

Practical No. 2(a)

Q. 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.

Steps to perform for database and table creation:

1. Select **services**->expand **databases**->right click on **MySQLserver at localhost:3306[disconnected]** ->click on connect-> **OK**
2. Right click on **MySQL server at localhost:3306[root]**-> select **Create database** -> enter database name and select the check box to grant permission.
3. Right click on **Table** under your database
4. Enter table name user by replacing untitled. Click on **Add column**, name -> **username**, type-> **varchar**, size-> **20**, select checkbox of **primary key**, again click on **Add column**, name -> **password** varchar size 20, again click on Add column name -> **emailid** varchar (20), again click **Add column** name -> **country** varchar 10;
5. Add **mysql-connector to the library folder** of the current application.

index.html

```
<html>
  <head>
    <title>Registration Details</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <form action="RegistrationServlet" method="post">
      Username: <input type="text" name="uname"><br><br>
      Password: <input type="password" name="pw"><br><br>
      Email Id: <input type="text" name="email"><br><br>
      Country: <select name="coun">
        <option> select...
        <option> India
        <option> Bangladesh
        <option> Bhutan
        <option> Canada
      </select> <br><br>
      <input type="Submit" value="Register">
    </form>
  </body>
```

</html>

RegistrationServlet.java

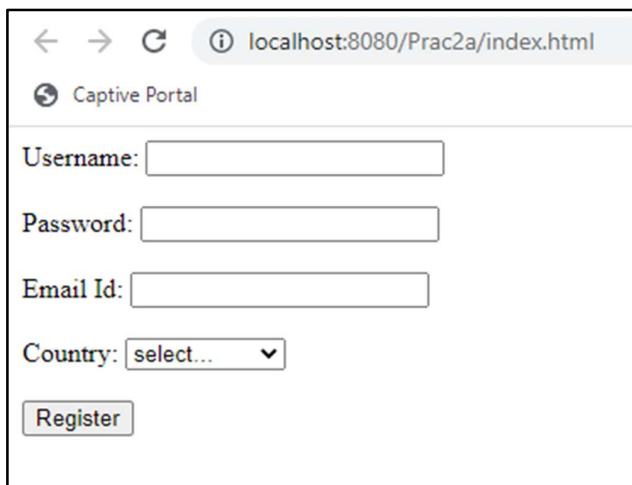
```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import java.sql.*;

public class RegistrationServlet extends HttpServlet {

    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        Connection con=null;
        PreparedStatement ps =null;
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        String username=request.getParameter("uname");
        String password=request.getParameter("pw");
        String emailid=request.getParameter("email");
        String country=request.getParameter("coun");
        try
        {
            Class.forName("com.mysql.jdbc.Driver");
            con=DriverManager.getConnection("jdbc:mysql://localhost:3306/mydatabase","root","");
;
            out.println("connection done successfully...");
            ps=con.prepareStatement("insert into user values(?,?,?,?)");
            ps.setString(1,username);
            ps.setString(2,password);
            ps.setString(3,emailid);
            ps.setString(4,country);
            ps.execute();
            out.print("Data inserted successfully!!!!");
        }
    }
}
```

```
catch(ClassNotFoundException | SQLException e)
{
    out.println(e);
}
out.println("<br>"+ "<br>");
}
}
```

Output:



← → ↻ ⓘ localhost:8080/Prac2a/index.html

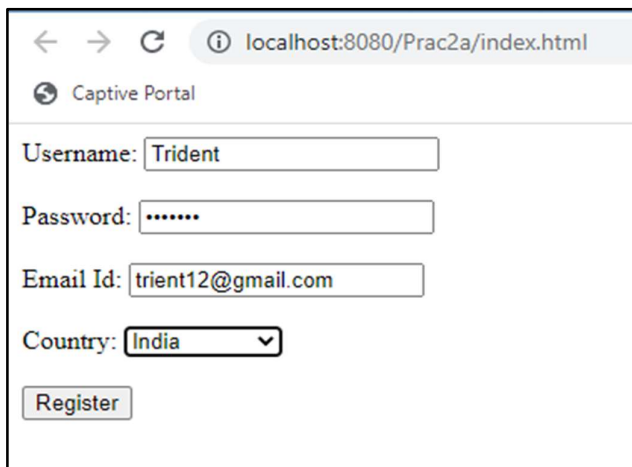
🌐 Captive Portal

Username:

Password:

Email Id:

Country:



← → ↻ ⓘ localhost:8080/Prac2a/index.html

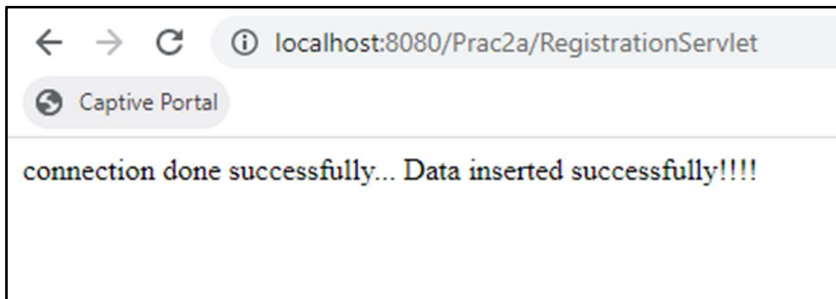
🌐 Captive Portal

Username:

Password:

Email Id:

Country:



A screenshot of a database query result window. The title bar shows the query: `SELECT * FROM 'user' LIMIT...`. The window includes a toolbar with icons for various database operations. Below the toolbar, there is a table with the following data:

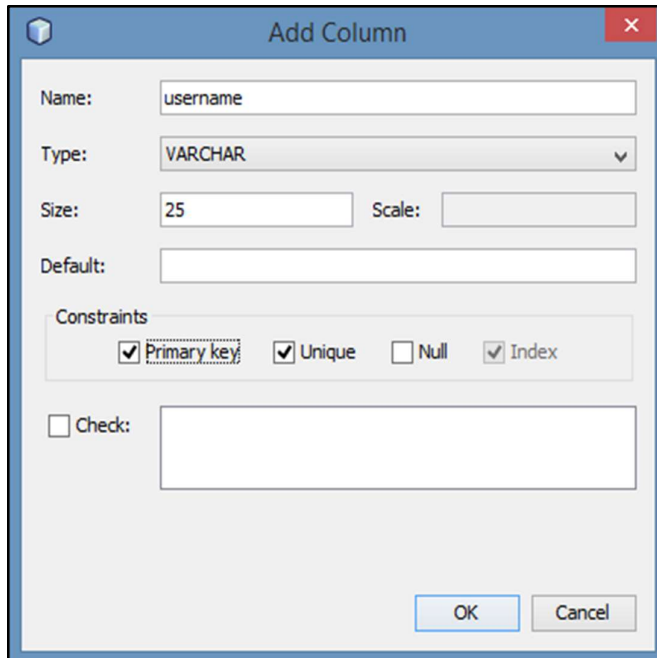
#	username	password	emailid	country
1	Trident	pass123	trient12@gmail.com	India

The table has a scrollbar on the right side, and the first row is highlighted. The status bar at the bottom shows "Max. rows: 100" and "Fetched Rows: 1".

Practical No. 2(b)

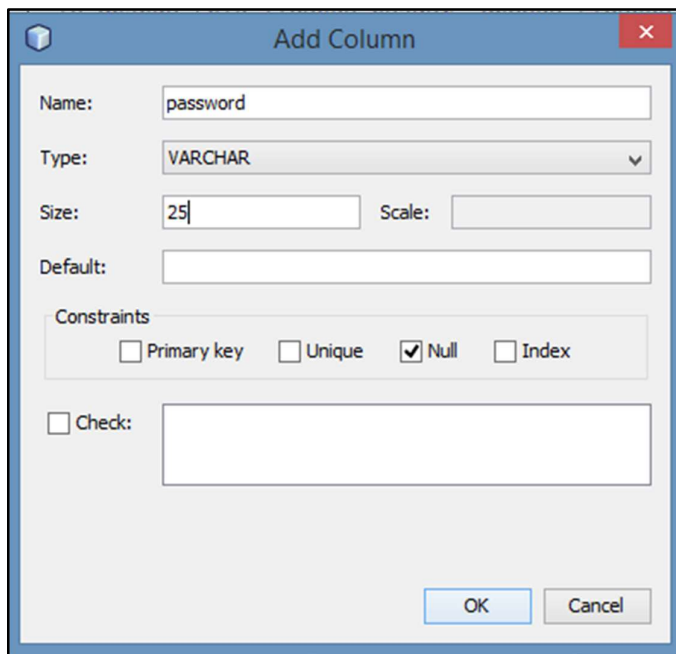
Q. Create a web application for user authentication using servlet and MySQL database.

Create a database **mydatabase** in the services tab. Create table **user** and add columns in it, as shown below:



The screenshot shows the 'Add Column' dialog box with the following fields and options:

- Name: username
- Type: VARCHAR
- Size: 25
- Scale: (empty)
- Default: (empty)
- Constraints: ☒ Primary key, ☒ Unique, ☐ Null, ☒ Index
- Check: (empty)
- Buttons: OK, Cancel



The screenshot shows the 'Add Column' dialog box with the following fields and options:

- Name: password
- Type: VARCHAR
- Size: 25
- Scale: (empty)
- Default: (empty)
- Constraints: ☐ Primary key, ☐ Unique, ☒ Null, ☐ Index
- Check: (empty)
- Buttons: OK, Cancel


```

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 java.sql.*;

public class UserAuthServlet extends HttpServlet {

    Connection con=null;
    Statement stmt=null;
    ResultSet rs=null;
    String n="",p="";

    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out=response.getWriter();
        int cnt=0;
        n=request.getParameter("txtuname");
        p=request.getParameter("txtpass");
        try
        {
            Class.forName("com.mysql.jdbc.Driver");
            con=DriverManager.getConnection("jdbc:mysql://localhost:3306/mydatabase","root","
"); stmt=con.createStatement();
            rs=stmt.executeQuery("select *from user1");
            while(rs.next())
            {
                String un=rs.getString(1);
                String up=rs.getString(2);
                if(n.equals(un) && p.equals(up))
                {
                    out.println("<h1> Welcome!!! "+un+"<h1>");
                    cnt++;
                    break;
                }
            }
            if(cnt==0)
            {
                out.println("<h1> Sorry!!! Try again!!! </h1>");
            }
        }
        catch (Exception e)
        {
            out.println("<h1> Error!!! </h1>");
        }
    }
}

```

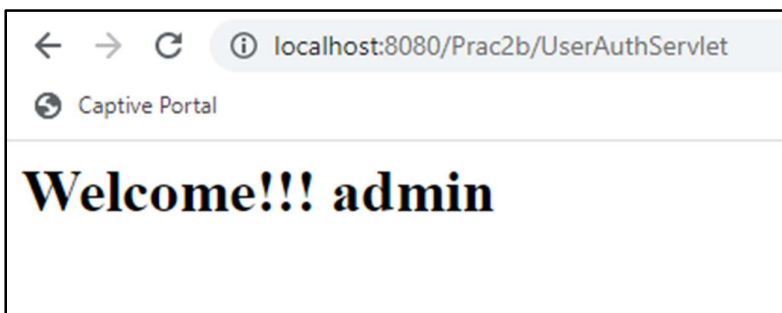
```
    }  
  }  
  catch(ClassNotFoundException | SQLException e) { }  
}  
}
```

Output:

Output after giving right credentials:



A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac2b/index.html'. Below the address bar, there's a 'Captive Portal' icon. The main content area has two input fields: 'Enter Username:' with the value 'admin' and 'Enter Password:' with a masked password '.....'. A 'Submit' button is to the right of the password field.

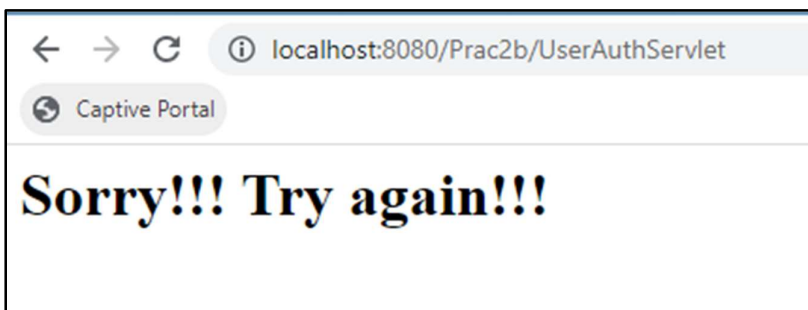


A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac2b/UserAuthServlet'. Below the address bar, there's a 'Captive Portal' icon. The main content area displays the text 'Welcome!!! admin' in a large, bold, black font.

Output after giving wrong credentials:



A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac2b/index.html'. Below the address bar, there's a 'Captive Portal' icon. The main content area has two input fields: 'Enter Username:' with the value 'exmple' and 'Enter Password:' with a masked password '.....'. A 'Submit' button is to the right of the password field.



A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac2b/UserAuthServlet'. Below the address bar, there's a 'Captive Portal' icon. The main content area displays the text 'Sorry!!! Try again!!!' in a large, bold, black font.

Practical No. 2(c)

Q. Develop a simple servlet question answer application using a database.

Create a table in mysql

Create a database

Database name: **queansdb**

Table name: **quiz**

Fields:

1. queno integer primary key
2. question varchar 200
3. opt1 varchar 100
4. opt2 varchar 100
5. opt3 varchar 100
6. opt4 varchar 100
7. anskey varchar 1

Insert minimum 2 to 3 records in table queans.

Add mysql Connector in Library of your web application.

Table name: quiz

Key	Index	Null	Unique	Column name	Data type	Size
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	queno	INT	0
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	question	VARCHAR	200
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	opt1	VARCHAR	100
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	opt2	VARCHAR	100
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	opt3	VARCHAR	100
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	opt4	VARCHAR	100
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	anskey	VARCHAR	1

Buttons: Add column, Edit, Remove, Move Up, Move Down, OK, Cancel, Help

Press CTRL+Tab to exit data entry mode from the table. Press CTRL+0 to set NULL value and CTRL+1 to set DEFAULT value for a given column.

#	queno	question	opt1	opt2	opt3
1		1 What is RDBMS?	Relational Database Management System	Relational	Database
2		2 What is a Computer?	Brain	Electronic Device	Calculator
3		3 Which is not a method from life cycle of a s...	post()	init()	delete()

Buttons: Show SQL, Add Row, Remove, OK, Cancel

for a given column.

opt4	anskey
Redhat	1
Mobile	2
service()	3

Buttons: Row, Remove, OK, Cancel

QueAnsDBServlet.java

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

public class QueAnsDBServlet extends HttpServlet
{
    @Override
    public void doGet(HttpServletRequest request, HttpServletResponse response) throws
        ServletException, IOException
    {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        try
        {
            out.print("<html><body><br>");
            out.println("<form method='post' action='Marks'>");
            Class.forName("com.mysql.jdbc.Driver");
            Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/queansdb","root","");
            Statement st = con.createStatement();
            String sql="select *from quiz";
            ResultSet rs = st.executeQuery(sql);
            int i=0;
            out.print("<center>Online Exam</center>");
            while(rs.next())
            {
                i++;
                out.print("<br><br><hr>"+rs.getInt(1)+" ");
                out.print(rs.getString(2));
                out.print("<br><input type=radio name="+i+" value=1>"+rs.getString(3));
                out.print("<br><input type=radio name="+i+" value=2>"+rs.getString(4));
                out.print("<br><input type=radio name="+i+" value=3>"+rs.getString(5));
                out.print("<br><input type=radio name="+i+" value=4>"+rs.getString(6));
                String ans="ans"+i;
                out.println("<br><input type=hidden name="+ans+" value="+rs.getString(7)+">");
            }
            out.println("<br><input type=hidden name=total value="+i+">");
            out.println("<input type=submit value=Submit>");
            out.println("</form>");
            out.print("</body></html>");
        }
        catch(Exception e)
        {
            out.println("ERROR "+e.getMessage());
        }
    }
}
```

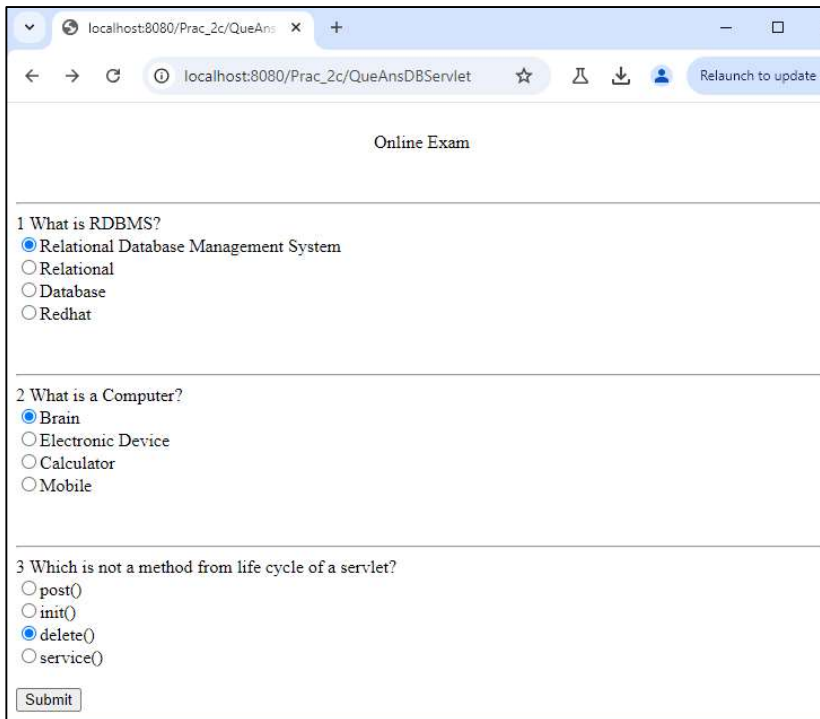
Marks.java

```
import javax.servlet.*;
import javax.servlet.http.*;
import java.io.*;
public class Marks extends HttpServlet
{
    @Override
    public void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        try
        {
            out.print("<html><body>");
            int total=Integer.parseInt(request.getParameter("total"));
            int marks=0;

            for(int i=1; i<=total; i++)
            {
                String sel=request.getParameter(new Integer(i).toString());
                String ans=request.getParameter("ans"+i);

                if (sel.equals(ans))
                    marks++;
            }
            out.println("Total Marks : "+marks);
            out.print("</body></html>");
        }
        finally
        {
            out.close();
        }
    }
}
```

Output:



A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac_2c/QueAnsDBServlet'. The page title is 'Online Exam'. The content area contains three multiple-choice questions. Question 1: 'What is RDBMS?' with options 'Relational Database Management System' (selected), 'Relational', 'Database', and 'Redhat'. Question 2: 'What is a Computer?' with options 'Brain' (selected), 'Electronic Device', 'Calculator', and 'Mobile'. Question 3: 'Which is not a method from life cycle of a servlet?' with options 'post()', 'init()' (selected), 'delete()', and 'service()'. A 'Submit' button is at the bottom left.

Online Exam

1 What is RDBMS?

- ☒ Relational Database Management System
- ☐ Relational
- ☐ Database
- ☐ Redhat

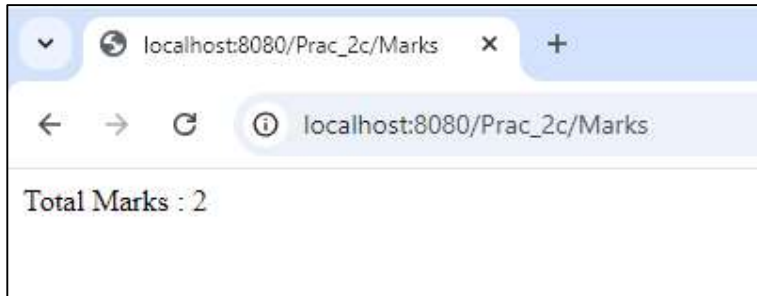
2 What is a Computer?

- ☒ Brain
- ☐ Electronic Device
- ☐ Calculator
- ☐ Mobile

3 Which is not a method from life cycle of a servlet?

- ☐ post()
- ☒ init()
- ☐ delete()
- ☐ service()

Submit



A screenshot of a web browser window. The address bar shows 'localhost:8080/Prac_2c/Marks'. The page content displays 'Total Marks : 2'.

Total Marks : 2