></html>
```

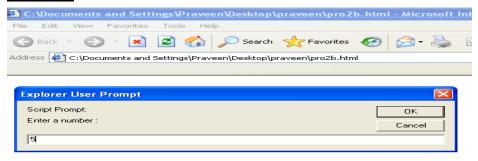




b) Input: A number n obtained using prompt
Output: A table of numbers from 1 to n and their squares using alert

PW2b.html

```
}
    alert(msgstr); }
    else
    alert("no proper input");
</script></body>
</html>
```







Viva Questions:

- i. What is the difference between java and JavaScript?
- ii. Explain window object and its properties.
- iii. Explain the 3 dialogue boxes that can be executed using JavaScript.
- iv. Describe 3 major uses of JavaScript on the client side.
- v. Describe the 2 ways of creating an array object.

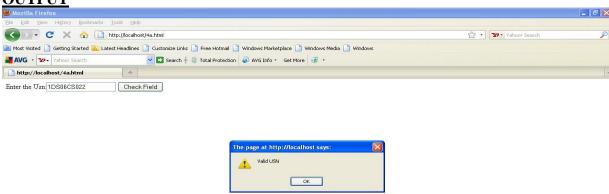
a) Develop and demonstrate, using Javascript script, a XHTML document that collects the USN (the valid format is: A digit from 1 to 4 followed by two upper-case characters followed by two digits followed by two upper-case characters followed by three digits; no embedded spaces allowed) of the user. Event handler must be included for the form

element that collects this information to validate the input. Messages in the alert windows must be produced when errors are detected.

PW3a.html

```
<?xml version = "1.0" encoding = "utf-8" ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
 "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<a href="http://www.w3.org/1999/xhtml">
<head>
       <script type='text/javascript'>
      function validateUsn(elem)
  var alphaExp=/^[1-4][a-zA-Z][a-zA-Z][0-9][0-9][a-zA-Z][a-zA-Z][0-9][0-9]$/;
         var str=elem.value;
         if (!elem.value.match(alphaExp))
      alert("Invalid usn");
      return false;
        else if(str.length!=10)
      alert("Invalid usn");
      return false;
        else
       alert("Valid USN");
      return true;
</script></head>
<body>
<form>
       <label> Enter the Usn:<input type="text" id="usn" /></label>
       <input type = "submit" onclick = "validateUsn(document.getElementById('usn'))"</pre>
```

```
value="Check Field" />
</form>
</body></html>
```

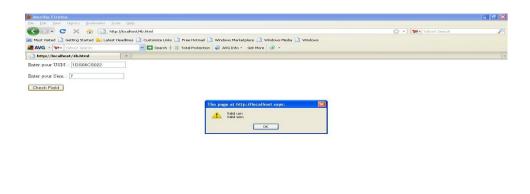




b) Modify the above program to get the current semester also (restricted to be a number from 1 to 8)

PW3b.html

```
alert("Invalid usn\nInvalid sem");
       return false;
}
       else if(!elem1.value.match(alphaExp)&&elem2.value.match(sem))
       alert("Invalid usn\nValid sem");
       return false;
       else if(elem1.value.match(alphaExp)&&!elem2.value.match(sem))
       alert("Valid usn\nInvalid sem");
       return false;
       }
       else
       alert("Valid usn\nValid sem");
       return true;
</script></head>
<body>
<form>
       Enter your USN. : <input type='text' id='usn'/><BR/><br/>
       Enter your Sem. :<input type='text' id='sem'/><BR/><br/>
       <input type='submit' onclick="validateFields(document.getElementById('usn'),</pre>
               document.getElementById('sem'))" value='Check Field' />
</form>
</body></html>
```



Viva Questions:

- i. What is an event handler?
- ii. Explain the different events and their attributes.
- iii. Explain DOM2 event model.
- iv. How do you handle events from Button elements?
- v. How do you validate form inputs?

4)

a) Develop and demonstrate, using Javascript script, a XHTML documentthat contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placedover some part of them. When the cursor is placed over the exposed part of any paragraph, it should rise to the top to become completely visible.

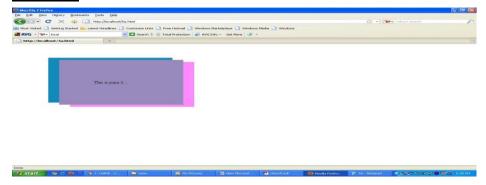
PW4a.html

```
<?xml version = "1.0" encoding = "utf-8" ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns = "http://www.w3.org/1999/xhtml">
<head><script type="text/javascript">
        var top1="stack1";
        function move(curr)
        {
            oldstack=document.getElementById(top1).style;
            newstack=document.getElementById(curr).style;
            oldstack.zIndex="0";
```

```
newstack.zIndex="10";
   top1=curr;
   </script>
   <style type="text/css">
p.one {
   padding:1in;
   position:absolute;
   left:100px;
   top:50px;
   background-color:#128ABC;
   width:150px;
   z-index:5;
     p.two{
   padding:1in;
   position:absolute;
   left:130px;
   top:60px;
   background-color:#998ABC;
   width:150px;
   z-index:3;}
     p.three{
   padding:1in;
   position:absolute;
   left:160px;
   top:70px;
   background-color:#FF8AFF;
   width:150px;
   z-index:1;
       }
     p:hover{
   background-color:#111fff;
   </style>
```

```
</head>
<body>

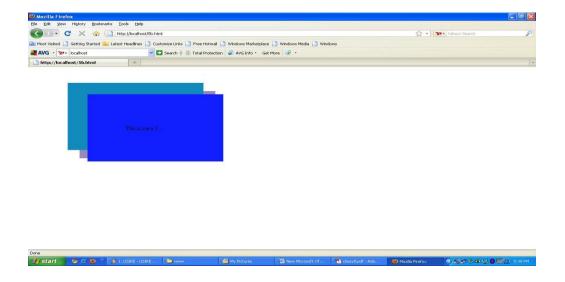
class="one" id="stack1" onmouseover="move('stack1')">
        This is para 1...
      cp class="two" id="stack2" onmouseover="move('stack2')">
        This is para 2...
      cp class="three" id="stack3" onmouseover="move('stack3')">
        This is para 3...
</body></html>
```



b) Modify the above document so that when a paragraph is moved from the top stacking position, it returns to its original position rather than to the bottom.

PW4b.html

```
p.one{
                padding:1in;
               position:absolute;
               left:100px;
                top:50px;
                background-color:#128ABC;
                width:150px;
               z-index:5;
          p.two{
               padding:1in;
               position:absolute;
               left:130px;
                top:60px;
                background-color:#998ABC;
                width:150px;
                z-index:3;
             }
          p.three{
                padding:1in;
               position:absolute;
               left:150px;
                top:70px;
               background-color:#FF8AFF;
                width:150px;
               z-index:1;
          p:hover{
                background-color:#111fff;
     </style>
</head>
<body>
     onmouseout="moveout('stack1')">This is para 1...
     onmouseout="moveout('stack2')">This is para 2...
     onmouseout="moveout('stack3')">This is para 3...
</body>
</html>
OUTPUT
```

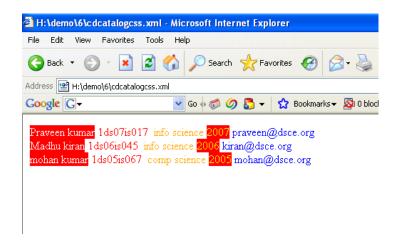


Viva Questions:

- i. Define Dynamic XHTML Document.
- ii. What is CSS-P.
- iii. Describe the possible values of the position property.
- iv. What are the standard values for the visibility property?
- v. What properties control the background and foreground colors of a document.
- 5)
 - a) Design an XML document to store information about a student in an Engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Brach, Year of Joining, and e-mail id. Make up sample data for 3 students. Create a CSS style sheet and use it to display the document.

PW5a.html

```
<year>2007</year>
             <email>praveen@dsce.org</email>
      </student>
      <student>
             <name>Madhu kiran</name>
             <usn>1ds06is045</usn>
             <collegeName>dayanand sagar</collegeName>
             <branch>info science</branch>
             <year>2006</year>
             <email>kiran@dsce.org</email>
      </student>
      <student>
             <name>mohan kumar</name>
             <usn>1ds05is067</usn>
             <collegeName>dayanand sagar</collegeName>
             <branch>comp science
             <year>2005</year>
             <email>mohan@dsce.org</email>
      </student>
</vtu>
mystyle.css
      student{clear:both;float:left;}
      name { background: red; color: white }
      usn { color: red;}
      collegeName { display:none}
      branch {color:orange;text-align: right; }
      year{background: red; color: yellow; }
      email{color: blue;}
```



b) Create an XSLT style sheet for one student element of the abovedocument and use it to create a display of that element.

PW5b.html

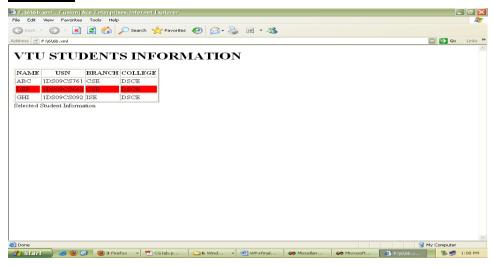
```
<?xml version="1.0" encoding="ISO-8859-1"?>
<?xml-stylesheet type="text/xsl" href="stud.xsl"?>
<vtu>
      <student>
      <name>ABC</name>
      <usn>1DS09CS761</usn>
      <branch>CSE</branch>
      <college>DSCE</college>
      </student>
<br />
      <student>
      <name>DEF</name>
      <usn>1DS09CS662</usn>
      <branch>CSE</branch>
      <college>DSCE</college>
      </student>
<br >
      <student>
      <name>GHI</name>
      <usn>1DS09CS092</usn>
      <branch>ISE
      <college>DSCE</college>
```

```
</student>
</vtu>
stud.xsl
<?xml version="1.0" encoding="ISO-8859-1"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:template match="/">
<html>
<body>
<h1>VTU STUDENTS INFORMATION</h1>
NAMEUSNBRANCHCOLLEGE
     <xsl:for-each select="vtu/student">
     <xsl:choose>
     <xsl:when test="name='DEF"">
     <xsl:value-of select='name' />
     <xsl:value-of select='usn' />
     <xsl:value-of select='branch' />
     <xsl:value-of select='college' />
     </xsl:when>
     <xsl:otherwise>
     <xsl:value-of select='name' />
     <xsl:value-of select='usn' />
     <xsl:value-of select='branch' />
     <xsl:value-of select='college' />
     </xsl:otherwise>
     </xsl:choose>
     </xsl:for-each>
Selected Student Information
</body>
</html>
```

</xsl:template>

</xsl:stylesheet>

OUTPUT



Viva Questions:

- i. How is XML different from HTML?
- ii. What is a document entity?
- iii. What is the purpose of DTD?
- iv. What is an XML parser? What are its primary tasks?
- v. What are the possible parts of an attribute declaration in a DTD?
- vi. Explain local and global declarations in a XML schema.
- vii. How does an XSLT processor use an XSLT style sheet with an XML document?
- 6) Develop a simple online shopping application using a javascript
- 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.

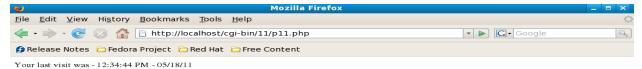
```
<?php
$inTwoMonths = 60 * 60 * 24 * 60 + time();
setcookie('lastVisit', date("h:i:s A - m/d/y"), $inTwoMonths);
if(isset($_COOKIE['lastVisit']))
$visit = $_COOKIE['lastVisit'];
else</pre>
```

echo "You've got some expired cookies!";

echo "Your last visit was - ". \$visit;

?>

OUTPUT



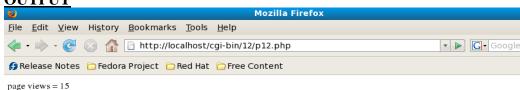
Viva Questions:

- i. What are the variables in php
- ii. What is the difference between single quote and double quoted literal strings in php.
- iii. Explain foreach statement with an example.
- iv. What is coercion?
- v. How we declare cookies and how we expire it.
- 8) Write a PHP program to store page views count in SESSION, toincrement the count on each refresh, and to show the count on web page

```
<?php
session_start();
if(isset($_SESSION['views']))
$_SESSION['views'] = $_SESSION['views']+ 1;
else
$_SESSION['views'] = 1;
echo "page views = ". $_SESSION['views'];</pre>
```

OUTPUT

?>



Viva Questions:

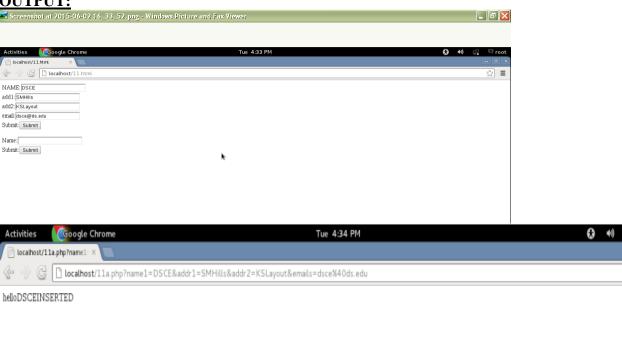
- i. What is a session?
- ii. What is the difference between sessions and cookies?
- iii. Which is the latest version of PHP
- iv. What is the current version of Apache
- 9) Create a XHTML form with Name, Address Line 1, Address Line 2, and E-mail text fields. On submitting, store the values in MySQL table. Retrieve and display the data based on Name.

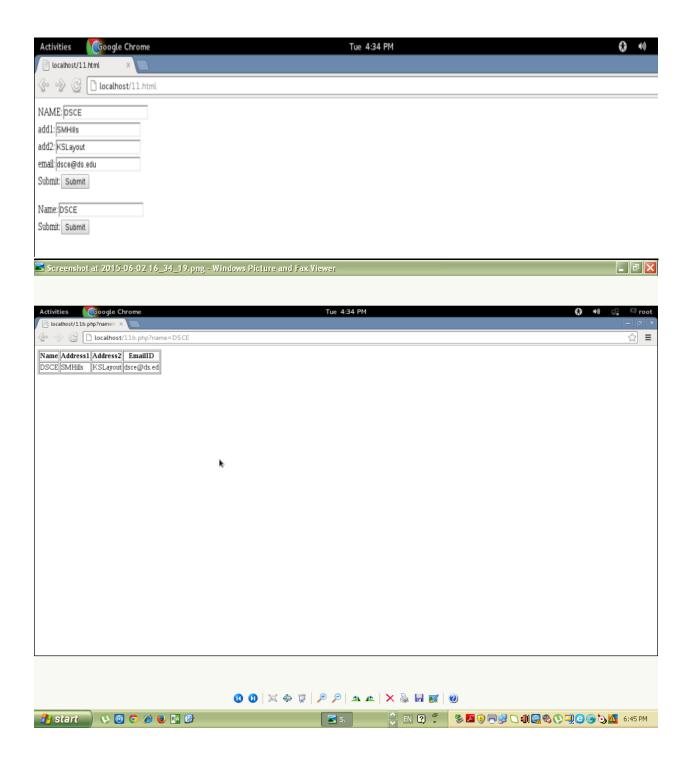
```
9.html
<html>
<body>
       <form action="11a.php">
      NAME:<input type="text" name="name1"><br />
      add1:<input type="text" name="addr1"><br/>
       add2:<input type="text" name="addr2"><br />
      email:<input type="text" name="emails"><br />
      Submit:<input type="submit">
       </form>
       <form action="11b.php">
      Name:<input type="text" name="name"><br/>
      Submit:<input type="submit">
</form></body></html>
<u>9a.php</u>
<?php
      mysql_connect("localhost","root","fedora") or die(mysql_error());
      mysql_select_db("student") or die(mysql_error());
       $name=$_GET['name1'];
       $add1=$_GET['addr1'];
       $add2=$_GET['addr2'];
       $email=$_GET['emails'];
       echo "hello".$name;
       $query="insert into i values('$name', '$add1', '$add2', '$email')";
       mysql_query($query) or die(mysql_error());
      echo "INSERTED":
```

P9b.php

```
<?php
   mysql_connect("localhost","root","fedora") or die(mysql_error());
   mysql_select_db("student") or die(mysql_error());
   $name=$_GET['name'];
   $res=mysql_query("select * from i where n='$name'");
   echo "";
   echo
"NameAddress1Address2EmailID";
     while($arr=mysql_fetch_row($res))
     echo "$arr[0]$arr[1]$arr[2]$arr[3]";
   echo "";
?>
```

OUTPUT:





Viva Questions:

- i. Explain the php functions used to connect to the database.
- ii. Explain the actions of implode and explode functions.
- iii. Explain 3 different ways of sending information from form to the database.
- iv. Explain all the MYSQL-PHP functions

10) Build a Rails application to accept book information viz. Accessionnumber, title, authors, edition and publisher from a web page and storethe information in a database and to search for a book with the titlespecified by the user and to display the search results with properheadings.

Creating Books Database

```
mysql -u root

create database lab10_development;
create database lab10_test;
create database lab10_production;

use lab10_development;

create table books (
    id int not null auto_increment,
    accession_no int not null,
    title varchar(80) not null,
    authors text not null,
    edition decimal(8, 2) not null,
    publisher varchar(80) not null,
    primary key(id)
    );
```

After creating the database and table, quit from mysql.. quit;

Creating lab10 Project

rails -d mysql lab10

Change the directory to lab10

cd lab10

Creating controller, model and view from database

ruby script/generate scaffold Book accession_no:integer title:string authors:text edition:float publisher:string

Starting Rails Server

ruby script/server

Executing in the web browser

http://localhost:3000/books

Creating main (new) controller for searching book

ruby script/generate controller main

Opening main controller program

end

Create two views welcome and result

Create Result view file

```
> notepad app\views\main\result.rhtml
<a href="https://www.eigh.com">html><title> Welcome template for books </title>
<body><form>
     Entered book title is <%= @booktitle %>
Accession No.
     Book Title
     Authors 
     Publishers 
     Edition 
     <% @bookz.each do |bk|
     @id = bk.id
     @accession = bk.accession no;
     @title = bk.title
     @authors = bk.authors
     @publisher = bk.publisher
     @edition = bk.edition %>
     <\td><\\d> @accession \%>
                 <%= @title %>
                 <%= @authors %>
                 <%= @publisher %>
                 <%= @edition %>
     <% end %>
     </form>
</body>
```

</html>

Create Welcome view file

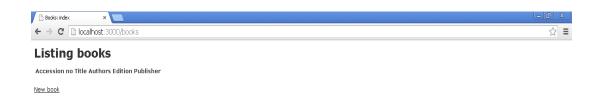
Starting Rails Server

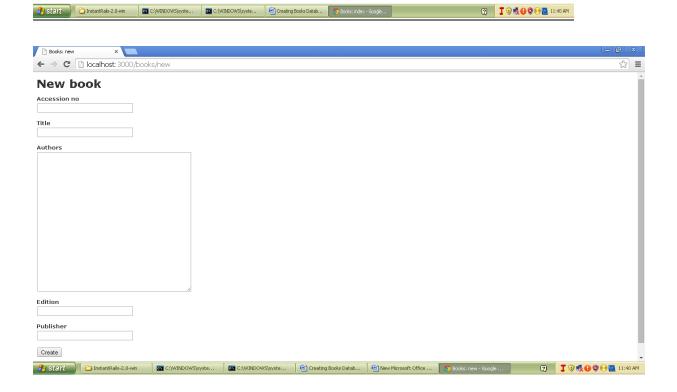
ruby script/server

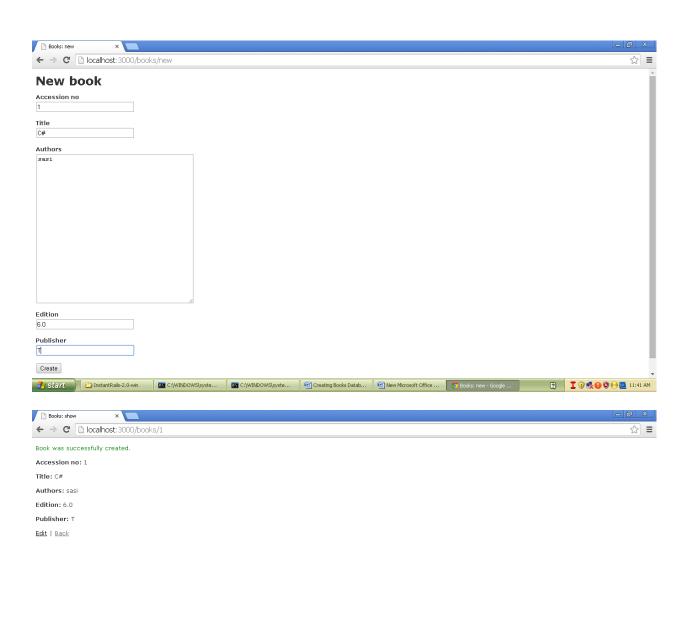
Executing in the web browser

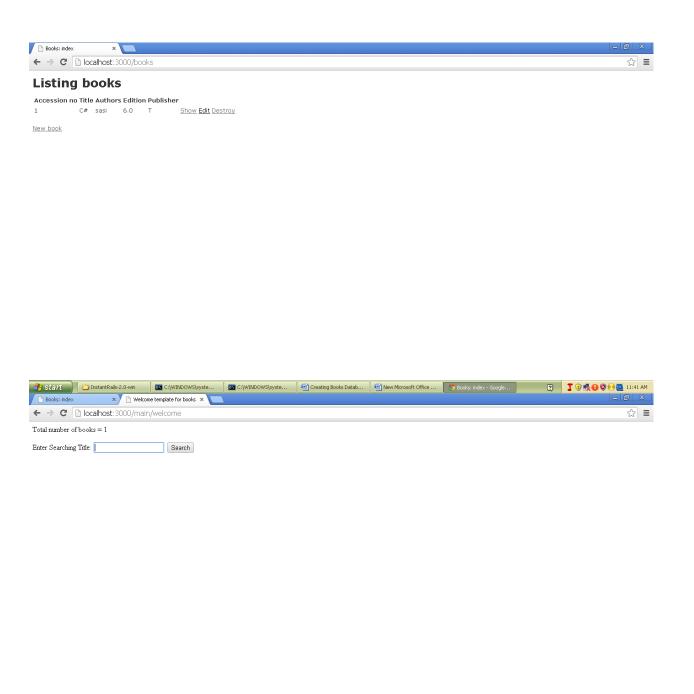
http://localhost:3000/main/welcome Welcome.rhtml Result.rhtml

OUTPUT:









3 Start 🗀 main 🔲 C:(WINDOWS[sys... | 🚾 C:(WINDOWS[sys... | 🚳 Ceating Books Da... | 🚳 New Microsoft Offic... | 🔞 wekcome template... | 👼 main_controller - N... | 7 🔭 📢 😵 🙌 🔠 11:50 AM



Viva Questions:

- i. What is ruby on rails?
- ii. What do you mean by controller?
- iii. What is view?