FINAL PROJECT REPORT

IMPLEMENTATION OF ONLINE EXAMINATION INTERFACE

Department Of Information Technology

National Institute Of Technology - Durgapur

IT-452 DATABASE MANAGEMENT SYSTEMS LABORATORY

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Contents

1. Abstract

This Examination interface aims at providing facility to conduct online examination world wide.

It saves time as it allows number of students to give the exam at a time and displays the results as the test gets over, so there is no need to wait for the result. It is automatically generated by the server. It also thereby helps in saving resources- both human and natural. User can register, log in and give the test with his specific id, and can see the results as well.

This application uses HTML,PHP,Javascript as front-end and My-SQL as back-end on the Apache Server Framework and supports HTTP protocol with English Language.

2. The Proposed System

This automated system consists of primarily two parts :-
    a. The Frontend Webpage
    b. The Backend Database

The application consists of an initial Login screen which asks for id and password to allow access to the test. For new students, there is an option for Signing Up by giving their Details.

       After Sign-Up, the Details are stored in the Database managed by My-SQL. The Password is stored in "SHA1" Encryption Format, thereby adding to the security. Each time the student tries to Login the SHA1 equivalent of the enterd password is matched with that of the corresponding user-id in the Database, which if successful is allowed to continue to the Welcome Screen.

       The Welcome Screen has Provisions For Log-Out as well as giving the Test. If the option for the Test is selected, the user is directed to the Questionnare which is connected to the Question Generator Database, from where random Questions are generated using random function. This page also has an embedded Javascript code which maintains a timer, and redirects to the results page as soon as the time gets expired. The results are calulated comparing the input fom user to the answer stored in the database. The Score is stored by a Server-side Counter which displays the results. The result is then stored in the Results Database, where the track of attempted and correct questions are kept. Then the User gets the option to retry the test or to log-out from the session.

■ The system of logging in/out of his/her account by user is handled by session variables in PHP. If the validation is successful, the value of the variable is changed to the user-id, thereby making the user log in to the examination interface. As soon as he logs out, the session expires. The portion of the code performing the above function is given below:-

```php
<?php
session_start();
$user_id = $_POST[userid];
$pass = sha1($_POST[pass]);
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
    die('<center><br><br><br>Error in connecting to
Server<center> '.mysql_error());
    }
mysql_select_db("userdata",$conn);
$query = "select count(*) from user where
user_id='$user_id' and password='$pass'";
$res = mysql_query($query,$conn);//gives resource id of
query
```

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```php
$check = mysql_fetch_array($res);//fetches result array
of argument
if($check['count(*)'] == 1)//returns argument of array
{
header( 'Location: http://localhost/openguru/welcome.php'
);
$_SESSION['login'] = 1;
}
else
{
header( 'Location: http://localhost/openguru/index.php?
msg=login_error' );
$_SESSION['login'] = 0;
}
?>
```

- The portion of script implementing the timer is given by:-

```html
<script language="JavaScript">
var time = null
function move() {
document.test.submit();
}
</script><body background="web-background1.jpg"
text="white" onload="timer=setTimeout('move()',60000)">
```

- The portion of the code calculating the score of the user is:-

```php
<?php
session_start();
if($_SESSION['login'] != 1)
{
     header( 'Location:
http://localhost/openguru/index.php' );
     }
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
     die('<center><br><br><br>Error in connecting to
Server<center>'.mysql_error());
     }
mysql_select_db("userdata",$conn);
$i = $_POST[i];
$start = $i + 1;
$end = $start + 10;
$query = "select * from generator";
```

```php
$res = mysql_query($query);
$score = 0;
while($start < $end)
{
     $ans = mysql_result($res,$start-1,"ans");
     $test = $_POST[$start];
     $count = $start - $i;
     if(strcmp($test,$ans))
     {
          echo "$count) Wrong Answer: Right answer
is $ans.<img src='wrong.png'><br><br>";
     }
     else
     {
          echo "$count) Correct Answer: You answered
$test.<img src='correct.png'><br><br>";
          $score++;
     }
     $start++;
     }
echo "Final score is $score out of 10<br><br>";
mysql_close($conn);
?>
```

3. Database Tables

User-Schema :-

Field	Type	Null	Key	Default	Extra
user_id	varchar(16)	NO	PRI		
user_name	varchar(31)	NO			
password	char(40)	NO			

Question-Generator Schema :-

Field	Type	Null	Key	Default	Extra
qno	int(11)	NO	PRI		
question	varchar(150)	NO			
opt1	varchar(100)	NO			
opt2	varchar(100)	NO			
opt3	varchar(100)	NO			
opt4	varchar(100)	NO			
ans	varchar(100)	NO			

Result Schema :-

Field	Type	Null	Key	Default	Extra
id	varchar(16)	NO	MUL	NULL	
access	int(4)	YES		0	
score	int(4)	YES		0	

4. Data-Flow Diagram
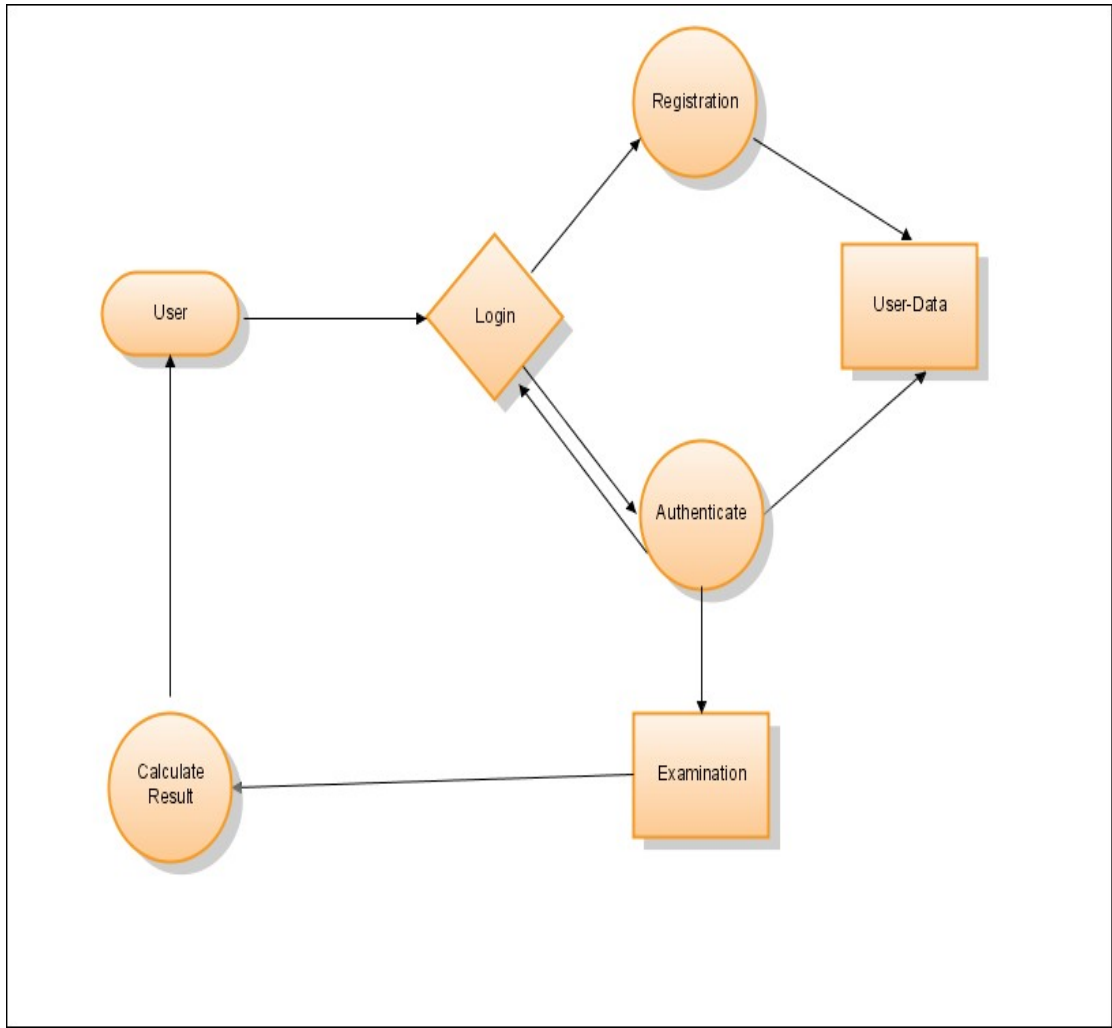
5. Entity-Relationship Diagram
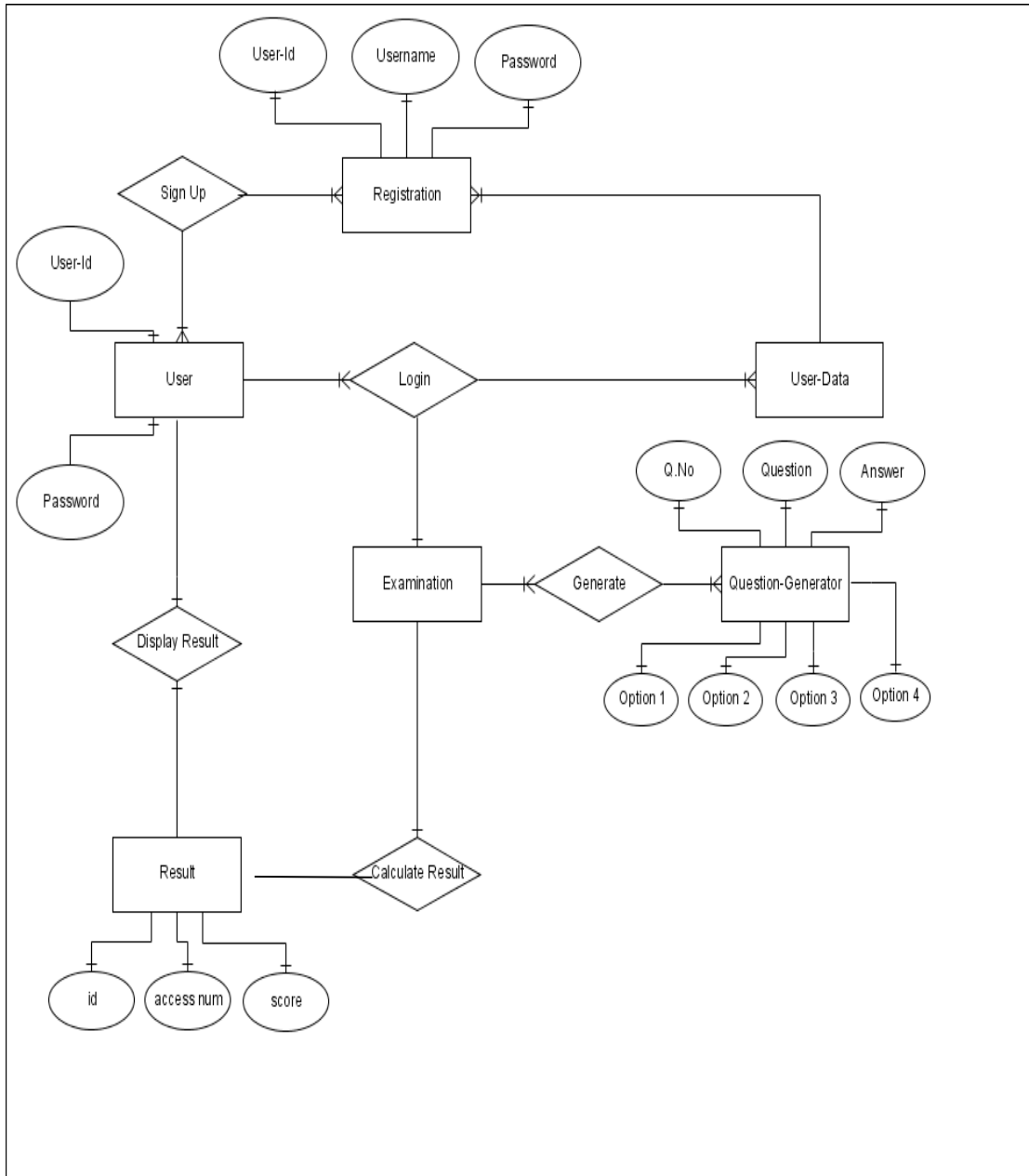
6. Screenshots

Sign-Up Page :-

Login Page :-

Welcome Page :-

Examination-Interface Page :-
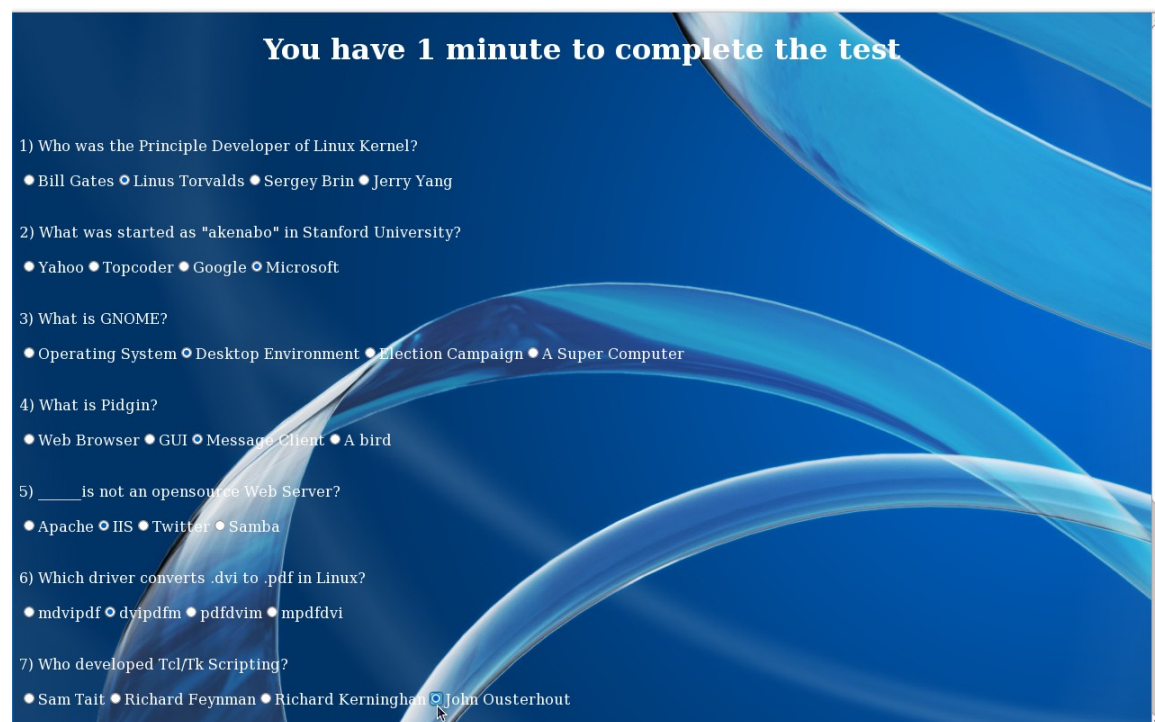
Results Page :-

Login Page :-

7. Conclusion

This Online Examination System developed using Javascript, HTML, PHP and My-SQL fulfills the basic objectives of the system for which it has been developed. The system has reached a steady state as far as the basic framework is concerned. The system is operated at a high level of efficiency and its advantage is quite understood.

Future Prospects:- Also if time and resource constraints are eliminated, this system can be adapted to a full-fledged Knowledge Portal, wherein a personalized environment for each user who are a part of it can be created.

8. Appendix - code

- **index.php** -

```
<html>
<head>
<title>Login Screen</title>
<link rel="shortcut icon" href="blue.jpeg">
</head>
<?php
session_start();
if($_SESSION['login'] == 1)
{
        header( 'Location: http://localhost/openguru/welcome.php' );
        }
?>
<body background="bg.jpg" >
<br><br><br><br><br><br><br><br>
<center>
<table border=2 bordercolor=blue>
<caption><h3><font color="blue">User Login
Information</font></h3></caption>
<tr><td><form action="validate.php" method="POST">
<br><label>Username:</label> <input type=text maxlength="15"
name="userid" autocomplete=off></input><font color=green size=1>
Maximum 15 characters</font> <br><br>
<label>Password:</label>  <input type=password
name="pass"></input><font color=red size=1>  Between 6-15
characters</font><br><br>
           &nb
sp;   
           &nb
sp;  <input type=submit value=Go>
   <input type=reset value=Clear>   
<a href="signup.php"><font size=1>Sign Up</font></a>
</form></td></tr></table>
<br><br>
<?php echo date("l, dS F Y, h:i:s A");?>
<br><br><a href='javascript:onClick= alert("An opensource welfare
project")'><img src="cooltext415028195.png"
onmouseover="this.src='cooltext415028195MouseOver.png';"
onmouseout="this.src='cooltext415028195.png';" /></a><br><br><br>
<footer><address>Tushar&copy;2009
<a href=mailto:2shar007@gmail.com">Contact Us</a>
</address> </footer>
</center>
</body>
</html>
```
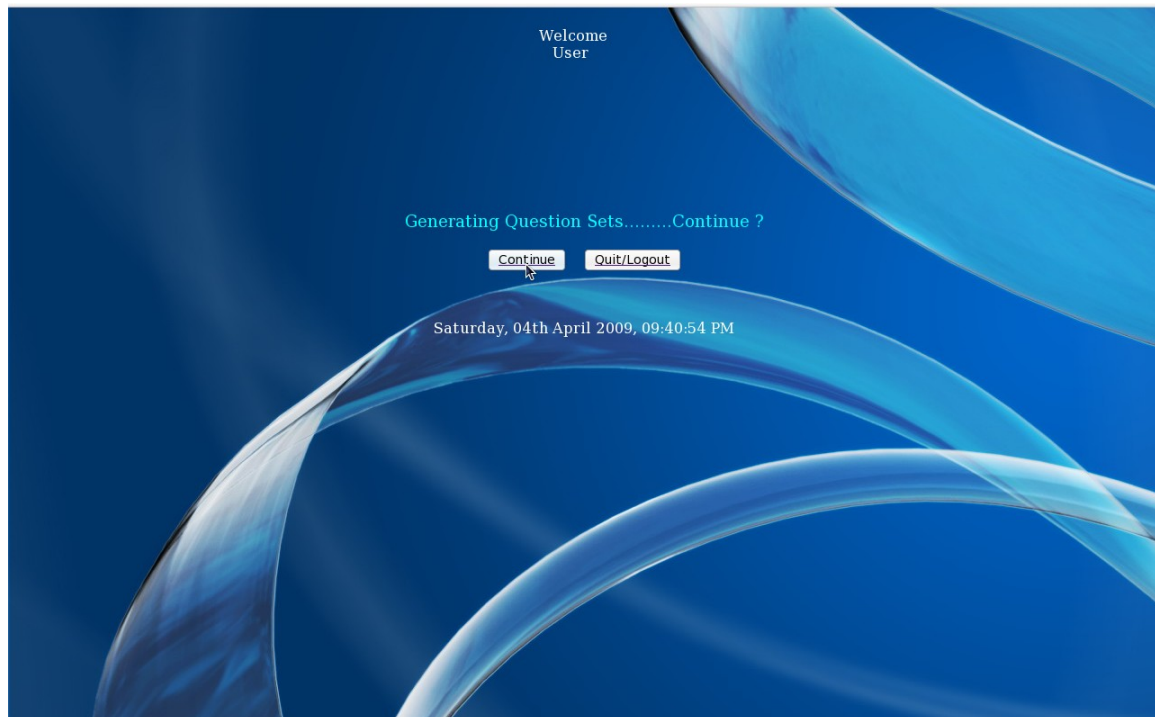
- **authenticate.php** -

```
<html>
<head>
<title>Question Set</title>
<link rel="shortcut icon" href="blue.jpeg">
```

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```
<script language="JavaScript">
var time = null
function move() {
document.test.submit();
}
</script>
</head>
<?php
session_start();
if($_SESSION['login'] != 1)
{
      header( 'Location: http://localhost/openguru/index.php' );
      }
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
      die('<center><br><br><br>Error in connecting to
Server<center>'.mysql_error());
      }
mysql_select_db("userdata",$conn);
$query = "select * from generator";
$res = mysql_query($query);
?>
<body background="web-background1.jpg" text="white"
onload="timer=setTimeout('move()',60000)">
<center><h1>You have 1 minute to complete the test</h1></center>
<form name="test" action="result.php" method="POST">
<?php
$i = rand() % 11;
$q = $i;
$num = $i + 10;
while($i < $num)
{
      $qno = mysql_result($res,$i,"qno");
      $question = mysql_result($res,$i,"question");
      $opt1 = mysql_result($res,$i,"opt1");
      $opt2 = mysql_result($res,$i,"opt2");
      $opt3 = mysql_result($res,$i,"opt3");
      $opt4 = mysql_result($res,$i,"opt4");
      $i++;
      $count = $i - $q;
      echo "<br><br><br>$count) $question<br><br><input
type=radio name='$qno' value='$opt1'>$opt1</input><input type=radio
name='$qno' value='$opt2'>$opt2</input><input type=radio name='$qno'
value='$opt3'>$opt3</input><input type=radio name='$qno'
value='$opt4'>$opt4</input>";
      }
echo "<input type=hidden name=i value='$q'></input>";
mysql_close($conn);
?>
<center><br><br><input type=submit value=Submit></input>  
<input type=reset value=Clear></input></center>
</form>
</body>
</html>
```

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- **signup.php** -

```html
<html>
<head>
<title>New User-Sign Up</title>
<link rel="shortcut icon" href="blue.jpeg">
</head>
<body background="bg.jpg" >
<br><br><br><br><br><br><br><br>
<center>
<br><br>
<table border=2 bordercolor=blue>
<caption><h3><font color="blue">New User
Information</font></h3></caption>
<tr><td><form action="update.php" method="POST">
<br><label>Full Name:</label> <input type=text maxlength="30"
name="username" autocomplete=off></input><br>
<br><label>Username:</label> <input type=text maxlength="15"
name="userid" autocomplete=off></input><font color=green size=1>
Maximum 15 characters</font> <br><br>
<label>Password:</label>  <input type=password
name="pass"></input><font color=red size=1>  Between 6-15
characters</font><br><br>
           &nb
sp;   
   <input type=submit value="Create Account">
   <input type=reset value=Clear>   
</form></td></tr></table>
<br><br><br>
<?php echo date("l, dS F Y, h:i:s A");?></center>
</body>
</html>
```

- **welcome.php** -

```html
<html>
<head>
<title>Welcome</title>
<link rel="shortcut icon" href="blue.jpeg">
</head>
<?php
session_start();
if($_SESSION['login'] != 1)
{
      header( 'Location: http://localhost/openguru/index.php' );
      }
?>
<body background="web-background1.jpg" text="white">
<center><marquee direction="up"
width="100px">Welcome<br>   User</marquee>
<br><br>
<form>
<font size=4 color="cyan">Generating Question Sets.........Continue ?
</font><br><br>
<a href="authenticate.php"><input type=submit
value=Continue></input></a>
   <a href="unvalidate.php"><input type=reset
value=Quit/Logout></input></a>
```

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```
</form>
<br><br>
<?php echo date("l, dS F Y, h:i:s A");?>
</center>
</body>
</html>
```

- **validate.php** -

```
<html>
<head>
<title>Logging In........Processing</title>
</head>
<body>
<?php
session_start();
$user_id = $_POST[userid];
$pass = sha1($_POST[pass]);
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
        die('<center><br><br><br>Error in connecting to Server<center>
'.mysql_error());
        }
mysql_select_db("userdata",$conn);
$query = "select count(*) from user where user_id='$user_id' and
password='$pass'";
$res = mysql_query($query,$conn);//gives resource id of query
$check = mysql_fetch_array($res);//fetches result array of argument
if($check['count(*)'] == 1)//returns argument of array
{
header( 'Location: http://localhost/openguru/welcome.php' );
$_SESSION['login'] = 1;
}
else
{
header( 'Location: http://localhost/openguru/index.php?
msg=login_error' );
$_SESSION['login'] = 0;
}
?>
</body>
</html>
```

- **unvalidate.php** -

```
<html>
<head>
<title>Logging Out........Processing</title>
</head>
<body>
<?php
session_start();
if($_SESSION['login'] != 1)
{
        header( 'Location: http://localhost/openguru/index.php' );
        }
else
```

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```
{
      $_SESSION['login'] = 0;
      session_unregister('login');
      session_destroy();
      session_start();
      header( 'Location: http://localhost/openguru/index.php' );
      }
?>
</body>
</html>
```

● **update.php** -

```
<html>
<head>
<title>Requesting account........Processing</title>
</head>
<body background="bg.jpg">
<center><br><br><br><br><br><br><br><br><br><br><br><a
href="index.php"><form><input type="submit" value="Back to
Home"></input></form></a></center>
<?php
$user_id = $_POST[userid];
$user_name = $_POST[username];
$password = $_POST[pass];
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
      die('<center><br><br><br>Error in connecting to
Server<center>'.mysql_error());
      }
mysql_select_db("userdata",$conn);
$query = "insert into user
values('$user_id','$user_name',sha1('$password'))";
if(!mysql_query($query,$conn))
{
      die('<center><br><br><br>Error-unable to Create
Account:Username not available</center>');
      }
echo "<center><br><br><br>Congratulations!<br>Account created
successfully</center>";
mysql_close($conn);
?>
</body>
</html>
```

● **result.php** -

```
<html>
<head>
<title>Generating Results.........</title>
<link rel="shortcut icon" href="blue.jpeg">
</head>
<body background="web-background1.jpg" text="white"><center><br><br>
<h1>And your Results are......</h1>
<?php
session_start();
if($_SESSION['login'] != 1)
```

```php
{
      header( 'Location: http://localhost/openguru/index.php' );
      }
$conn = mysql_connect("localhost","root","opensource");
if(!$conn)
{
      die('<center><br><br><br>Error in connecting to
Server<center>'.mysql_error());
      }
mysql_select_db("userdata",$conn);
$i = $_POST[i];
$start = $i + 1;
$end = $start + 10;
$query = "select * from generator";
$res = mysql_query($query);
$score = 0;
while($start < $end)
{
      $ans = mysql_result($res,$start-1,"ans");
      $test = $_POST[$start];
      $count = $start - $i;
      if(strcmp($test,$ans))
      {
            echo "$count) Wrong Answer: Right answer is
$ans.<img src='wrong.png'><br><br>";
      }
      else
      {
            echo "$count) Correct Answer: You answered
$test.<img src='correct.png'><br><br>";
            $score++;
      }
      $start++;
      }
echo "Final score is $score out of 10<br><br>";
mysql_close($conn);
?>
<a href="welcome.php"><input type=submit value="Try
Again"></input></a>
   <a href="unvalidate.php"><input type=reset
value=Quit/Logout></input></a><center>
</body>
</html>
```