Practical 1A

Aim: Create a simple Calculator application using servlet.

Program Code:

Index.html

```
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html">
  <head>
        <title>Calculator</title>
  </head>
  <body>
<form action="CalculatorServlet">
  Enter a first Number
 <input type="text" name ="txt1"> </input><br></br>
  Enter a Second Number
  <input type="text" name ="txt2"> </input><br></br>
  <br></br>select a operation
  <select name="opr">
        <option value="+">+</option>
        <option value="-">-</option>
       <option value="*">*</option>
        <option value="/">/</option>
  </select>
 <!--<input type="radio" name="opr" value="+">Add</input>
 <input type="radio" name="opr" value="*">multiply</input>
 <input type="radio" name="opr" value="/">division</input>
<input type="radio" name="opr" value="-">subtraction</input><br></br><br></br>-->
 <input type="reset" value="reset"></input>
  <input type="submit" value="calculate"></input>
```

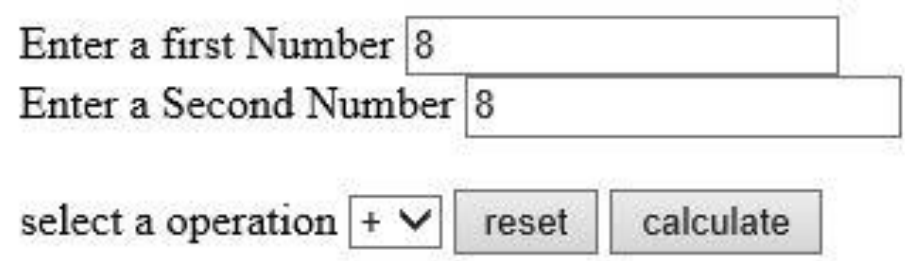
```
    </form>
  </body>
</html>
```

CalculatorServlet.java

```
package mypack;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class CalculatorServlet extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
 throws ServletException, IOException
 {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        try {
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet CalculatorServlet</title>");
            out.println("</head>");
            out.println("<body>");

            double n1 = Double.parseDouble(request.getParameter("txt1"));
            double n2 = Double.parseDouble(request.getParameter("txt2"));
            double result = 0;
```

```
            String opr = request.getParameter("opr");
            if(opr.equals("+")) result = n1+n2;
            if(opr.equals("-")) result = n1-n2;
            if(opr.equals("*")) result = n1*n2;
            if(opr.equals("/")) result = n1/n2;
            out.println("<h1> Result :  " + result + "</h1>");
            out.println("</body>");
            out.println("</html>");
        } finally {
            out.close();
        }
    }
}
```

Output:



Result : 16.0

Practical 1B

Aim: Create a servlet for a login page. If the username and password are correct then it says message “Hello” else a message “login failed”.

Program:

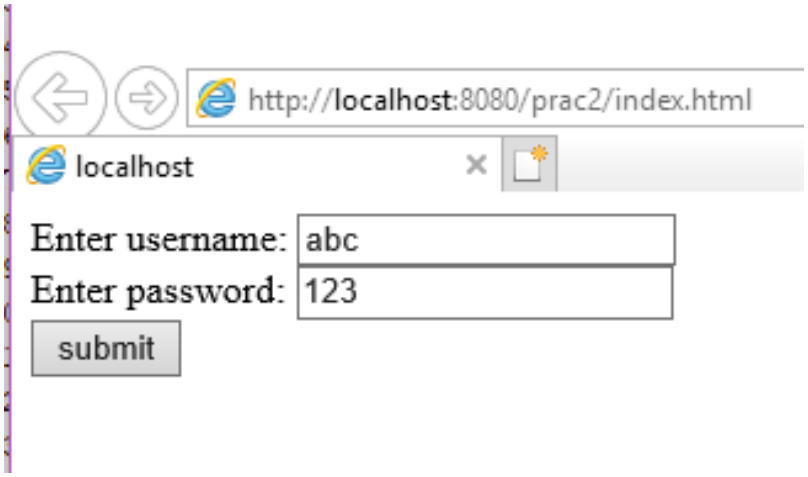
Index.html

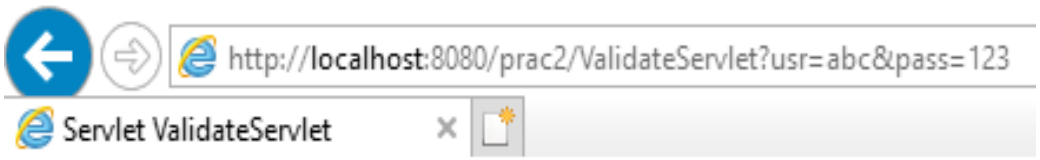
```
<!--
To change this template, choose Tools | Templates
and open the template in the editor.
-->
<!DOCTYPE html>
<html>
    <head>
        <title></title>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    </head>
    <body>
        <form action="ValidateServlet">
            Enter username:
            <input type="text" name="usr" ><br>
            Enter password:
            <input type="text" name="pass" ><br>

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

    </body>
</html>
```

ValidateServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class ValidateServlet extends HttpServlet {


   protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
     throws ServletException, IOException
     {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        try {

            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet ValidateServlet</title>");
            out.println("</head>");
            out.println("<body>");
            String username = "abc";
            String password = "123";
             String usr1 = request.getParameter("usr");
            String pass1 = request.getParameter("pass");

            if((username.equals(usr1)) && (password.equals(pass1))) {
                out.println("<h1> hello " + usr1 + “, Login success </h1>");
            }
            else {
                 out.println("<h1> Login unsuccessful </h1>");
            }

            out.println("</body>");
            out.println("</html>");
        } finally {
            out.close();
        }
    }
```

Output:





hello abc, Login success

Practical 1C

Aim: Create a registration servlet in Java using JDBC. Accept the details such as Username, Password, Email, and Country from the user using HTML Form and store the registration details in the database.

Program:

Index.html

```
<!--
To change this template, choose Tools | Templates
and open the template in the editor.
-->
<!DOCTYPE html>
<html>
    <head>
        <title></title>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    </head>
    <body>
        <form action="RegistrationServlet">
            Name:
            <input type="text" name="usr" ><br>
            Password:
            <input type="text" name="pass" ><br>
            Email:
            <input type="text" name="email" ><br>
            Country:
            <input type="text" name="con" ><br>
            <input type="submit" value="Submit">  
            <input type=“reset” value=”Clear”>

        </form>
    </body>
```

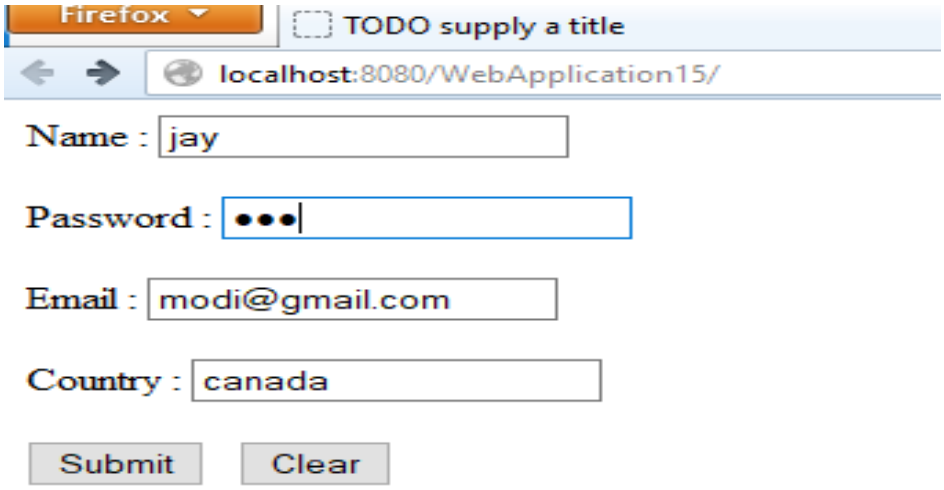
```
</html>
```

RegistrationServlet.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import java.sql.*;

public class RegistrationServlet extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
    throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        try {
             out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet RegistrationServlet</title>");
            out.println("</head>");
            out.println("<body>");

            String usr1 = request.getParameter("usr");
            String pass1 = request.getParameter("pass");
            String email1 = request.getParameter("email");
            String con = request.getParameter("con");
            try{
                Class.forName("com.mysql.jdbc.Driver");
                Connection con1 =
DriverManager.getConnection("jdbc:mysql://localhost:3306/logindb","root","root");
                PreparedStatement ptm = con1.prepareStatement("insert into tbluser
value(?,?,?,?)");
                ptm.setString(1, usr1);
                ptm.setString(2, pass1);
                ptm.setString(3, email1);
                ptm.setString(4, con);
                ptm.executeUpdate();

        }catch(Exception se){
                out.println("<h1> invalid details </h1>");
            }

            out.println("</body>");
            out.println("</html>");
        } finally {
            out.close();
```

```
    }
}
```

Output :



Query 1

```
create database logindb;
use logindb;

create table tbluser(
user varchar(25),
pass varchar(25),
email varchar(30),
con varchar(30)
);
```

```
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| uname   | varchar(25) | YES  |     | NULL    |       |
| pass    | varchar(25) | YES  |     | NULL    |       |
| email   | varchar(30) | YES  |     | NULL    |       |
| country | varchar(50) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
4 rows in set (0.12 sec)

mysql> select * from details;
+-------+------+----------------+---------+
| uname | pass | email          | country |
+-------+------+----------------+---------+
| jay   | jay  | modi@gmail.com | canada  |
+-------+------+----------------+---------+
1 row in set (0.06 sec)
```

Practical 2A

Aim: Using Request Dispatcher Interface create a Servlet which will validate the password entered by the user, if the user has entered "Servlet" as password, then he will be forwarded to Welcome Servlet else the user will stay on the index.html page and an error message will be displayed.

Program:

Index.html

```
<html>
    <head>
        <title>TODO supply a title</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <div>
            <form action="LoginServlet">
                Username <input type="text" name="uname"><br>
                Password <input type="password" name="pass"><br>
                    <input type="submit" value="Submit">  
                    <input type="reset" value="Clear">
            </form>
        </div>
    </body>
</html>
```

LoginServlet.java

```
package mypack;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.RequestDispatcher;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class LoginServlet extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException
 {
        response.setContentType("text/html;charset=UTF-8");
        try( PrintWriter out = response.getWriter())
           {

           out.println("<!DOCTYPE html>");
           out.println("<html>");
           out.println("<head>");
           out.println("<title>Servlet LoginServlet</title>");
           out.println("</head>");
           out.println("<body>");

           String username = request.getParameter("uname");
           String password = request.getParameter("pass");

           if(username.equals("Admin")&&password.equals("Servlet"))
           {

              RequestDispatcher rd = request.getRequestDispatcher("WelcomeServlet");
              rd.forward(request, response);
```

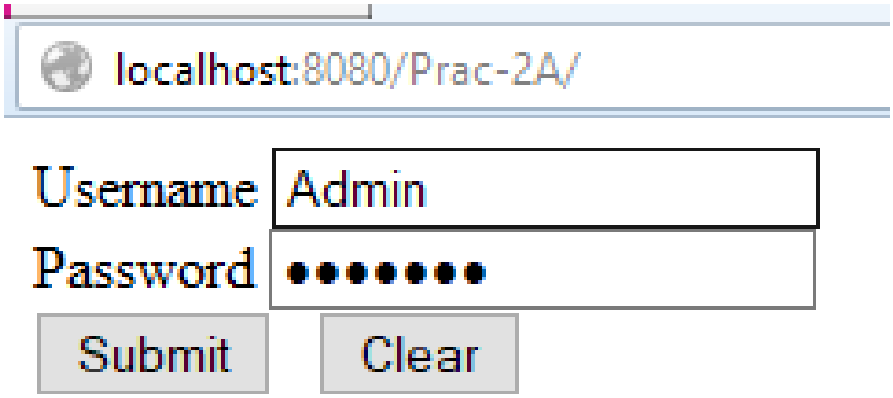
```
        }
        else
        {
            out.println("<h1>Invalid Login<h1>");
            RequestDispatcher rd =        request.getRequestDispatcher("index.html");
            rd.include(request, response);
        }
        out.println("</body>");
        out.println("</html>");
    }

 }
```

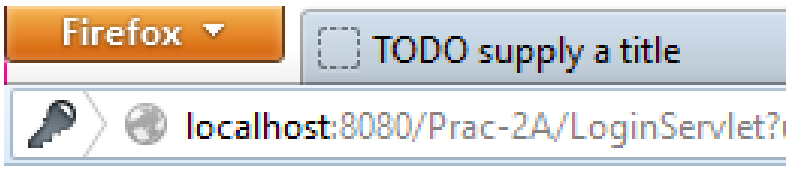
WelcomeServlet.java

```
package mypack;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class WelcomeServlet extends HttpServlet {

protected void processRequest(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException
{
    response.setContentType("text/html;charset=UTF-8");
    try (PrintWriter out = response.getWriter()) {

        out.println("<!DOCTYPE html>");
```

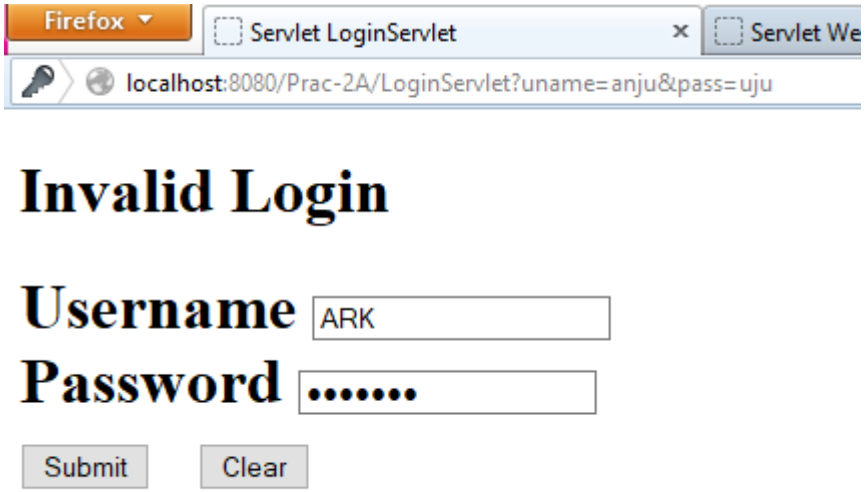
```
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet WelcomeServlet</title>");
        out.println("</head>");
        out.println("<body>");
        String username = request.getParameter("uname");
        out.println("<h1>Welcome "+username+"</h1>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

Output:





Welcome Admin


Firefox
Servlet LoginServlet
Servlet We
localhost:8080/Prac-2A/LoginServlet?uname=anju&pass=uju
Invalid Login
Username
ARK
Password
Submit
Clear

Practical 2B

Aim: Create a servlet that uses Cookies to store the number of times a user has visited servlet.

Program code:-

Index.html

```
<head>
        <title>TODO supply a title</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
<body>
<h1 align="center">Cookies</h1>
<form action="cookiesServlet">
Enter your Name:<input type="text" name="name">
<input type="submit" value="cook">
<input type="reset">
</form></body>
```

cookiesServlet.java

```
package mypack;


import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
 throws ServletException, IOException
```

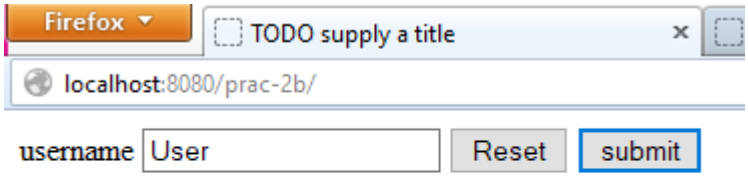
```
{
        String name=request.getParameter("name");
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            out.println("<!DOCTYPE html>");
            out.println("<html><body>");
            out.println("<h1>cookies Example</h1>");
            out.println("<b>Welcome "+name+"</b>");
            Cookie ck1=new Cookie("username",name);
            Cookie ck2=new Cookie("visit","1");
            response.addCookie(ck1);
            response.addCookie(ck2);
            out.println("<h1><a href=page2>Click to view next</a></h1>");
            out.println("</body></html>");
            }
}
```

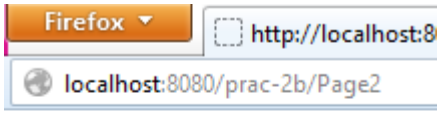
page2.java

```
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
            throws ServletException, IOException {
        Cookie[] ck=request.getCookies();
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            out.println("<!DOCTYPE html>");
            out.println("<html><body>");
            for(int i=0;i<ck.length;i++){
                if(ck[i].getName().equals("visit")) {
                    int count = Integer.parseInt(ck[i].getValue())+1;
                    out.println("<h1>Visit No: "+count+"</h1>");
                    ck[i]=new Cookie("visit",count+"");
                    response.addCookie(ck[i]); }
                else
```

```
            out.println(ck[i].getName()+" = "+ck[i].getValue());
        } out.println("</body></html>");}}
```

Output:





username = User

Visit No: 2

C) **Aim:** Create a servlet demonstrating the use of session creation and destruction. Also check whether the user has visited this page first time or has visited earlier also using sessions.

Program Code:

index.html

```
<html>
   <head><title>Session Demo</title></head>
   <form action="Page1" method="get" >
      Enter User ID <input type="text" name="txtName"><br>
      <input type="reset" ><input type="submit" >
   </form>
</html>
```

Page1.java

```
package mypack;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
public class Page1 extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page1</title></head>");
```

```
        HttpSession hs = request.getSession(true);
        if(hs.isNew()){
        out.println("<body bgcolor=yellow>");
           String name = request.getParameter("txtName");
           hs.setAttribute("uname", name);
           hs.setAttribute("visit", "1");
        out.println("<h1>Welcome First Time</h1>");
        }
        else{
        out.println("<h1>Welcome Again</h1>");
        int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
        out.println("<h1>You Visited "+visit+"Times</h1>");
        hs.setAttribute("visit", ""+visit);
        }
        out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
        out.println("<h1>You Logged in at  "+new
java.util.Date(hs.getCreationTime())+"</h1>");
        out.println("<h1><a href=Page2>Click for Page 2 </a></h1>");
        out.println("<h1><a href=Page3>Click for Page 3 </a></h1>");
        out.println("<h1><a href=Page4>Click for Page 4 </a></h1>");
        out.println("<h1><a href=LogoutServlet>Click to Terminate Session </a></h1>");
        out.println("</body>");
        out.println("</html>");
      }
   }
```

Page2.java

```
package mypack;
import java.io.IOException;
```

```
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
public class Page2 extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page2</title></head>");

         HttpSession hs = request.getSession(false);
         out.println("<h1>Welcome Again on Page No. 2</h1>");
         int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
         out.println("<h1>You Visited "+visit+"Times</h1>");
         hs.setAttribute("visit", ""+visit);

         out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
         out.println("<h1>You Logged in at  "+new
java.util.Date(hs.getCreationTime())+"</h1>");
         out.println("<h1><a href=Page1>Click for Page 1 </a></h1>");
         out.println("<h1><a href=Page3>Click for Page 3 </a></h1>");
         out.println("<h1><a href=Page4>Click for Page 4 </a></h1>");
         out.println("<h1><a href=LogoutServlet>Click for Terminate Session </a></h1>");
         out.println("</body>");
         out.println("</html>");
      }
   }
```

Page3.java

```
package mypack;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
public class Page3 extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page3</title></head>");

         HttpSession hs = request.getSession(false);
         out.println("<h1>Welcome Again on Page 3</h1>");
         int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
         out.println("<h1>You Visited "+visit+"Times</h1>");
         hs.setAttribute("visit", ""+visit);

         out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
         out.println("<h1>You Logged in at  "+new
java.util.Date(hs.getCreationTime())+"</h1>");
         out.println("<h1><a href=Page1>Click for Page 1 </a></h1>");
         out.println("<h1><a href=Page2>Click for Page 2 </a></h1>");
         out.println("<h1><a href=Page4>Click for Page 4 </a></h1>");
         out.println("<h1><a href=LogoutServlet>Click for Terminate Session </a></h1>");
         out.println("</body>");
```

```
        out.println("</html>");
      }
   }
```

Page4.java

```
package mypack;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
public class Page4 extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page2</title></head>");

        HttpSession hs = request.getSession(false);
        out.println("<h1>Welcome Again on Page No. 4</h1>");
        int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
        out.println("<h1>You Visited "+visit+"Times</h1>");
        hs.setAttribute("visit", ""+visit);

        out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
        out.println("<h1>You Logged in at  "+new
java.util.Date(hs.getCreationTime())+"</h1>");
        out.println("<h1><a href=Page1>Click for Page 1 </a></h1>");
```

```
        out.println("<h1><a href=Page2>Click for Page 2 </a></h1>");
        out.println("<h1><a href=Page3>Click for Page 3 </a></h1>");
        out.println("<h1><a href=LogoutServlet>Click for Terminate Session </a></h1>");
        out.println("</body>");
        out.println("</html>");
    }
  }
```

LogoutServlet.java

```
package mypack;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class LogoutServlet extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    PrintWriter out = response.getWriter();
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet LogoutServlet</title>");
        out.println("</head>");
        out.println("<body>");
        javax.servlet.http.HttpSession hs = request.getSession();
        if(hs != null) hs.invalidate();
        out.println("<h1>You are Logged out now.....</h1>");
```

```
        out.println("</body>");
        out.println("</html>");
    }
}
```

Output:

Enter the user Name: UPG

Submit

Reset

Welcome First Time

Your session Id1e19bc9e1e4e4823312d58e5ba50

You logged in atFri Sep 27 14:11:13 IST 2019

clck here for page2

Click Here to Terminate

Servlet page2 at /practical2c

You are logged out now.....

Practical-3

A) Aim: Create a servlet application to upload and download a file.

Program Code:

index.html

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
 <body>
 <form action="FileUploadServlet" method="post" enctype="multipart/form-data">
   Select File to Upload:<input type="file" name="file" id="file"><br>
   <br>
   Destination <input type="text" value="/tmp" name="destination">
   <br>
   <br>
   <input type="submit" value="Upload file" name="upload" id="upload">
 </form>
<br><br>
<h1>File Download Application</h1>
Click <a href="FileDownloadServlet?filename=Cyber.txt">Cyber</a>
<br/><br/>
Click <a href="FileDownloadServlet?filename=CyberSecurity.txt">Cyber Security</a>

 </body> </html>
```

FileDownloadServlet.java

```
package mypack;


import java.io.IOException;
import java.io.InputStream;
import java.io.PrintWriter;
import javax.servlet.ServletContext;
import javax.servlet.ServletException;
import javax.servlet.ServletOutputStream;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;


@WebServlet(name = "FileDownloadServlet", urlPatterns={"/FileDownloadServlet"})
public class FileDownloadServlet extends HttpServlet {


   protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
          throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      String fileToDownload = request.getParameter("filename");
      System.err.println("Downloading file now...");
      downloadFile(request,response,fileToDownload);
   }


   private void downloadFile(HttpServletRequest request, HttpServletResponse response,
String fileName ) throws ServletException, IOException{
      int length = 0;
      try(ServletOutputStream outputStream = response.getOutputStream()){
```

```
        ServletContext context = getServletConfig().getServletContext();
        response.setContentType((context.getMimeType(fileName) !=null) ?
              context.getMimeType(fileName) : "application/pdf");
        response.setHeader("Content-Disposition", "attachment; filename=\""+
              fileName);
        InputStream inputStream = context.getResourceAsStream("/"+
              fileName);
        byte[] bytes = new byte[1024];

        while((inputStream !=null) && ((length = inputStream.read(bytes)) != -1)){
           outputStream.write(bytes,0,length);

        }
        outputStream.flush();
     }
  }
```

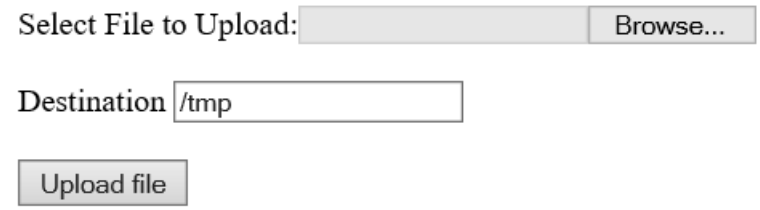
FileUploadServlet.java

```
package myPack;

import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStream;
import java.io.OutputStream;
import java.io.PrintWriter;
import javax.servlet.ServletException;
```

```
import javax.servlet.annotation.MultipartConfig;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.Part;

@MultipartConfig
public class FileUploadServlet extends HttpServlet {

   protected void processRequest(HttpServletRequest req, HttpServletResponse res)
         throws ServletException, IOException {
      res.setContentType("text/html;charset=UTF-8");

       PrintWriter out = res.getWriter();
       String path = req.getParameter("destination");
       Part filePart = req.getPart("file");
       String filename = filePart.getSubmittedFileName().toString();
       out.print("<br><br><hr> file name: "+filename);
       OutputStream os = null;
       InputStream is = null;
      try {
       os = new FileOutputStream(new File(path+File.separator+filename));
       is = filePart.getInputStream();
       int read=0;

       while ((read = is.read()) != -1) {
         os.write(read);
       }
       out.println("<br>file uploaded sucessfully...!!!");
```

```
        }
        catch(FileNotFoundException e){out.print(e);}
    }
}
```

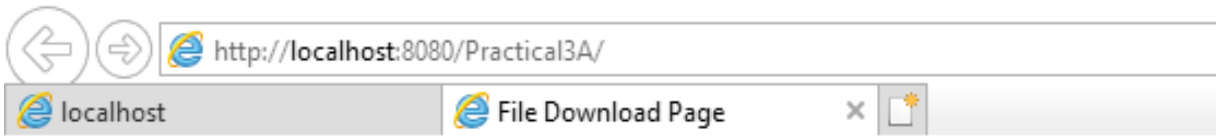
Output:



File Download Application

Click Cyber

Click Cyber Security



File Download application

Click Sample File

Click Table of Contents

B) Aim: Develop Simple Servlet Question Answer Application using Database.

Program Code:

index.html

```
<html>   <head><title>Quiz Application</title></head>
  <body>

        <h1>Welcome to Quiz Servlet </h1>
        <h1><a href="QuizServlet" >CLICK TO START QUIZ</a></h1>

  </body>
</html>
```

QuizServlet.java

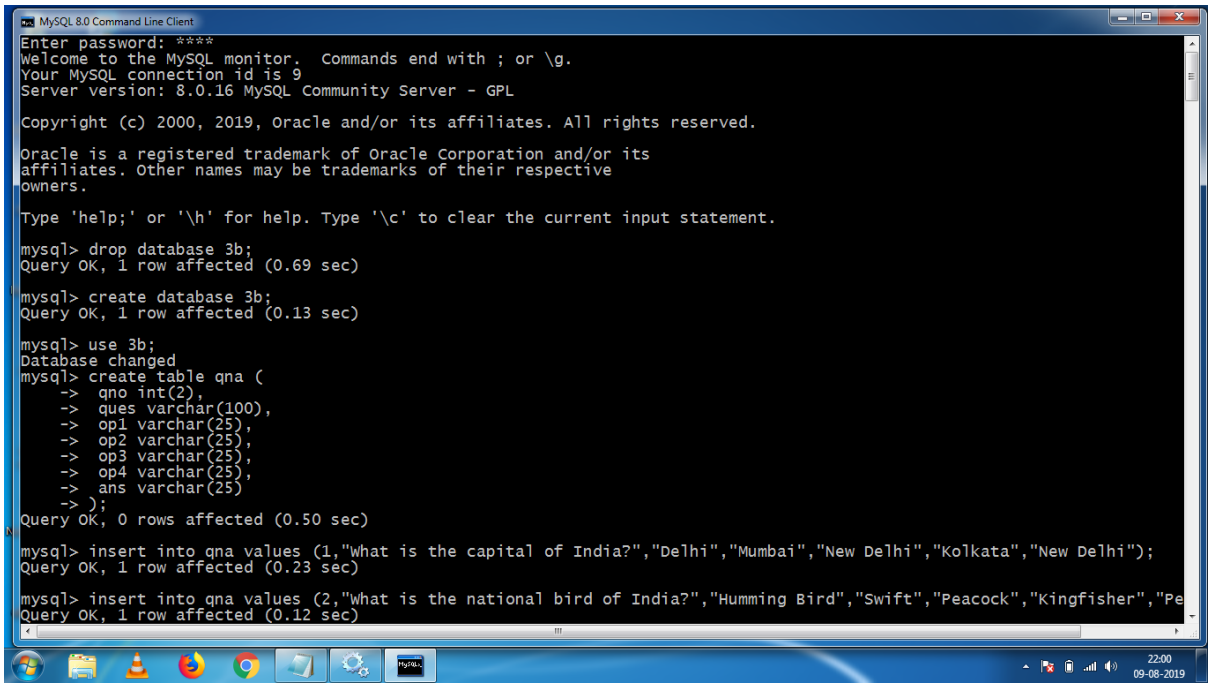
```
package mypack;

import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class QuizServlet extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
out.println("<form action=ShowResult >");
      try {
```

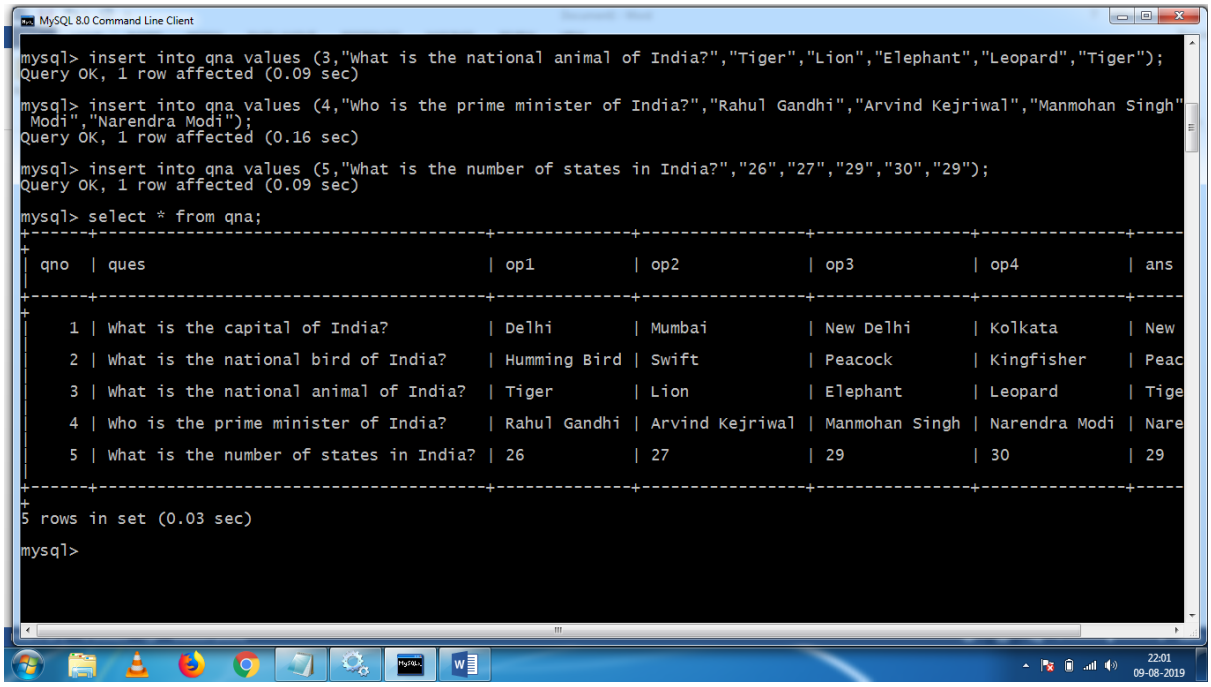
```
Class.forName("com.mysql.jdbc.Driver");

Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/qadb","root","root");

Statement stmt = con.createStatement();

ResultSet res = stmt.executeQuery("select * from quiz");


out.println("<table border=1 >");

int qno=0;

while(res.next()){

   qno++;

out.println("<tr><td>"+res.getString(1)+"</td>");

out.println("<td>"+res.getString(2)+"</td></tr>");

out.println("<tr><td><input type=radio name="+qno+"
value="+res.getString(3)+"></td><td>"+res.getString(3)+"</td></tr>");

out.println("<tr><td><input type=radio name="+qno+"
value="+res.getString(4)+"></td><td>"+res.getString(4)+"</td></tr>");

out.println("<tr><td><input type=radio name="+qno+"
value="+res.getString(5)+"></td><td>"+res.getString(5)+"</td></tr>");

out.println("<tr><td><input type=radio name="+qno+"
value="+res.getString(6)+"></td><td>"+res.getString(6)+"</td></tr>");


}


      }catch(Exception e){out.println(e);}

out.println("</table>");

out.println("<input type=reset >");

     out.println("<input type=submit value=SUBMIT >");

      out.println("</form>");

}

}
```

ShowResult.java

```
package mypack;
import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class ShowResult extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
      try  {
    Class.forName("com.mysql.jdbc.Driver");
  Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/qadb","root","root");
Statement stmt = con.createStatement();
ResultSet res = stmt.executeQuery("select ans from quiz");
int count =0, qno=0;
while(res.next()){
   if(res.getString(1).equals(request.getParameter(""+(++qno))))
   { count++;
   out.println("<h1>Correct </h1>");
   }
   else {
      out.println("<h1>Incorrect </h1>");
   }
}
out.println("<h1>Your Score is "+count+" </h1>");
      }catch(Exception e){out.println(e);}
   } }
```

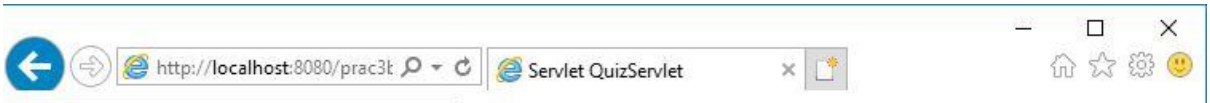
Output:


MySQL 8.0 Command Line Client
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.16 MySQL Community Server - GPL
Copyright (c) 2000, 2019, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> drop database 3b;
Query OK, 1 row affected (0.69 sec)
mysql> create database 3b;
Query OK, 1 row affected (0.13 sec)
mysql> use 3b;
Database changed
mysql> create table qna (
-> qno int(2),
-> ques varchar(100),
-> op1 varchar(25),
-> op2 varchar(25),
-> op3 varchar(25),
-> op4 varchar(25),
-> ans varchar(25)
->);
Query OK, 0 rows affected (0.50 sec)
mysql> insert into qna values (1,"What is the capital of India?","Delhi","Mumbai","New Delhi","Kolkata","New Delhi");
Query OK, 1 row affected (0.23 sec)
mysql> insert into qna values (2,"What is the national bird of India?","Humming Bird","Swift","Peacock","Kingfisher","Pe
Query OK, 1 row affected (0.12 sec)
22:00
09-08-2019


MySQL 8.0 Command Line Client
mysql> insert into qna values (3,"What is the national animal of India?","Tiger","Lion","Elephant","Leopard","Tiger");
Query OK, 1 row affected (0.09 sec)
mysql> insert into qna values (4,"Who is the prime minister of India?","Rahul Gandhi","Arvind Kejriwal","Manmohan Singh"
Modi","Narendra Modi");
Query OK, 1 row affected (0.16 sec)
mysql> insert into qna values (5,"What is the number of states in India?","26","27","29","30","29");
Query OK, 1 row affected (0.09 sec)
mysql> select * from qna;
qno | ques | op1 | op2 | op3 | op4 | ans
1 | What is the capital of India? | Delhi | Mumbai | New Delhi | Kolkata | New
2 | What is the national bird of India? | Humming Bird | Swift | Peacock | Kingfisher | Peac
3 | What is the national animal of India? | Tiger | Lion | Elephant | Leopard | Tige
4 | Who is the prime minister of India? | Rahul Gandhi | Arvind Kejriwal | Manmohan Singh | Narendra Modi | Nare
5 | What is the number of states in India? | 26 | 27 | 29 | 30 | 29
5 rows in set (0.03 sec)
mysql>
22:01
09-08-2019

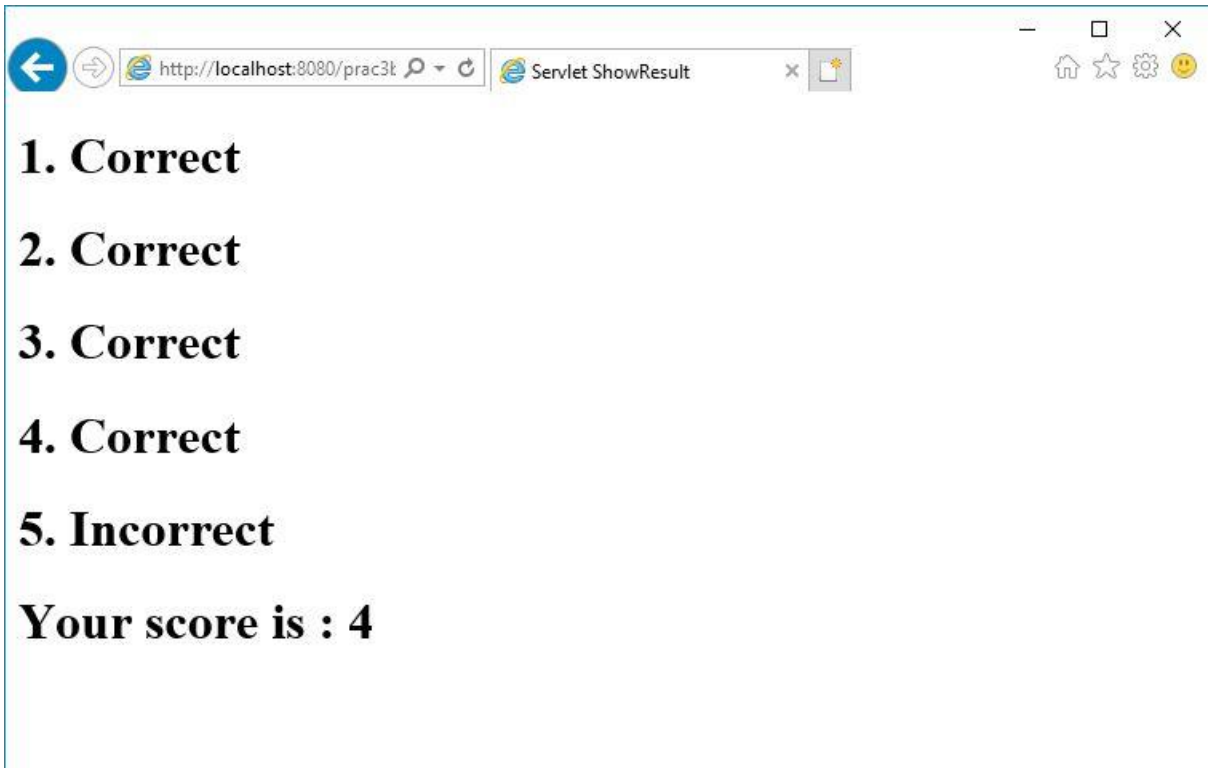
Welcome To Quiz

Let's Begin



1	What is the capital of India?
○	Delhi
○	Mumbai
○	NewDelhi
○	Kolkata
2	What is the national bird of India?
○	Humming Bird
○	Swift
○	Peacock
○	Kingfisher
3	What is the national animal of India?
○	Tiger
○	Lion
○	Elephant
○	Leopard
3	Who is the prime minister of India?
○	Rahul Gandhi
○	Arvind Kejriwal
○	Manmohan Singh
○	NarendraModi
3	What is the number of states in India?
○	26
○	27
○	29
○	30

Clear Submit


http://localhost:8080/prac3t
Servlet ShowResult
1. Correct
2. Correct
3. Correct
4. Correct
5. Incorrect
Your score is : 4

C) Aim: Create simple Servlet application to demonstrate Non-Blocking Read Operation.

Program Code:

index.html

```
<html>
   <head>
      <title>Non Blocking IO</title>
      <meta charset="UTF-8">
      <meta http-equiv="Refresh" content="0; URL=NonBlockingServlet">
   </head>
   <body>
   </body>
</html>
```

NonBlockingServlet.java

```
package nonblkapp;

import java.io.*;
import java.net.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class NonBlockingServlet extends HttpServlet {
   protected void service(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
         /* TODO output your page here. You may use following sample code. */
         out.println("<h1>FileReader</h1>");
```

```
        String filename="/booklist.txt";
        ServletContext c=getServletContext();
        InputStream in=c.getResourceAsStream(filename);
        String
path="http://"+request.getServerName()+":"+request.getServerPort()+request.getContextP
ath()+"/ReadingNonBloclingServlet";
        URL url=new URL(path);
        HttpURLConnection conn=(HttpURLConnection)url.openConnection();
        conn.setChunkedStreamingMode(2); //number of bytes to write in each chunk.
        conn.setDoOutput(true);
        conn.connect();
        if(in!=null)
        {
           InputStreamReader inr=new InputStreamReader(in);
           BufferedReader br = new BufferedReader(inr);
           String text="";
           System.out.println("Reading started....");
           BufferedWriter bw=new BufferedWriter(new
OutputStreamWriter(conn.getOutputStream()));
           while((text=br.readLine())!=null){
              out.print("<hr>"+text);
              try{
              Thread.sleep(1000);
              out.flush();
              }catch(Exception ex){ out.println(ex); }
           }out.print("reading completed....");
           bw.flush();
           bw.close();

        }
```

```
        }
    }
}
```

ReadingListener.java

```
package nonblkapp;
import java.io.IOException;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.AsyncContext;
import javax.servlet.ReadListener;
import javax.servlet.ServletInputStream;

public class ReadingListener implements ReadListener
{
    private ServletInputStream input = null;
    private AsyncContext ac = null;

    ReadingListener(ServletInputStream in, AsyncContext c) {
        input = in;
        ac = c;
    }
    @Override
    public void onDataAvailable() throws IOException {
    }
    public void onAllDataRead() throws IOException {
        ac.complete();
    }
```

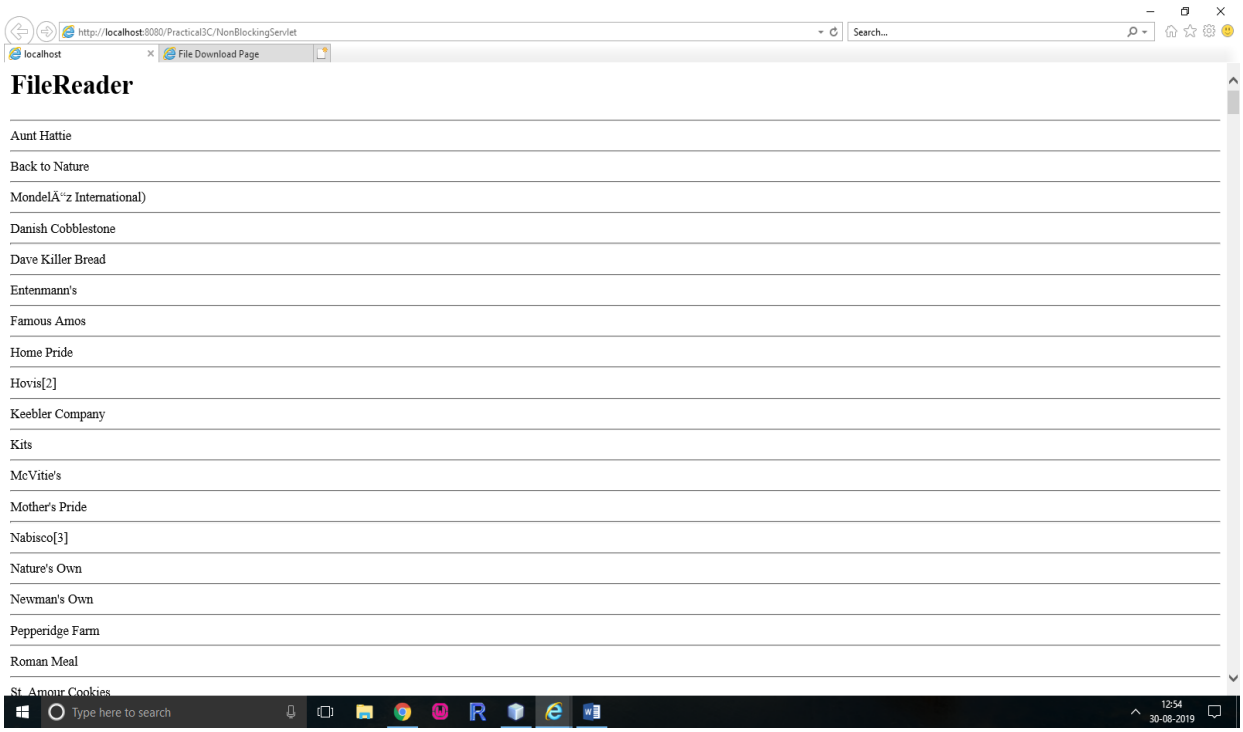
```
    public void onError(final Throwable t) {
        ac.complete();
        t.printStackTrace();
    }
}
```

ReadingNonBlocingServlet.java

```
package nonblkapp;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.AsyncContext;
import javax.servlet.ServletException;
import javax.servlet.ServletInputStream;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 *
 * @author Beena Kapadia
 */
@WebServlet (name = "ReadingNonBlockingServlet", urlPatterns =
{"/ReadingNonBlockingServlet"},asyncSupported = true )
public class ReadingNonBlockingServlet extends HttpServlet {
@Override
    protected void service(HttpServletRequest request, HttpServletResponse response)
      throws ServletException, IOException {
        response.setContentType("text/html");
```

```
        AsyncContext ac = request.startAsync();
        ServletInputStream in=request.getInputStream();
        in.setReadListener(new ReadingListener(in,ac));
    }
}
```

Output:



Practical-4

A) Aim: Develop a simple JSP application to display values obtained from the use of intrinsic objects of various types.

Program Code:

index.html

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <div>TODO write content</div>
            <a href="Prac_4A.jsp">Click Here</a>
  </body>
</html>
```

Prac_4A.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<html><head><title>JSP Page</title></head>
  <body>
```

```
    <h1>Use of Intrinsic Objects in JSP</h1>
    <h1>Request Object </h1>
    Query String <%=request.getQueryString() %><br>
    Context Path <%=request.getContextPath() %><br>
    Remote Host  <%=request.getRemoteHost()  %><br>
    <h1>Response Object </h1>
    Character Encoding Type <%=response.getCharacterEncoding() %><br>
    Content Type       <%=response.getContentType()  %><br>
    Locale             <%=response.getLocale()  %><br>
    <h1>Session Object </h1>
    ID <%=session.getId() %><br>
    Creation Time <%=new java.util.Date(session.getCreationTime()) %><br>
    Last Access Time<%=new java.util.Date(session.getLastAccessedTime())  %><br>
  </body>
</html>
```

Output:

Use of Intrinsic Objects in JSP

Request Object

Query String null
Context Path /Practical4A
Remote Host 0:0:0:0:0:0:0:1

Response Object

Character Encoding Type UTF-8
Content Type text/html;charset=UTF-8
Locale en_IN

Session Object

ID dcbc222859141f89a3b19098e98e
Creation Time Fri Sep 20 14:01:02 IST 2019
Last Access TimeFri Sep 20 14:01:02 IST 2019

B) Aim: Develop a simple JSP application to pass values from one page to another with validations. (Name-txt, age-txt, hobbies-checkbox, email-txt,gender-radio button).

Program Code:

index.html

```
<html><head><title>User Information Paage</title>
</head>
  <body>
    <form action="Validate.jsp">
      Enter Your Name<input type="text" name="name" ><br>
      Enter Your Age<input type="text" name="age" ><br>
      Select Hobbies
      <input type="checkbox" name="hob" value="Singing">Singing
      <input type="checkbox" name="hob" value="Reading">Reading Books
      <input type="checkbox" name="hob" value="Football">Playing Football<br>
      Enter E-mail<input type="text" name="email" ><br>
      Select Gender
      <input type="radio" name="gender" value="male">Male
      <input type="radio" name="gender" value="female">Female
      <input type="radio" name="gender" value="other">Other<br>
      <input type="hidden" name="error" value="">
      <input type="submit" value="Submit Form">
      <br>
    </form>
  </body>
</html>
```

Validate.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8" import="mypack.*" %>
<html><head><title>JSP Page</title></head>
   <body>
      <h1>Validation Page</h1>

<jsp:useBean id="obj"  scope="request"
       class="mypack.CheckerBean"     >
<jsp:setProperty name="obj" property="*"/>
</jsp:useBean>

<%
if (obj.validate())
{
 %>
<jsp:forward page="successful.jsp"/>
<%   }
else  {
%>
<jsp:include page="index.html"/>
<%}%>
<%=obj.getError() %>
   </body>
</html>
```

CheckerBean.java

```
package mypack;

public class CheckerBean {
```

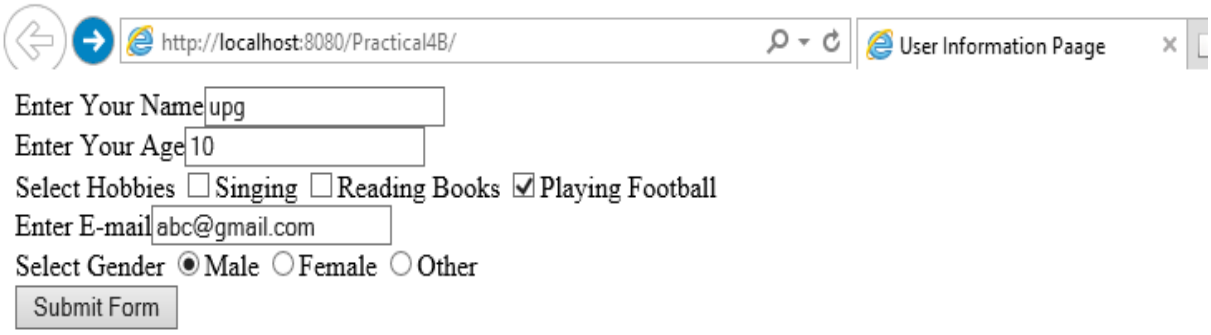
```
private String name, age, hob, email, gender,error;
public CheckerBean(){error="";}
public void setName(String n){name=n;}
public void setAge(String a){age=a;}
public void setHob(String h){hob=h;}
public void setEmail(String e){email=e;}
public void setGender(String g){gender=g;}
public void setError(String e){error=e;}
public String getName(){return name;}
public String getAge(){return age;}
public String getHob(){return hob;}
public String getEmail(){return email;}
public String getGender(){return gender;}
public String getError(){return error;}
public boolean validate(){
boolean res=true;
if(name.trim().equals("")) {error+="<br>Enter First Name";res=false;}
if(age.length() > 2 )
{error+="<br>Age Invalid";res=false;}

return res;
}
}
```

successful.jsp

```
<html>
   <head>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
        <title>JSP Page</title>
    </head>
    <body>
        <h1>DATA VALIDATED SUCCESSFULLY </h1>
    </body>
</html>
```

Output:



C) Aim: Create a registration and login JSP application to register and authenticate the user based on username and password using JDBC.

Program Code:

index.html

```
<html>
  <head><title>JSP With JDBC</title></head>
  <body>
    <h1><a href="Register.html" >New User Register Here</a></h1>
    <h1><a href="Login.html" >Click Here to Login</a></h1>
  </body>
</html>
```

Regsiter.html

```
<html><head><title>New User Registration Page</title></head>
  <body>
    <form action="Register.jsp" >
      <h1> New User Registration Page</h1>
      Enter User Name <input type="text" name="txtName" ><br>
      Enter Password <input type="password" name="txtPass1" ><br>
      Re-Enter Password<input type="password" name="txtPass2" ><br>
      Enter Email<input type="text" name="txtEmail" ><br>
      Enter Country Name <input type="text" name="txtCon" ><br>
      <input type="reset" ><input type="submit" value="REGISTER" >
    </form>
  </body>
</html>
```

Register.jsp

```
<%@page contentType="text/html" import="java.sql.*"%>
<html><body>
      <h1>Registration JSP Page</h1>
   <%
      String uname=request.getParameter("txtName");
      String pass1 = request.getParameter("txtPass1");
      String pass2 = request.getParameter("txtPass2");
      String email = request.getParameter("txtEmail");
      String ctry = request.getParameter("txtCon");
 if(pass1.equals(pass2)){
      try{
   Class.forName("com.mysql.jdbc.Driver");
   Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/4c");
   PreparedStatement stmt = con.prepareStatement("insert into user values (?,?,?,?)");
   stmt.setString(1, uname);    stmt.setString(2, pass1);
   stmt.setString(3, email);    stmt.setString(4, ctry);
   int row = stmt.executeUpdate();
   if(row==1) { out.println("Registration Successful"); }
   else {
      out.println("Registration FFFFFAAAIIILLLL !!!!");
      %>
         <jsp:include page="Register.html" ></jsp:include>
      <%


      }
   }catch(Exception e){out.println(e);}
 }
 else
```

```
 {
 out.println("<h1>Password Mismatch</h1>");
 %>
 <jsp:include page="Register.html" ></jsp:include>
<%  }
  %>
  </body>
</html>
```

Login.html

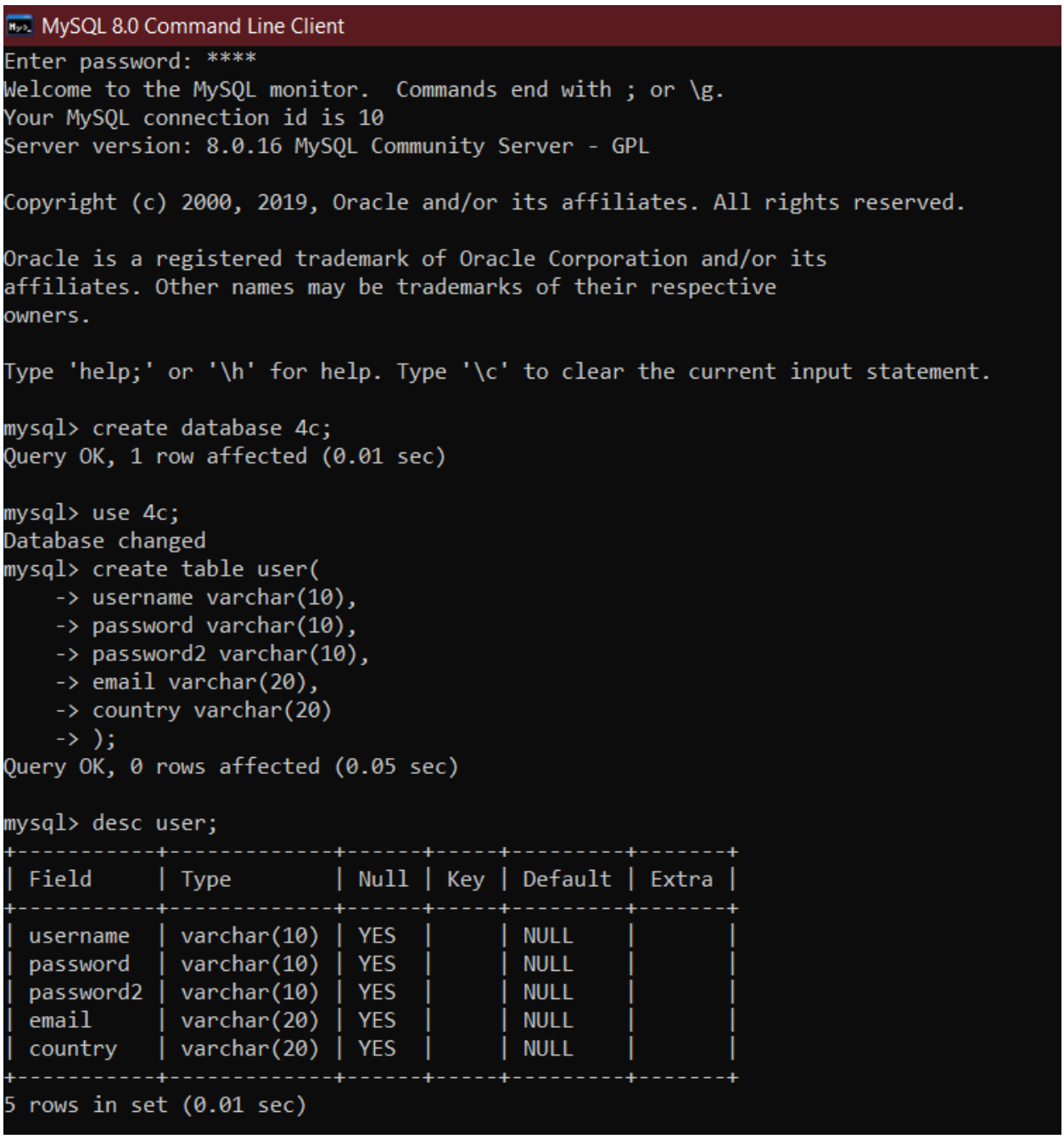
```
<html>
  <body>
     <h1>Login Page</h1>
     <form action="Login.jsp" >

        Enter User Name <input type="text" name="txtName" ><br>
        Enter Password <input type="password" name="txtPass" ><br>

        <input type="reset" ><input type="submit" value="~~~LOGIN~~" >
     </form>
  </body>
</html>
```

Login.jsp

```
<%@page contentType="text/html" import="java.sql.*"%>
<html><body>
     <h1>Registration JSP Page</h1>
  <%
     String uname=request.getParameter("txtName");
```

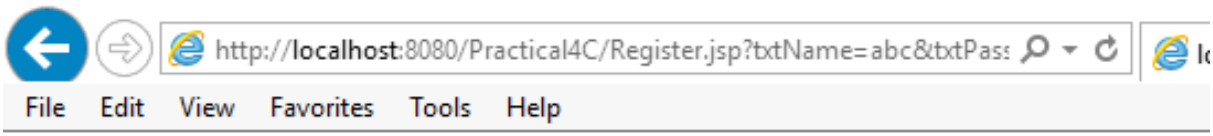
```
        String pass = request.getParameter("txtPass");



        try{
    Class.forName("com.mysql.jdbc.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/4c");
    PreparedStatement stmt = con.prepareStatement("select password from user where
username=?");
    stmt.setString(1, uname);
    ResultSet rs = stmt.executeQuery();
    if(rs.next()){
        if(pass.equals(rs.getString(1)))
        {
            out.println("<h1>~~~ LOGIN SUCCESSFULLL ~~~ </h1>");
        }
        }
    else{
    out.println("<h1>User Name not exist !!!!!</h1>");
    %>
    <jsp:include page="Register.html" ></jsp:include>
        <%
    }
        }catch(Exception e){out.println(e);}
   %>
    </body>
</html>
```

Output:


MySQL 8.0 Command Line Client
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.16 MySQL Community Server - GPL
Copyright (c) 2000, 2019, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> create database 4c;
Query OK, 1 row affected (0.01 sec)
mysql> use 4c;
Database changed
mysql> create table user(
-> username varchar(10),
-> password varchar(10),
-> password2 varchar(10),
-> email varchar(20),
-> country varchar(20)
->);
Query OK, 0 rows affected (0.05 sec)
mysql> desc user;
Field	Type	Null	Key	Default	Extra
username	varchar(10)	YES		NULL	
password	varchar(10)	YES		NULL	
password2	varchar(10)	YES		NULL	
email	varchar(20)	YES		NULL	
country	varchar(20)	YES		NULL	
5 rows in set (0.01 sec)

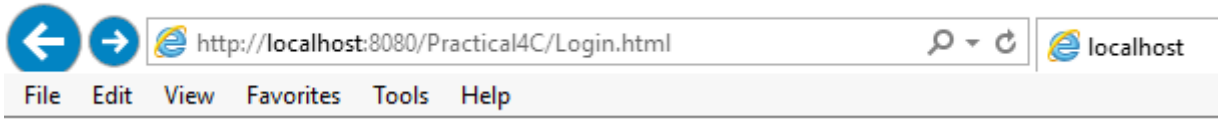
New User Registration Page

Enter User Name upg
Enter Password ••••••
Re-Enter Password ••••••
Enter Email abc@gmail.com
Enter Country Name india
Reset REGISTER



Registration JSP Page

Registration Successful

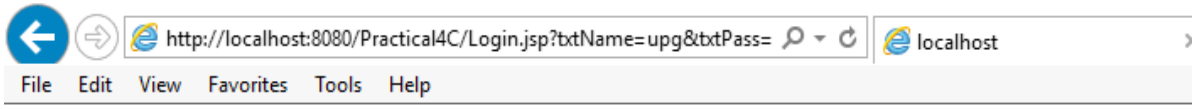


Login Page

Enter User Name upg

Enter Password ••••••

Reset ~~~LOGIN~~



Registration JSP Page

~~~ LOGIN SUCCESSFULLL ~~~

Practical-5

A) Aim: Create an html page with fields, eno, name, age, desg, salary. Now on submit this data to a JSP page which will update the employee table of database with matching eno.

Program Code:

index.html

```
<html>
   <body>
      <form action="UpdateEmp.jsp" >
         Enter Employee Number<input type="text" name="txtEno" ><br>
         Enter Name<input type="text" name="txtName" ><br>
         Enter age<input type="text" name="txtAge" ><br>
         Enter Salary<input type="text" name="txtSal" ><br>
         <input type="reset" ><input type="submit">

      </form>
   </body>
</html>
```

UpdateEmp.jsp

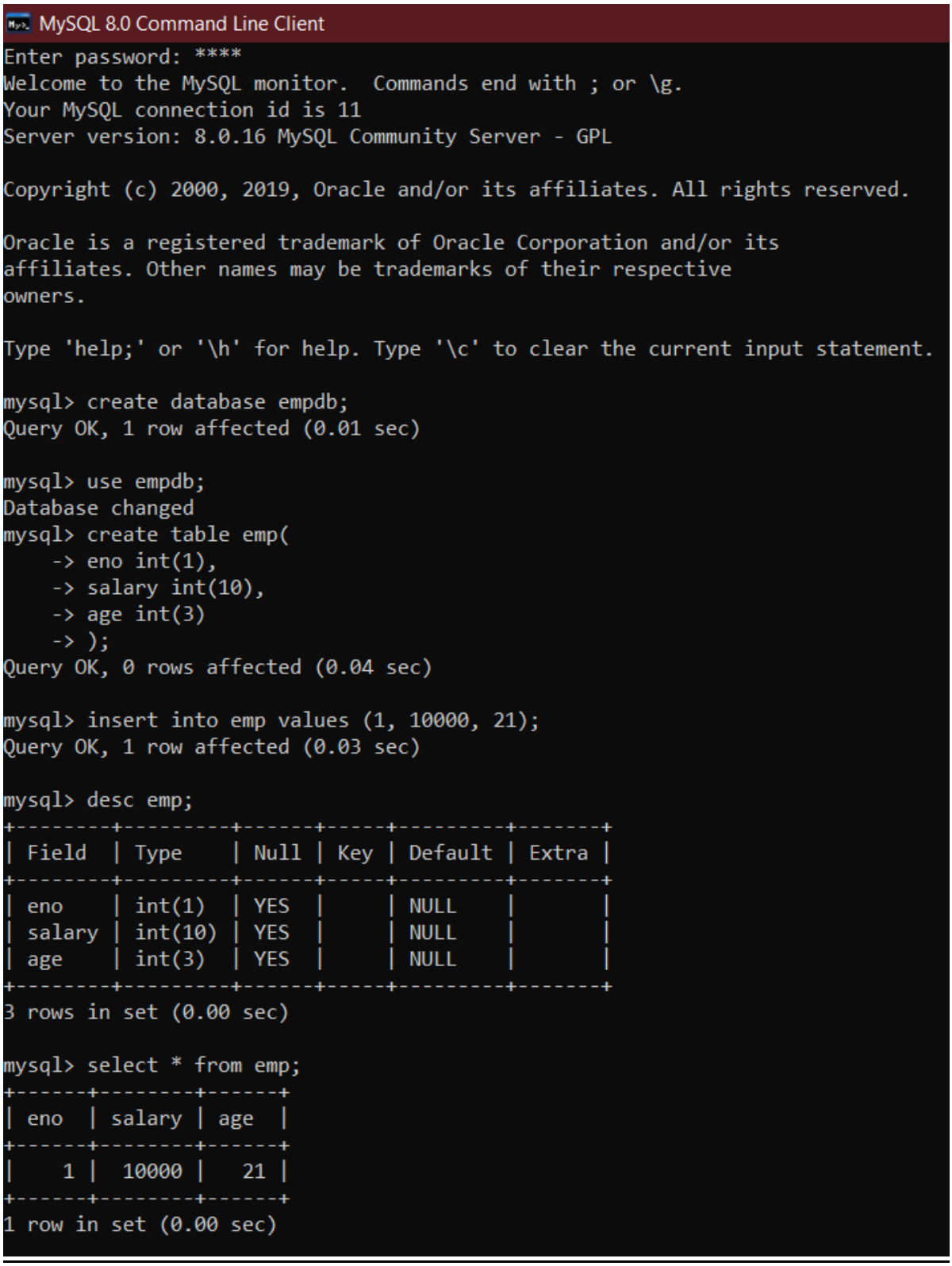
```
<%@page contentType="text/html" import="java.sql.*" %>
<html>
   <body>
      <h1>Employee Record Update</h1>
      <%
      String eno=request.getParameter("txtEno");
      String name=request.getParameter("txtName");
```

```
    String age = request.getParameter("txtAge");
    String sal = request.getParameter("txtSal");
        try{
  Class.forName("com.mysql.jdbc.Driver");
  Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/empdb");
  PreparedStatement stmt = con.prepareStatement("select * from emp where empid=?");
  stmt.setString(1, eno);
  ResultSet rs = stmt.executeQuery();
  if(rs.next()){
    out.println("<h1>~~~ Employee "+name+" Exist ~~~ </h1>");
    PreparedStatement pst1= con.prepareStatement("update emp set salary=? where
empid=?");
    PreparedStatement pst2= con.prepareStatement("update emp set age=? where
empid=?");
    pst1.setString(1, sal); pst1.setString(2, eno);
    pst2.setString(1, age); pst2.setString(2, eno);
    pst1.executeUpdate();      pst2.executeUpdate();
  }
  else{
  out.println("<h1>Employee Record not exist !!!!!</h1>");

  }
    }catch(Exception e){out.println(e);}
 %>

  </body>
</html>
```

Output:



```
MySQL 8.0 Command Line Client
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.16 MySQL Community Server - GPL

Copyright (c) 2000, 2019, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database empdb;
Query OK, 1 row affected (0.01 sec)

mysql> use empdb;
Database changed
mysql> create table emp(
    -> eno int(1),
    -> salary int(10),
    -> age int(3)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> insert into emp values (1, 10000, 21);
Query OK, 1 row affected (0.03 sec)

mysql> desc emp;
+--------+---------+------+-----+---------+-------+
| Field  | Type    | Null | Key | Default | Extra |
+--------+---------+------+-----+---------+-------+
| eno    | int(1)  | YES  |     | NULL    |       |
| salary | int(10) | YES  |     | NULL    |       |
| age    | int(3)  | YES  |     | NULL    |       |
+--------+---------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> select * from emp;
+------+--------+------+
| eno  | salary | age  |
+------+--------+------+
|    1 |  10000 |   21 |
+------+--------+------+
1 row in set (0.00 sec)
```

Enter Employee Number 1

Enter Name UPG

Enter age 21

Enter Salary 20000

Reset Submit

Employee Record Update

~~~ Employee UPG Exist ~~~

B) Aim: Create a JSP page to demonstrate the use of Expression language.

Program Code:

index.html

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <div>TODO write content</div>
            <a href="Bill.jsp">Click Here</a>
  </body>
</html>
```

Bill.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<html><head><title>JSP Page</title></head>
  <body>
    <h1>Expression Language Demo</h1>
    <%! java.util.Date dt = new java.util.Date(); %>
```

```
    <%! int val1 = 10, val2=20, result =0; %>
    <% application.setAttribute("val1",10); %>
    <% application.setAttribute("val2",20); %>
    <% application.setAttribute("result",0); %>
    <% application.setAttribute("dt",new java.util.Date()); %>
    <h1>First Number  is ${val1}</h1>
    <h1>Second Number  is ${val2}</h1>
    <h1>Sum  is ${val1+val2}</h1>
    <h1>Today is ${dt}</h1>
  </body>
</html>
```

Output:

Expression Language Demo

First Number is 10

Second Number is 20

Sum is 30

Today is Fri Sep 20 14:30:37 IST 2019

C) Aim: Create a JSP application to demonstrate the use of JSTL.

Program Code:

index.html

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in Project Properties.
To change this template file, choose Tools | Templates
and open the template in the editor.
-->
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <a href='Table.jsp' >Click to open program</a>
  </body>
</html>
```

Table.jsp

```
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<html>
  <body>
    <table border="1">
      <th>Number </th>
      <c:forEach var="i" begin="1" end="100" step="2" >
      <tr><td> <c:out value="${i}" /> <br /> </td></tr>
```

```
            </c:forEach>
        </table>
    </body>
</html>
```

Output:

Number
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41

Practical-6

A) Aim: Create a Currency Converter application using EJB.

Program Code:

index.html

```
<html><head><title>Currency Converter</title></head>
   <body>
      <form action="CCServlet" >
         Enter Amount <input type="text" name="amt"><br>
         Select Conversion Type
         <input type="radio" name="type" value="r2d" checked>Rupees to Dollar
         <input type="radio" name="type" value="d2r" >Dollor to Rupees<br>
         <input type="reset" ><input type="submit" value="CONVERT" >
      </form>
   </body>
</html>
```

CCServlet.java

```
package mypack;
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import javax.ejb.EJB;
import mybeans.CCBean;
public class CCServlet extends HttpServlet {
   @EJB CCBean obj;
public void doGet(HttpServletRequest request, HttpServletResponse response)
```

```
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
PrintWriter out = response.getWriter();
double amt = Double.parseDouble(request.getParameter("amt"));
if(request.getParameter("type").equals("r2d"))
{
out.println("<h1>"+amt+ " Rupees = "+obj.r2Dollor(amt)+" Dollors</h1>");
}
if(request.getParameter("type").equals("d2r"))
{
out.println("<h1>"+amt+ " Dollors = "+obj.d2Rupees(amt)+" Rupees</h1>");
}

}}
```

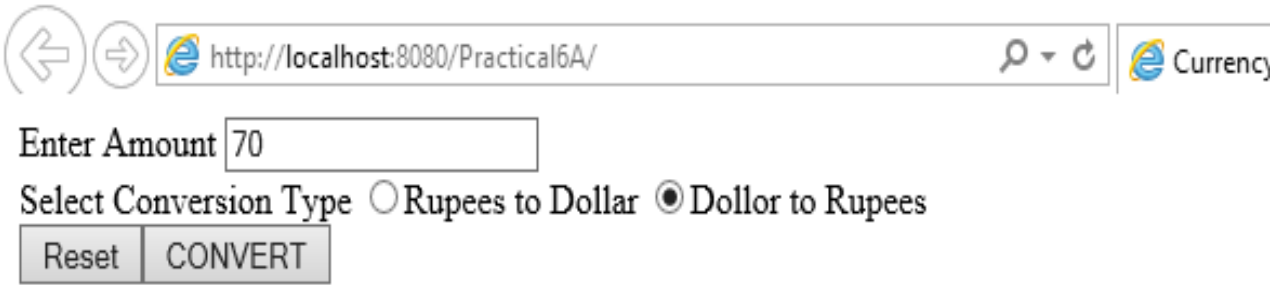
CCBean.java

```
package mybeans;

import javax.ejb.Stateless;

@Stateless
public class CCBean {
public CCBean(){}
public double r2Dollor(double r){   return r/65.65;  }
public double d2Rupees(double d){   return d*65.65;  }
}
```

Output:


http://localhost:8080/Practical6A/
Currency
Enter Amount 70
Select Conversion Type Rupees to Dollar Dollor to Rupees
Reset
CONVERT

localhost
70.0 Rupees = 1.0662604722010662 Dollors

B) Aim: Develop a Simple Room Reservation System Application Using EJB.

Program Code:

index.html

```
<html><head><title>Room Reservation System</title></head>
   <body>
      <h1><a href="Book.html" >Click to Book a Room</a></h1>
      <h1><a href="Cancle.html" >Click to Cancle a Room</a></h1>
   </body>
</html>
```

Book.html

```
<form action="RBServlet" >
   Select a room Type
   <input type="radio" name="txtType" value="Delux">Delux
   <input type="radio" name="txtType" value="Super Delux">Super Delux
   <input type="radio" name="txtType" value="Suit">Suit<br>
   Enter Your Name<input type="text" name="txtCust" ><br>
   Enter Mobile No.<input type="text" name="txtMob" ><br>
   <input type="reset" ><input type="submit" value="Book Room">
</form>
```

RBServlet.java

```
package mypack;

import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import javax.ejb.EJB;
```

```
import mybeans.RRBean;
public class RBServlet extends HttpServlet {
@EJB RRBean obj;
public void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException{
PrintWriter out=response.getWriter();
String rt=request.getParameter("txtType");
String cn=request.getParameter("txtCust");
String cm=request.getParameter("txtMob");
String msg = obj.roomBook(rt, cn, cm);
      out.println(msg);
}
}
```

RRBean.java

```
package mybeans;
import javax.ejb.Stateless;
import java.sql.*;
@Stateless
public class RRBean {
public RRBean(){}
public String roomBook(String rt, String cn, String cm){
String msg="";
try{
Class.forName("com.mysql.jdbc.Driver");
Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/rrdb","root","root");
String query="select * from roombook where RoomType=? and status='Not Booked'";
PreparedStatement pst = con.prepareStatement(query);
pst.setString(1,rt);
```

```
ResultSet rs= pst.executeQuery();

if(rs.next()){

   String rno=rs.getString(1);

PreparedStatement stm1 = con.prepareStatement("update roombook set cust=? where RoomId=? ");

PreparedStatement stm2 = con.prepareStatement("update roombook set mobile=? where RoomId=? ");

PreparedStatement stm3 = con.prepareStatement("update roombook set status=? where RoomId=? ");

stm1.setString(1,cn);       stm1.setString(2,rno);

stm2.setString(1,cm);       stm2.setString(2,rno);

stm3.setString(1, "Booked"); stm3.setString(2,rno);

stm1.executeUpdate();

stm2.executeUpdate();

stm3.executeUpdate();

msg = "Room "+rno+ " Booked <br> Charges = "+rs.getString(3);

}

else

{

msg = "Room "+rt+ " currently Not available";

}

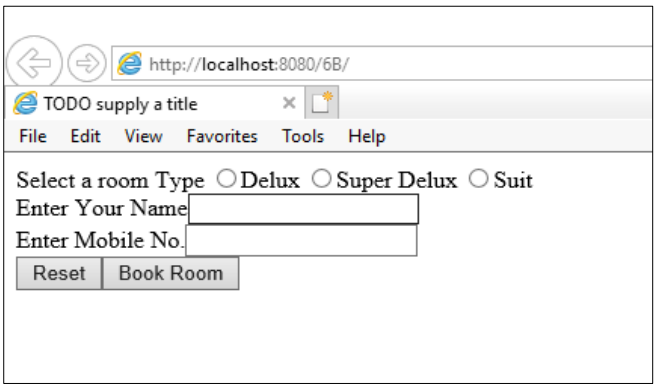
}catch(Exception e){msg=""+e;}

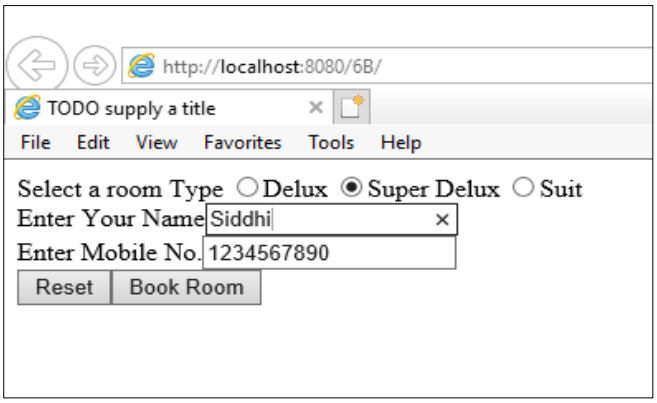
return msg;

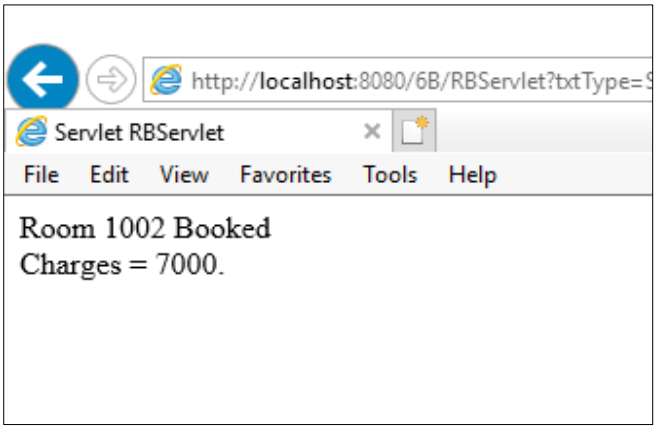
}

}
```

Output:







C:\Program Files (x86)\MySQL\MySQL Server 5.0\bin\mysql.exe

```
mysql> select * from roombook;
+--------+------------+---------+------+------+------------+
| RoomId | RoomType   | charges | cust | mob  | status     |
+--------+------------+---------+------+------+------------+
| 1001   | Delux      | 5000.   |      |      | Not Booked |
| 1002   | Super Delux | 7000.   |      |      | Not Booked |
| 1003   | Suit       | 9500.   |      |      | Not Booked |
| 2001   | Delux      | 5000.   |      |      | Not Booked |
| 2002   | Super Delux | 7000.   |      |      | Not Booked |
| 2003   | Suit       | 9500.   |      |      | Not Booked |
+--------+------------+---------+------+------+------------+
6 rows in set (0.00 sec)

mysql> select * from roombook;
+--------+------------+---------+--------+------------+------------+
| RoomId | RoomType   | charges | cust   | mob        | status     |
+--------+------------+---------+--------+------------+------------+
| 1001   | Delux      | 5000.   |        |            | Not Booked |
| 1002   | Super Delux | 7000.   | Siddhi | 1234567890 | Booked     |
| 1003   | Suit       | 9500.   |        |            | Not Booked |
| 2001   | Delux      | 5000.   |        |            | Not Booked |
| 2002   | Super Delux | 7000.   |        |            | Not Booked |
| 2003   | Suit       | 9500.   |        |            | Not Booked |
+--------+------------+---------+--------+------------+------------+
6 rows in set (0.00 sec)

mysql>
```

C) Aim: Develop simple shopping cart application using EJB [Stateful Session Bean].

Program Code:

index.jsp

```
<%@page import="java.util.Iterator, java.util.List, javax.naming.InitialContext, ejb.ShoppingCart"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%!
   private static ShoppingCart cart;
   public void jspInit() {
      try {
         InitialContext ic = new InitialContext();
         cart = (ShoppingCart) ic.lookup("java:global/ShoppingCart/ShoppingCart");
      } catch (Exception ex) {
         System.out.println("Could not create cart bean." + ex.getMessage());
      }
   }
%>
<%
   if(request.getParameter("txtCustomerName") != null) {
      cart.initialize(request.getParameter("txtCustomerName"));
   } else {
      cart.initialize("Guest");
   }
   if (request.getParameter("btnRmvBook") != null) {
      String books[] = request.getParameterValues("chkBook");
      if (books != null) {
```

```
            for (int i=0; i<books.length; i++) {
                cart.removeBook(books[i]);
            }
        }
    }
    if (request.getParameter("btnAddBook") != null) {
        String books[] = request.getParameterValues("chkBook");
        if (books != null) {
            for (int i=0; i<books.length; i++) {
                cart.addBook(books[i]);
            }
        }
    }
%>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Shopping Cart</title>
    </head>
    <body style="background-color: pink;">
        <h1 style="text-align: center;">Books For Sale</h1><br>
        <form name="frmBooks" method="post">
            <table style="background-color: pink; width: 100%; padding: 1px; border-spacing: 1px;">
                <tr style="background-color: pink;">
                    <td style="width: 70%">
                        <table style="padding: 1px 1px 1px 1px; border-spacing: 1px; border: 2px solid maroon; width: 400px;">
                            <tr>
                                <td style="border: 2px solid maroon;">Customer</td>
```

```
                    <td style="border: 2px solid maroon;">
                        <input type="text" name="txtCustomerName" value=<%=
request.getParameter("txtCustomerName")%> />
                    </td>
                </tr>
                <tr style="background-color: maroon;">
                    <th style="text-align: left; width: 340px; color: white; border: 2px solid
maroon;" colspan="2">
                        <b>Book Titles</b>
                    </th>
                </tr>
                <tr>
                    <td style="border: 2px solid maroon;">
                        <input type="checkbox" name="chkBook" value="Struts 2.0 For
Beginners">
                    </td>
                    <td style="width: 340px; border: 2px solid maroon;">Struts 2.0 For
Beginners</td>
                </tr>
                <tr>
                    <td style="border: 2px solid maroon;">
                        <input type="checkbox" name="chkBook" value="Oracle 11g For
Professionals">
                    </td>
                    <td style="width: 340px; border: 2px solid maroon;">Oracle 11g For
Professionals</td>
                </tr>
                <tr>
                    <td style="border: 2px solid maroon;">
                        <input type="checkbox" name="chkBook" value="Hibernate 3 For
Beginners">
                    </td>
```

```
                    <td style="width: 340px; border: 2px solid maroon;">Hibernate 3 For
Beginners</td>
                </tr>
                <tr>
                    <td style="border: 2px solid maroon;">
                        <input type="checkbox" name="chkBook" value="Java Persistence API
In EJB 3 For Beginners">
                    </td>
                    <td style="width: 340px; height: 24px; border: 2px solid maroon;">Java
Persistence API In EJB 3 For Beginners</td>
                </tr>
                <tr>
                    <td colspan="4" style="border: 2px solid maroon;">
                        <table style="background-color: pink; text-align: center;">
                            <tr>
                                <td style="text-align: center;">
                                    <input type='submit' value='Add To My Basket'
name='btnAddBook'>
                                </td>
                                <td style="text-align: center;">
                                    <input type='submit' value='Remove From My Basket'
name='btnRmvBook'>
                                </td>
                            </tr>
                        </table>
                    </td>
                </tr>
            </table>
        </td>
        <td>
```

```
                <table style="border: 1px solid blue; width: 300px; height: 180px; text-align: right;">
                    <tr>
                        <td style="text-align: center; background-color: lightblue; border: 1px solid blue; height: 20px;">Basket</td>
                    </tr>
            <%
               if(cart!=null){
                  List<String> bookList = cart.getContents();
                  Iterator iterator = bookList.iterator();
                  while (iterator.hasNext()) {
                     String title = (String) iterator.next();
            %>
                    <tr>
                        <td style="text-align: left; background-color: lightblue; border: 1px solid blue;"><%= title %></td>
                    </tr>
            <%
                  }
               }
            %>
                </table>
               </td>
            </tr>
         </table>
      </form>
   </body>
</html>
```

ShoppingCart.java

```
package ejb;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.List;
import javax.ejb.Remove;
import javax.ejb.Stateful;

@Stateful
public class ShoppingCart {
   List<String> contents;
   String customerName;

   private Connection conn = null;
   private ResultSet rs;
   private Statement stmt = null;
   private String query = null;

   public void initialize(String person) {
      if (person != null) {
         customerName = person;
         try {
            Class.forName("com.mysql.jdbc.Driver").newInstance();
            conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/mysql", "root",
"root");
```

```
        } catch(ClassNotFoundException | IllegalAccessException | InstantiationException |
SQLException e) {
            System.err.println("Sorry failed to connect to the Database." + e.getMessage());
        }
    }
    contents = new ArrayList<>();
  }

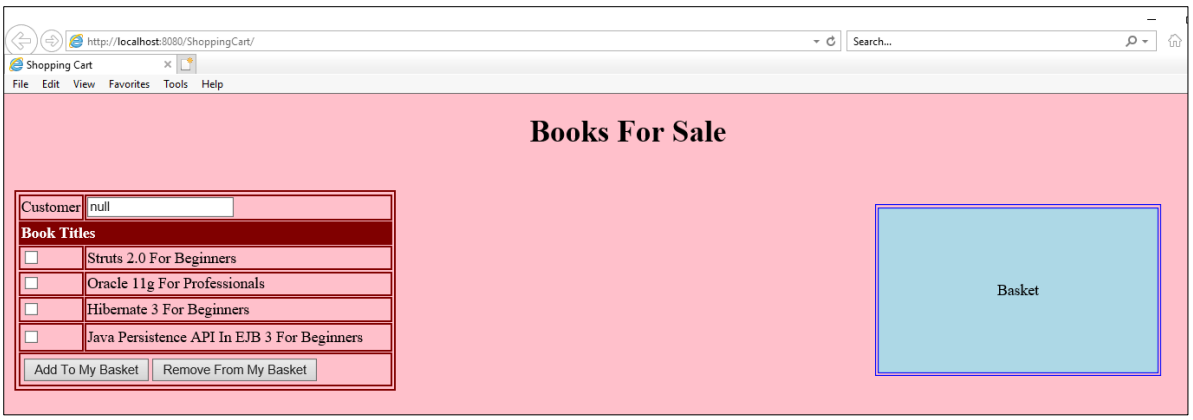
  public void addBook(String title) {
    try {
      stmt = conn.createStatement();
      query = "INSERT INTO cart VALUES('" + customerName + "','" + title + "')";
      stmt.executeUpdate(query);
    } catch(SQLException e) {
      System.err.println("Sorry failed to insert values from the database table. " +
e.getMessage());
    }
  }

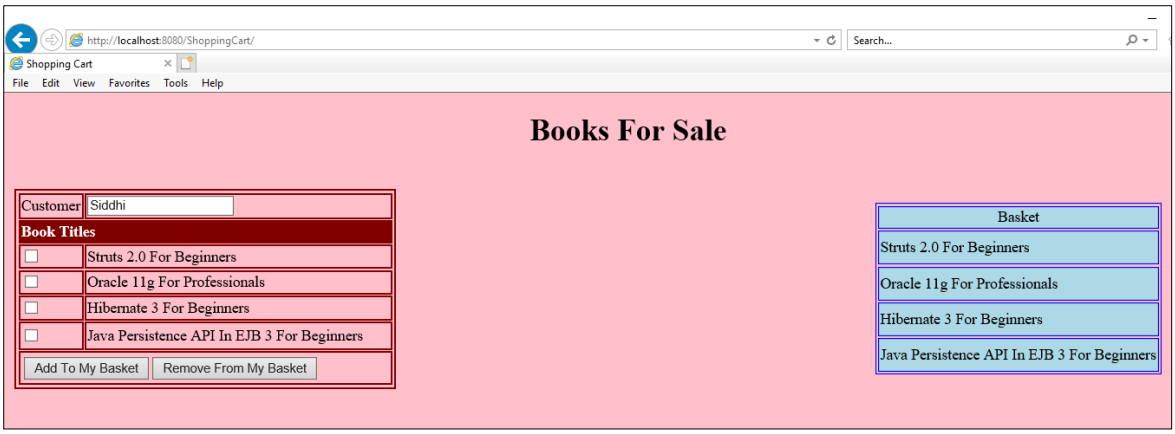
  public void removeBook(String title) {
    try {
      stmt = conn.createStatement();
      query = "DELETE FROM cart WHERE uname='" + customerName + "' AND
itemname='" + title + "'";
      stmt.executeUpdate(query);
    } catch(SQLException e) {
      System.err.println("Sorry failed to delete values from the database table. " +
e.getMessage());
    }
  }
```

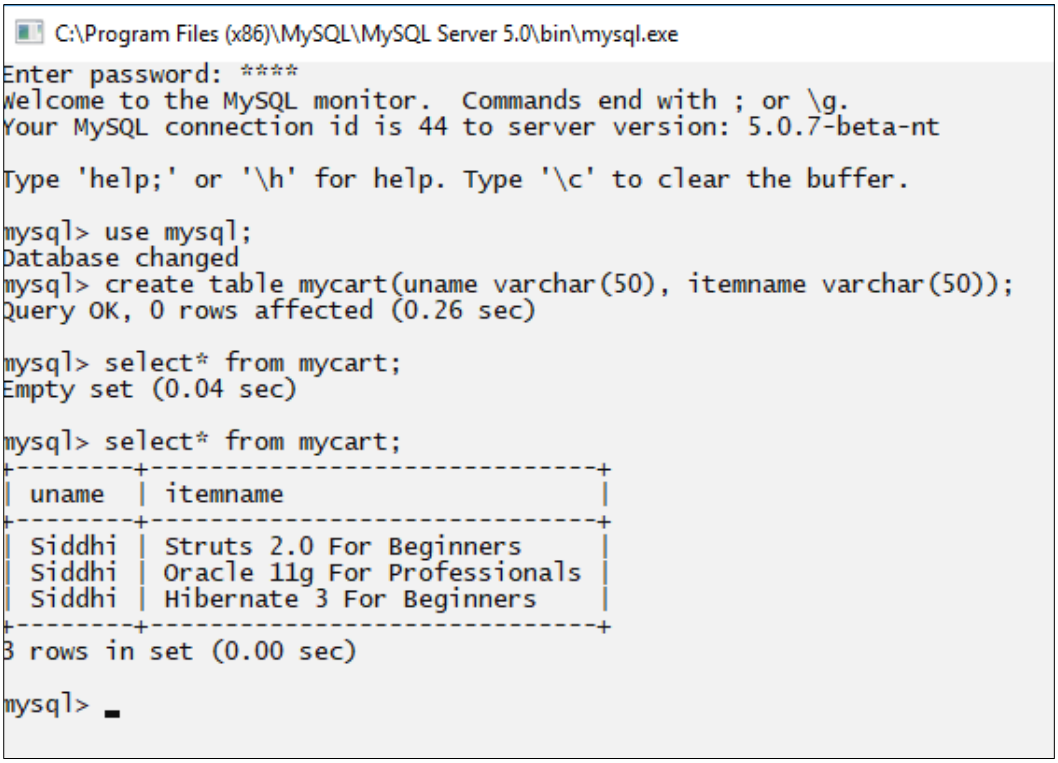
```
    public List<String> getContents() {
        try {
            stmt = conn.createStatement();
            query = "SELECT * FROM cart WHERE uname='" + customerName + "'";
            rs = stmt.executeQuery(query);
            while(rs.next()) {
                contents.add(rs.getString("itemname"));
            }
        } catch(SQLException e) {
            System.err.println("Sorry failed to select values from the database table. " +
e.getMessage());
        }
        return contents;
    }

    @Remove()
    public void remove() {
        contents = null;
    }
}
```

Output:




http://localhost:8080/ShoppingCart/
Search...
Shopping Cart
File Edit View Favorites Tools Help
Books For Sale
Customer
Siddhi
Book Titles
Struts 2.0 For Beginners
Oracle 11g For Professionals
Hibernate 3 For Beginners
Java Persistence API In EJB 3 For Beginners
Add To My Basket
Remove From My Basket
Basket
Struts 2.0 For Beginners
Oracle 11g For Professionals
Hibernate 3 For Beginners
Java Persistence API In EJB 3 For Beginners


C:\Program Files (x86)\MySQL\MySQL Server 5.0\bin\mysql.exe
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 44 to server version: 5.0.7-beta-nt
Type 'help;' or '\h' for help. Type '\c' to clear the buffer.
mysql> use mysql;
Database changed
mysql> create table mycart(uname varchar(50), itemname varchar(50));
Query OK, 0 rows affected (0.26 sec)
mysql> select* from mycart;
Empty set (0.04 sec)
mysql> select* from mycart;
+--------+-----------------------------+
| uname | itemname |
+--------+-----------------------------+
Siddhi	Struts 2.0 For Beginners
Siddhi	Oracle 11g For Professionals
Siddhi	Hibernate 3 For Beginners
+--------+-----------------------------+
3 rows in set (0.00 sec)
mysql>

Practical-7

A) Aim: Develop simple EJB application to demonstrate Servlet Hit count using Singleton Session Beans.

Program Code:

index.xhtml

```
<?xml version='1.0' encoding='UTF-8' ?>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml"

    xmlns:h="http://xmlns.jcp.org/jsf/html">

  <h:head>

     <title>Page Hit Counter using Singleton EJB </title>

  </h:head>

  <h:body>

     <h1>Welcome to Hit Count Page</h1>

    Page was hit  #{count.hitCount}   times

  </h:body>

</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd">
    <context-param>
        <param-name>javax.faces.PROJECT_STAGE</param-name>
        <param-value>Development</param-value>
    </context-param>
    <servlet>
        <servlet-name>Faces Servlet</servlet-name>
        <servlet-class>javax.faces.webapp.FacesServlet</servlet-
class>
        <load-on-startup>1</load-on-startup>
```

```
    </servlet>
    <servlet-mapping>
        <servlet-name>Faces Servlet</servlet-name>
        <url-pattern>/faces/*</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>faces/index.xhtml</welcome-file>
    </welcome-file-list>
</web-app>
```

Count.java

```
package mypack;

import java.io.Serializable;

import javax.ejb.EJB;

import javax.enterprise.context.ConversationScoped;

import javax.inject.Named;

import counter.ejb.CounterBean;

@Named("count")

@ConversationScoped

public class Count implements Serializable {

   @EJB

   private CounterBean counterBean;


   private int hitCount;


   public Count() {

      this.hitCount = 0;

   }


   public int getHitCount() {
```

```
        hitCount = counterBean.getHits();
        return hitCount;
    }

    public void setHitCount(int newHits) {
        this.hitCount = newHits;
    }
}
```

CounterBean.java

```
package counter.ejb;
import javax.ejb.Singleton;

@Singleton
public class CounterBean {
    private int hits = 1;
    // Increment and return the number of hits
    public int getHits() {
        return hits++;
    }
}
```

Output:

B) Aim: Develop simple visitor Statistics application using Message Driven Bean [Stateless Session Bean].

Program Code:

index.jsp

```
<%@page import="javax.jms.JMSException, javax.naming.InitialContext,
javax.jms.TextMessage, javax.jms.MessageProducer, javax.jms.Session,
javax.jms.Connection, javax.jms.Queue, javax.jms.ConnectionFactory" %>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%!
   private static ConnectionFactory connectionFactory;
   private static Queue queue;

   Connection connection = null;
   Session mysession = null;
   MessageProducer messageProducer = null;
   TextMessage message = null;
%>
<html>
   <head>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
      <title>Welcome To Enterprise Java Home Page</title>
   </head>
   <body style="background-color: pink;">
      <h1>Welcome To Enterprise Java Home Page</h1>
<%
   try {
      InitialContext ctx = new InitialContext();
      queue = (Queue) ctx.lookup("jms/Queue");
```

```
        connectionFactory = (ConnectionFactory) ctx.lookup("jms/QueueFactory");

        connection = connectionFactory.createConnection();
        mysession = connection.createSession(false, Session.AUTO_ACKNOWLEDGE);
        messageProducer = mysession.createProducer(queue);
        message = mysession.createTextMessage();

        message.setText(request.getRemoteAddr());
        messageProducer.send(message);
    } catch (JMSException e) {
        System.out.println("Exception occurred: " + e.toString());
    }
%>
    </body>
</html>
```

newjsp.jsp

```
<%--
    Document   : newjsp
    Created on : Jun 20, 2019, 10:18:39 AM
    Author     : admin
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
```

```
  </head>
  <body>
    <h1>Hello World! Enterprise Java</h1>
    <h1><%=new java.util.Date()%></h1>
    <h1>3+4 is: <%=3+4%></h1>

  </body>
</html>
```

BasicMessageBean.java

```
package ejb;

import javax.annotation.Resource;
import javax.ejb.ActivationConfigProperty;
import javax.ejb.EJB;
import javax.ejb.MessageDriven;
import javax.ejb.MessageDrivenContext;
import javax.jms.JMSException;
import javax.jms.Message;
import javax.jms.MessageListener;
import javax.jms.TextMessage;

@MessageDriven(activationConfig = {
  @ActivationConfigProperty(propertyName = "destinationType", propertyValue =
"javax.jms.Queue"),
  @ActivationConfigProperty(propertyName = "destinationLookup", propertyValue =
"jms/Queue")
})
public class BasicMessageBean implements MessageListener {
  @EJB
```

```
    VisitorStatBean vs;

    @Resource
    private MessageDrivenContext mdc;

    public BasicMessageBean() {
    }

    @Override
    public void onMessage(Message message) {
        try {
            if (message instanceof TextMessage) {
                TextMessage msg = (TextMessage) message;
                vs.addVisitor(msg.getText());
            }
        } catch (JMSException e) {
            mdc.setRollbackOnly();
        }
    }
}
```

VisitorStatBean.java

```
package ejb;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
```

```
import javax.annotation.PostConstruct;
import javax.annotation.PreDestroy;
import javax.ejb.Stateless;

@Stateless
public class VisitorStatBean {
   private Connection conn = null;
   private ResultSet rs;
   private Statement stmt = null;
   private String query = null;

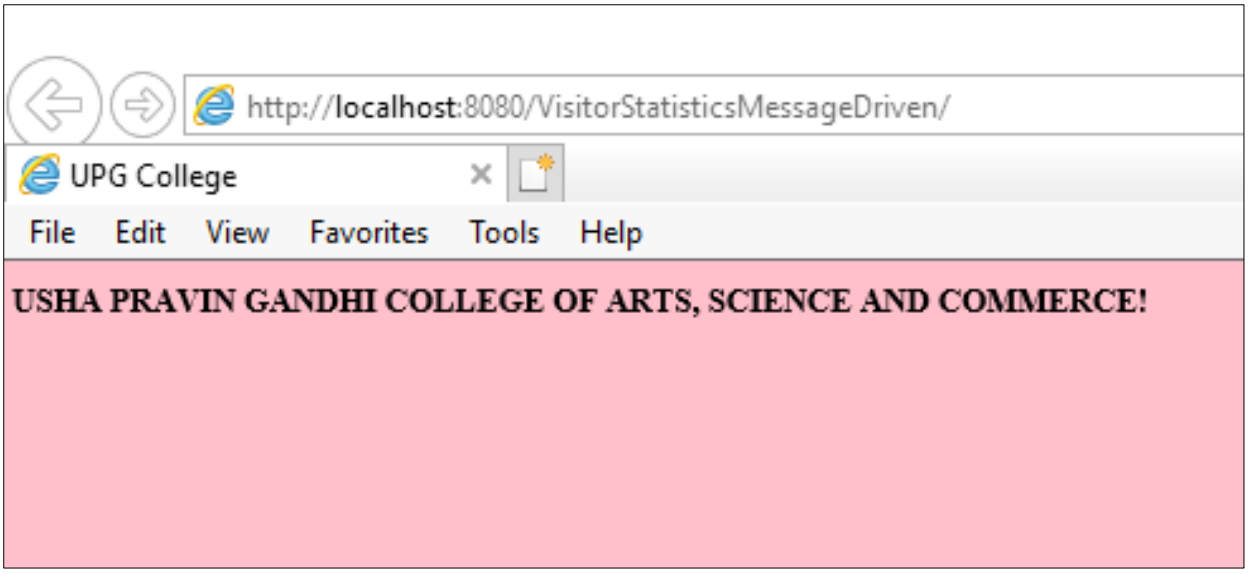
   @PostConstruct
   public void connect() {
      try {
         Class.forName("com.mysql.jdbc.Driver").newInstance();
         conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/visitorstat",
"root", "root");
         System.out.println("Database connection established successfully.");
      } catch(ClassNotFoundException | InstantiationException | IllegalAccessException |
SQLException e) {
         System.err.println("Sorry failed to connect to the Database.");
      }
   }

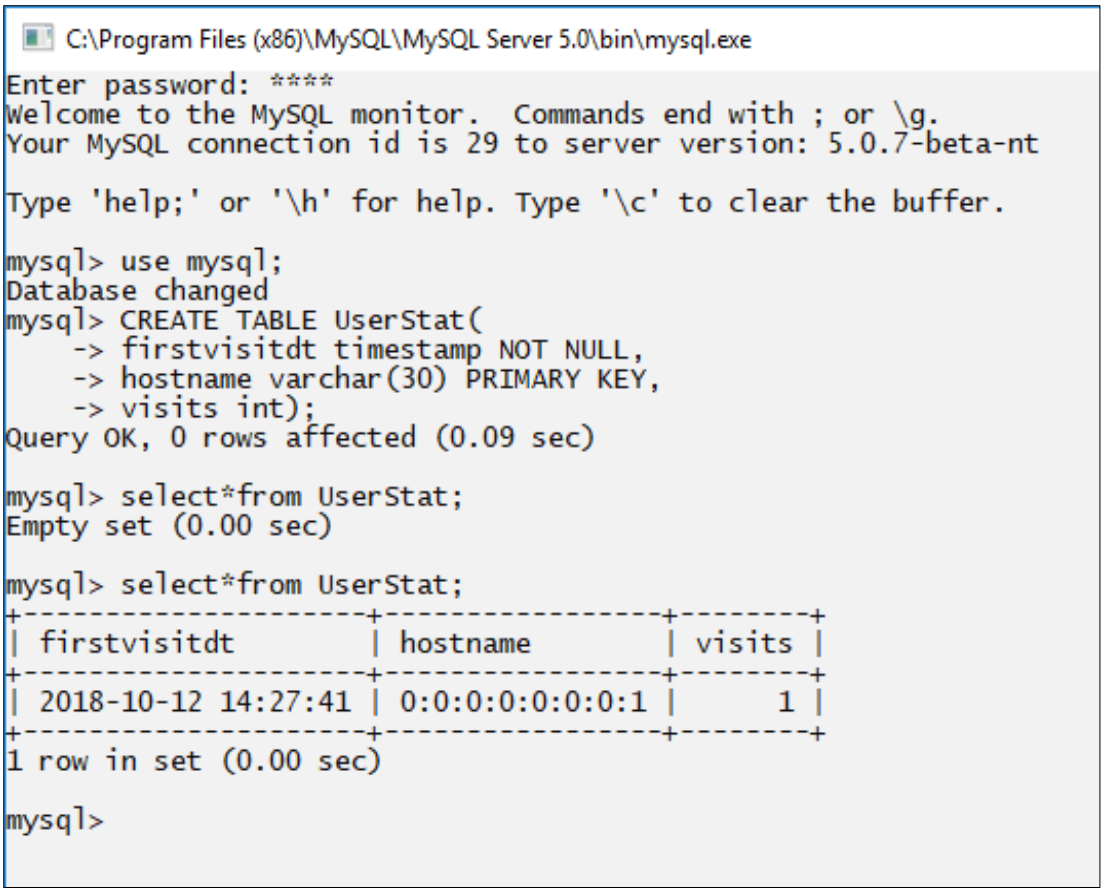
   @PreDestroy
   public void disconnect() {
      try {
         conn.close();
         System.out.println("Database connection closed successfully.");
      } catch(SQLException e) {
```

```
            System.err.println("Cannot close the database connection: " + e.getMessage());
        }
    }

    public void addVisitor(String host) {
        try {
            stmt = conn.createStatement();
            query = "INSERT INTO UserStat (hostname, visits) VALUES('" + host + "','1')";
            stmt.executeUpdate(query);
        } catch(SQLException e) {
            try {
                stmt = conn.createStatement();
                query = "UPDATE UserStat SET visits = visits + 1 WHERE hostname = '" + host + "'";
                stmt.executeUpdate(query);
            } catch(SQLException ex) {
                System.err.println("Cannot update: " + ex.getMessage());
            }
        }
    }
}
```

Output:


http://localhost:8080/VisitorStatisticsMessageDriven/
UPG College
File Edit View Favorites Tools Help
USHA PRAVIN GANDHI COLLEGE OF ARTS, SCIENCE AND COMMERCE!


C:\Program Files (x86)\MySQL\MySQL Server 5.0\bin\mysql.exe
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 29 to server version: 5.0.7-beta-nt
Type 'help;' or '\h' for help. Type '\c' to clear the buffer.
mysql> use mysql;
Database changed
mysql> CREATE TABLE UserStat(
-> firstvisitdt timestamp NOT NULL,
-> hostname varchar(30) PRIMARY KEY,
-> visits int);
Query OK, 0 rows affected (0.09 sec)
mysql> select*from UserStat;
Empty set (0.00 sec)
mysql> select*from UserStat;
+---------------------+-----------------+--------+
| firstvisitdt | hostname | visits |
+---------------------+-----------------+--------+
| 2018-10-12 14:27:41 | 0:0:0:0:0:0:0:1 | 1 |
+---------------------+-----------------+--------+
1 row in set (0.00 sec)
mysql>

C) **Aim:** Develop simple Marks Entry Application to demonstrate accessing Database using EJB.

Program Code:

index.html

```
<html>
   <head>
      <title>TODO supply a title</title>
      <meta charset="UTF-8">
      <meta name="viewport" content="width=device-width, initial-scale=1.0">
   </head>
   <body>
      <form action="RBServlet" >
Enter Student Name<input type="text" name="txtCust" ><br>
Enter Subject<input type="text" name="sub"><br>
Enter Marks<input type="text" name="txtMob" ><br>
<input type="reset" value="RE-ENTER"><input type="submit" value="SUBMIT">
</form>
   </body>
</html>
```

RBServlet.java

```
package mypack;

import java.io.IOException;
import java.io.PrintWriter;
import javax.ejb.EJB;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;


public class RBServlet extends HttpServlet {
      @EJB RRBean obj;
   protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
          throws ServletException, IOException {
       response.setContentType("text/html;charset=UTF-8");
       {
          try (PrintWriter out = response.getWriter()) {


             String s=request.getParameter("sub");
             String n=request.getParameter("txtCust");
             String m=request.getParameter("txtMob");
             String msg = obj.markenter(n, s, m);
             response.setContentType("text/html;charset=UTF-8");
          out.println(msg);
          out.println("<!DOCTYPE html>");
          out.println("<html>");
          out.println("<head>");
          out.println("<title>Servlet RBServlet</title>");
          out.println("</head>");
          out.println("<body>");
          out.println("<h1>Records Inserted Successfully</h1>");
          out.println("</body>");


          out.println("</html>");
       }
   }
   }
```

RRBean.java

```
package mypack;

import javax.ejb.Stateless;

import java.sql.*;


@Stateless

public class RRBean {

public RRBean(){}

public String markenter(String n, String s,String m){

   String msg;

try{

Class.forName("com.mysql.jdbc.Driver");

Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/rrdb","root","root123");

String query="insert into student1 values(?,?,?)";

PreparedStatement pst = con.prepareStatement(query);

pst.setString(1,n);

pst.setString(2,s);

pst.setString(3,m);

pst.executeUpdate();


msg="Marks entered";

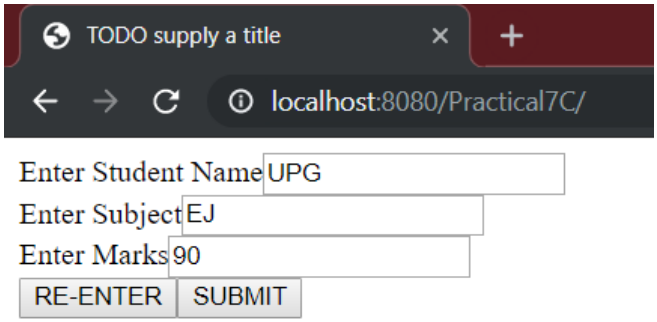
}

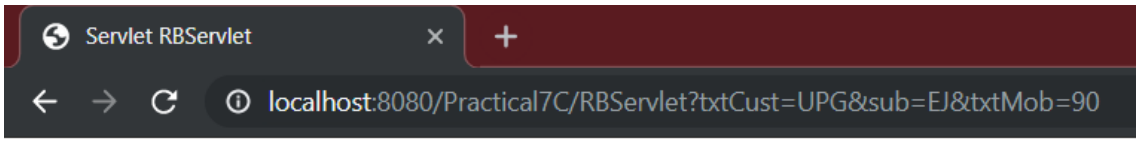
catch(Exception e){msg=""+e;}

return msg;

}

}
```





Records Inserted Successfully

```
MySQL 8.0 Command Line Client
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.16 MySQL Community Server - GPL

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database rrdb;
Query OK, 1 row affected (0.06 sec)

mysql> use rrdb;
Database changed
mysql> create table student1(
    -> name varchar(20),
    -> subject varchar(20),
    -> marks varchar(20)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> select * from student1;
Empty set (0.01 sec)

mysql> desc student1;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| name    | varchar(20) | YES  |     | NULL    |       |
| subject | varchar(20) | YES  |     | NULL    |       |
| marks   | varchar(20) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.02 sec)
```