What are Sessions and what is session handling?

How Session Handling can be done in Java?

Sessions are temporary storage of data allotted to a user when he visits a website.

Sessions are destroyed when user leaves the web site or closes the browser.

Each user that visits a web site has a unique session id.

This article is all about implementing Session Handling in Java.

First we will log in a user with username and password entered through a html form and we will check username and password in a mysql table. if username and password is valid the browser will display User Logged in else it will display Invalid Username and password.

It will also let user to logout.

First of all you need to create a database session_users in mysql.

Download and install Mysql from www.wampserver.com

Open Mysql console

and write the following commands

create database session_users;

use session_users;

create table users(username varchar(20),password varchar(20));
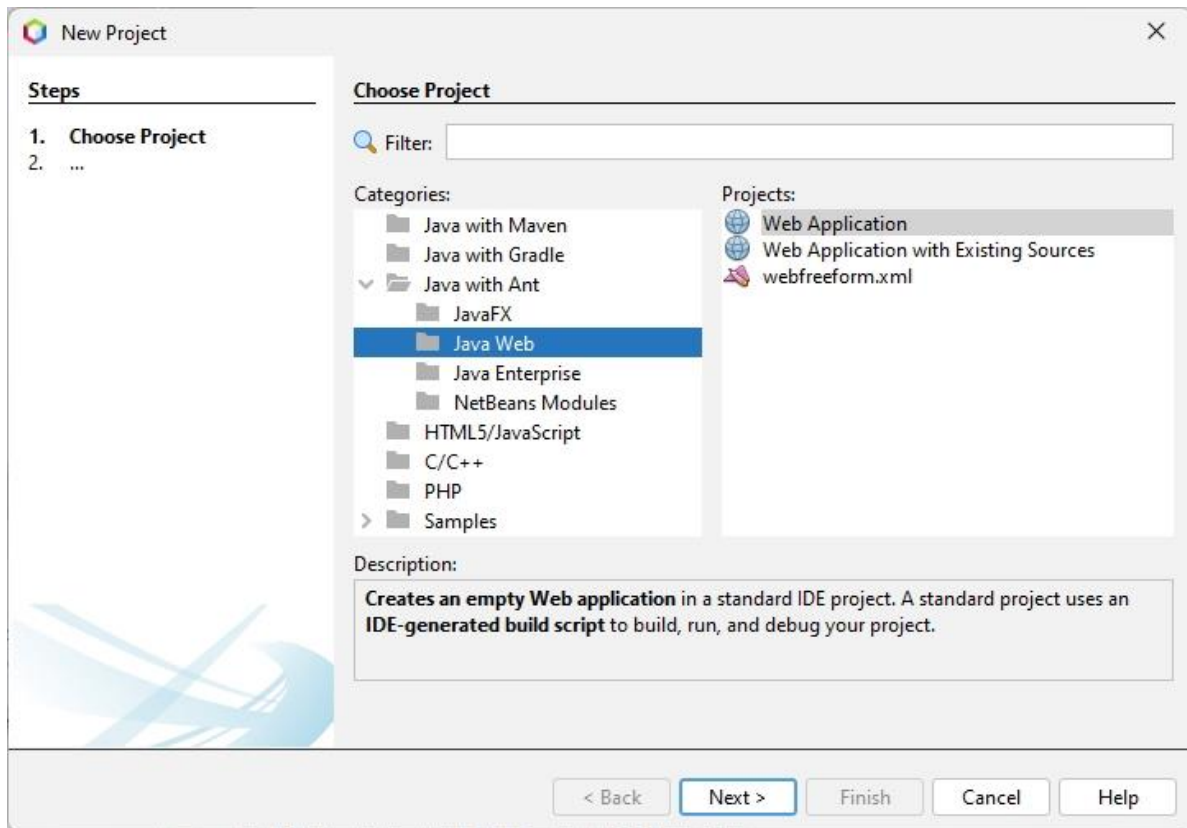
insert into users values('raman','pass1');

Now we will write a html form which will ask user for his username and password, this username and password will bechecked in database session_users and table name is users. If user enters correct username and password he will be logged in else the message will be displayed Invalid Username and password. It will also display message to user that he can logout which will destroy session allotted to user.

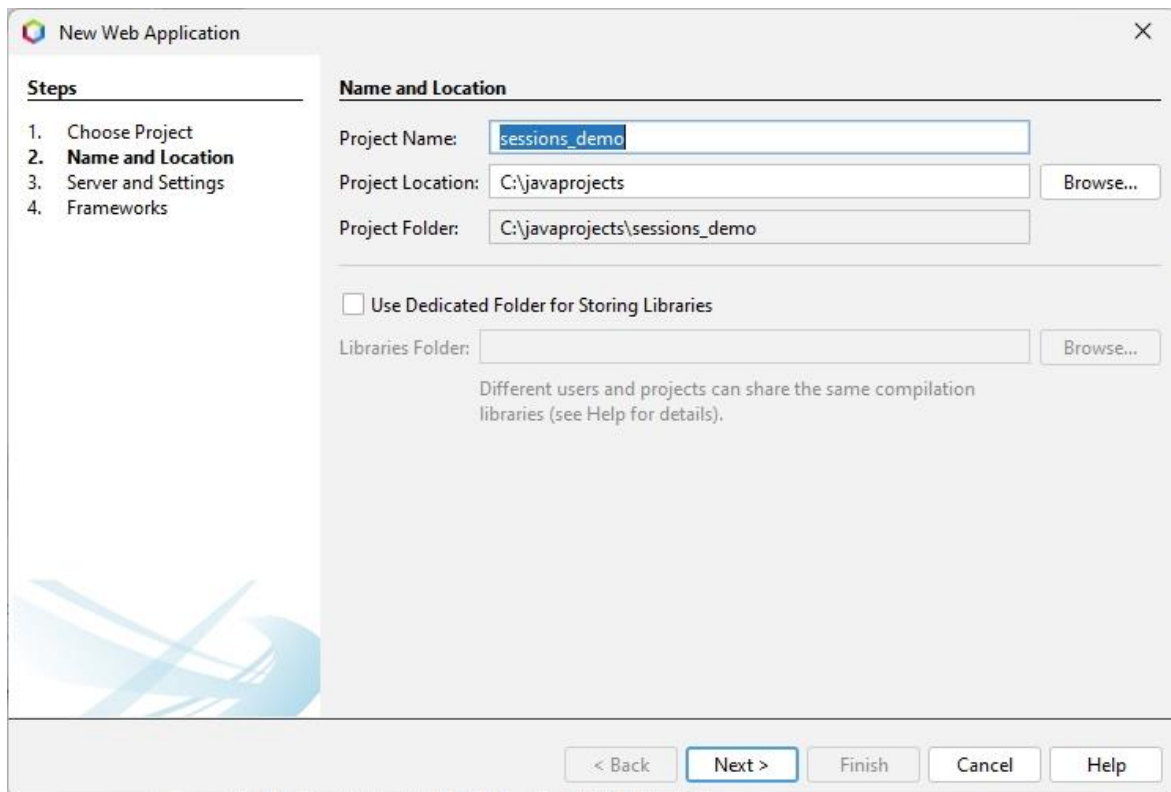We will be using Apache Tomcat Server for this article.

Start Netbeans

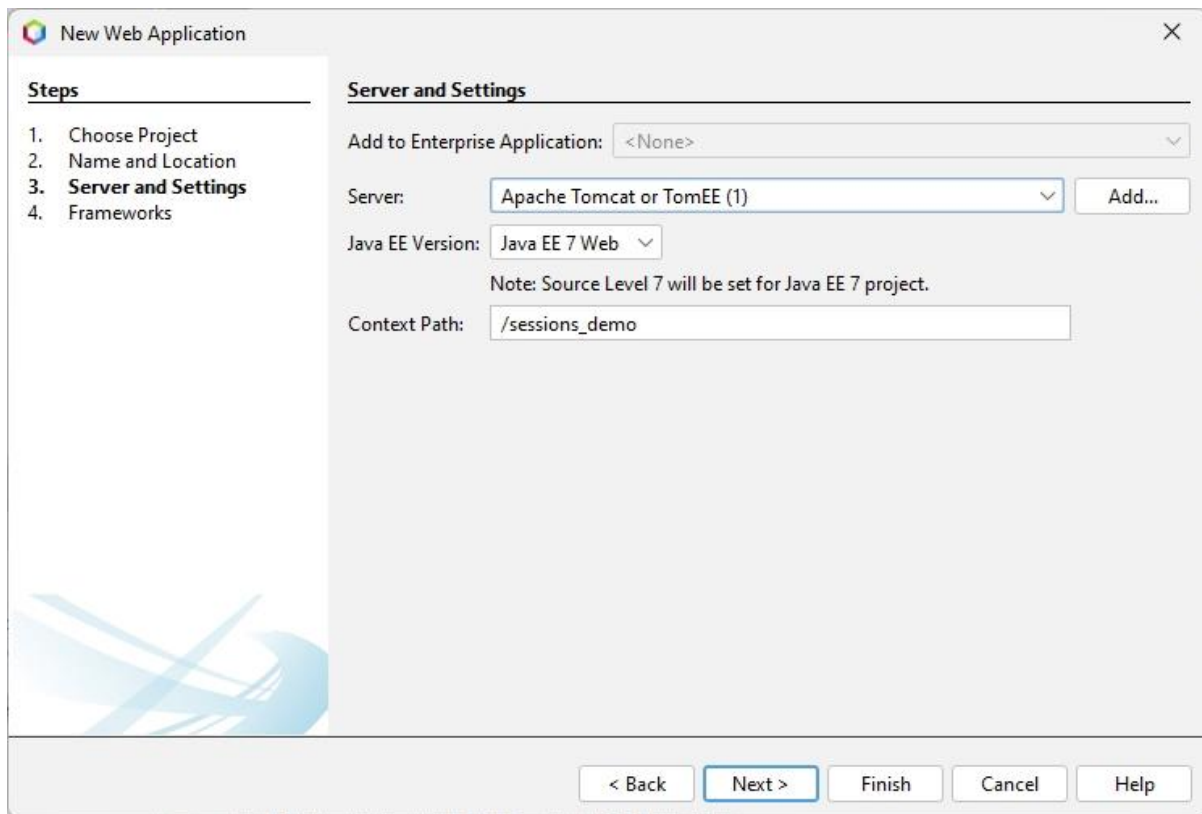Go to File - > New Project

Following window will appear

Click Next

Following window will appear
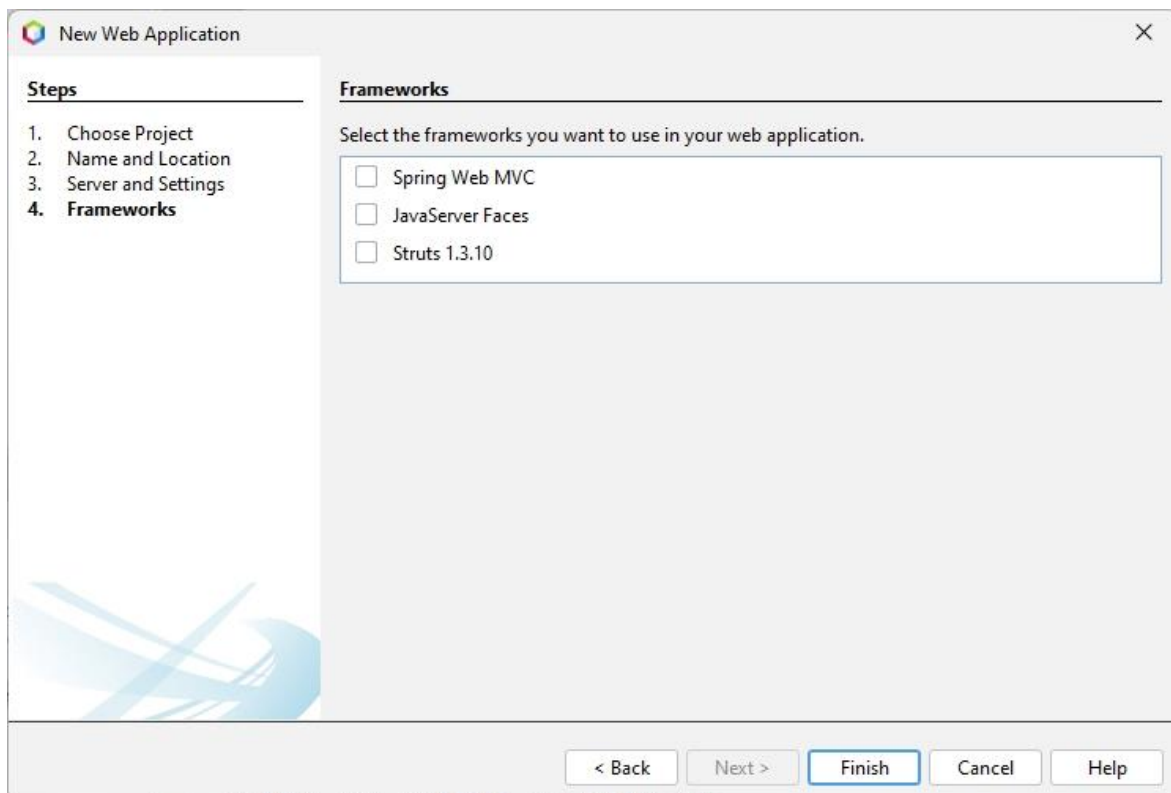

Click Next

Following window will appear

Click Next

Following window will appear

Click Finish

Now paste following code in HTML Page index.html

```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="checklogin" method='post'>
      Username : <input type='text' name='unametxt' value='raman'>
      <br>
      Password : <input type='password' name='passtxt' value='pass1'>
      <br>
      <input type='submit' value='Login'>
    </form>
  </body>
</html>
```
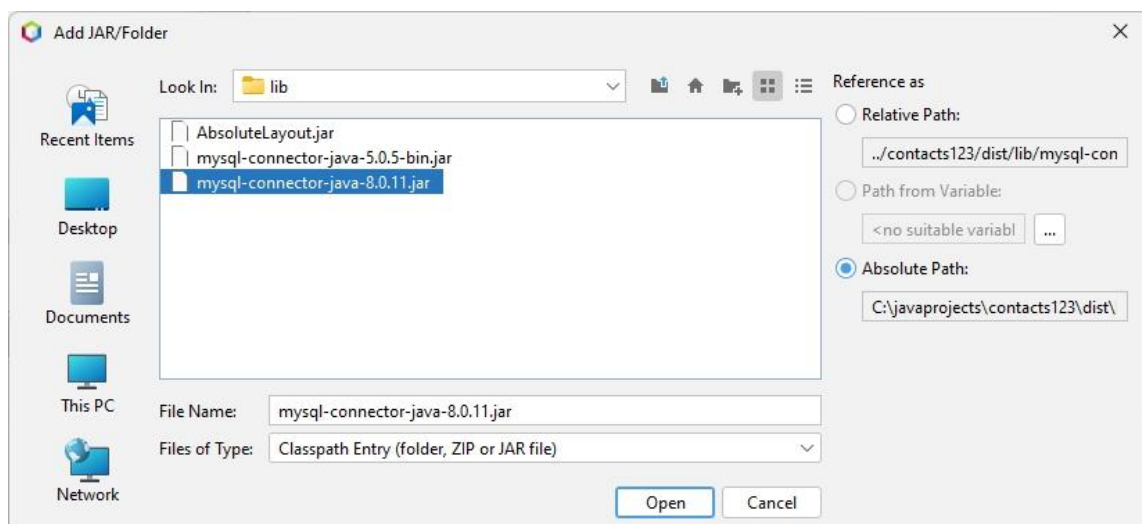
Now add mysql connector jar file to the project

Go to Libraries -> Add JAR/Folder and add mysql connector jar file as shown below

Now Add a Servlet by right click on Project

New->Servlet

Give its name as checklogin

following are the imports for checklogin servlet

---

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.*;

import javax.servlet.http.HttpSession;

Now add a new public static method named as checkuserpass which will check for correct username and password from database table users. method will return true if username and password is found in the table else it will return false.

Following is the code

```java
public static boolean checkuserpass(String uname,String pwd)
  {
      boolean found=false;
      String query;
    try {
              Statement stmt;
              ResultSet rs;



              Class.forName("com.mysql.jdbc.Driver");
              String url
="jdbc:mysql://127.0.0.1:3306/session_users?useUnicode=true&useJDBCCompliantTimezoneShift=true&useLegacyDatetimeCode=false&serverTimezone=UTC";
              Connection con =DriverManager.getConnection(url,"root", "");
              stmt = con.createStatement();
          query="SELECT * from users where username='" + uname + "' and password='" + pwd + "';";
```

```java
        rs = stmt.executeQuery(query);

            while(rs.next()){

    found=true;

    break;

            }

            }

            catch(Exception e)

            {


            found=false;

            }


    return found;

  }
```

Following is the code for processrequest method which will process the request from html page index.html

```java
protected void processRequest(HttpServletRequest request, HttpServletResponse response)

        throws ServletException, IOException {

    response.setContentType("text/html;charset=UTF-8");

    PrintWriter out = response.getWriter();

        try {

    /* TODO output your page here. You may use following sample code. */

    String username="";

    String password="";

    username=request.getParameter("unametxt").toString();

    password=request.getParameter("passtxt").toString();


    boolean found=false;

    found=checkuserpass(username,password);
```

```java
        if (found==true)

        {

            HttpSession sess=request.getSession();

            sess.setAttribute("userloggedin",username);

            out.write("User Logged in as : " + username);

            out.write("<br>");

            out.write("<a href='logoutuser'>Log Out</a>");

        }

        else

        {

            out.write("Invalid Username and Password");

        }

    }

    catch(Exception e)

    {

        out.write(e.toString());

    }

}
```

Now add another Servlet logoutuser by right click on Project and

New -> Servlet

Give its name as logoutuser

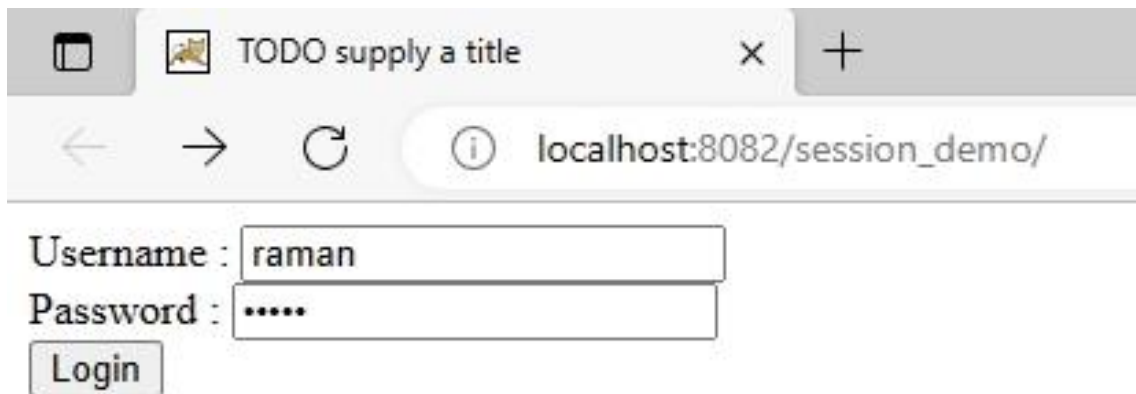Following are the imports for this servlet

```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 javax.servlet.http.HttpSession;
```

Following is the code for processrequest function or method of this servlet

```
protected void processRequest(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. */

  HttpSession sess=request.getSession();

  sess.removeAttribute("userloggedin");

  out.write("User Logged Out");

  }

}
```
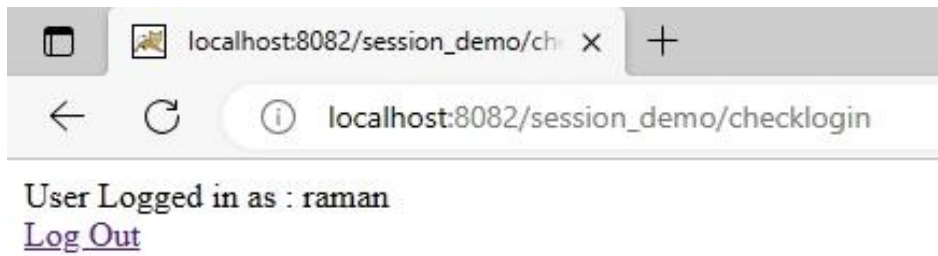
Following are three screen shots of the working web application which demonstrates session handling in java.
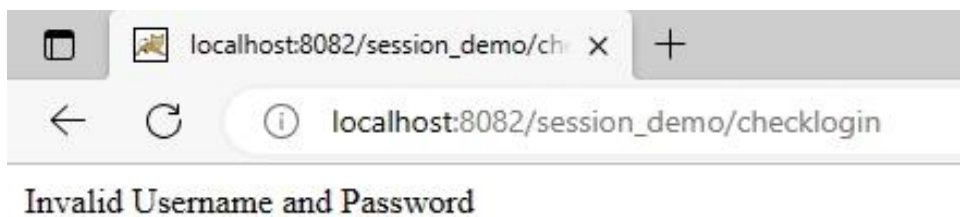

When you will click on Login Button and is username and password will be correct in this case username is raman and password is pass1 following output will be displayed

User Logged in as : raman
Log Out

If the username and password will be incorrect following output will be displayed

Invalid Username and Password

When you will click on LogOut you will see following output

User Logged Out
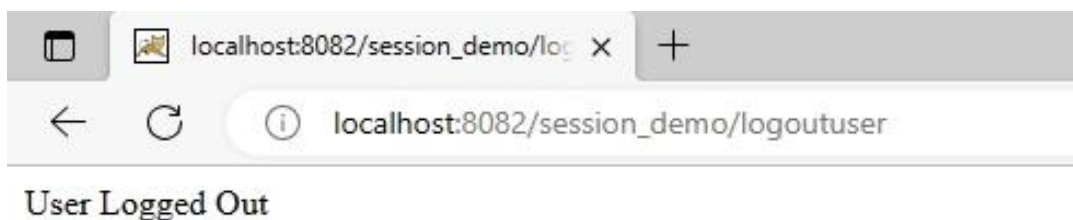
Article explained you what are sessions and session handling in Java.

We can also encrypt data in sessions which make sessions more secure.