Dt : 7/12/2023

Session Tracking in Servlet Programming:

define 'Session'?

  =>The time interval b/w login to logout is known as Session.

define Session Management?

  =>The process of recording the state of user and managing the state of

   user until user-logout,is known as Session Management or Session

   Tracking.

  =>The following are some important Session Tracking techniques:

      1.Cookie

      2.HttpSession

      3.URL re-write

      4.Hidden form fields

1.Cookie:

   =>The small piece of information available b/w multiple requests is

    knwon as cookie.

   =>The cookie is generated from Server-application,but Stored in Web

    Browser to track the user.

   =>These cookies are categorized into two types:

       (i)persistent cookies

(ii)NonPersistent cookies

(i)persistent cookies:

=>persistent cookies will be stored and available in WebBrowsers until

User logout.

(ii)NonPersistent cookies:

=>NonPersistent cookies will be destroyed automatically when WebBrowser

is closed.

Note:

=>we use 'javax.servlet.http.Cookie' class to construct Cookie Session

Tracking process.

=>The following are some important methods from 'Cookie' class:

public javax.servlet.http.Cookie(java.lang.String, java.lang.String);

public void setMaxAge(int);

public int getMaxAge();
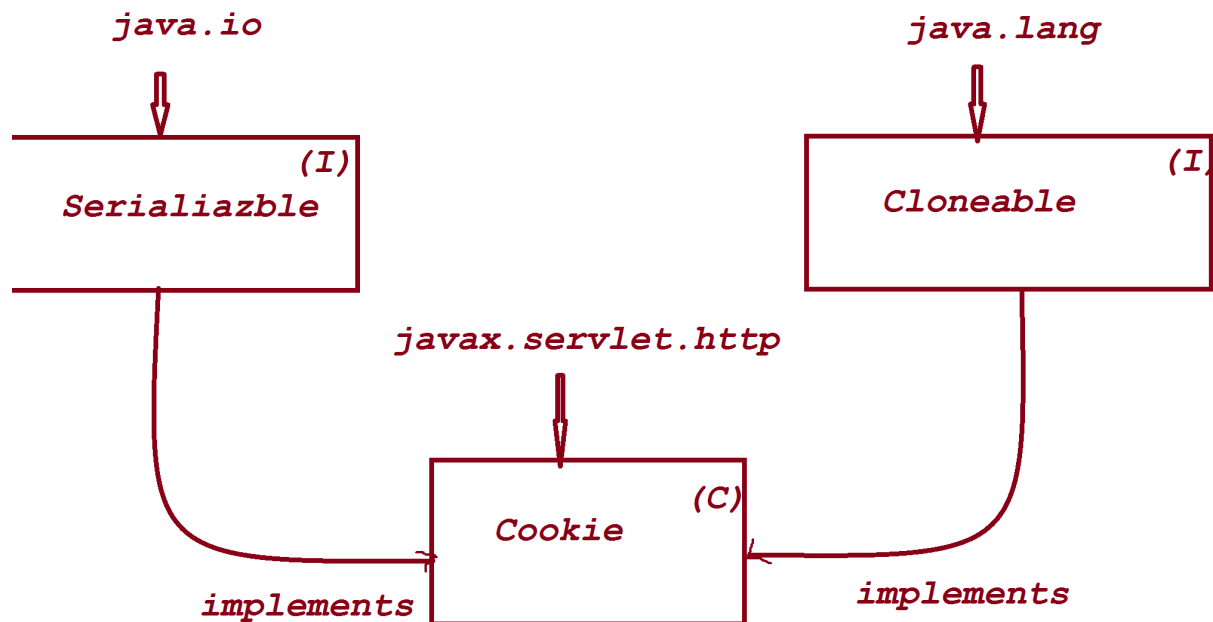
public java.lang.String getName();

public void setValue(java.lang.String);

public java.lang.String getValue();

Hierarchy of Cookie:

Note:

 =>Cookie-Objects are Serializable objects and Cloneable Objects.

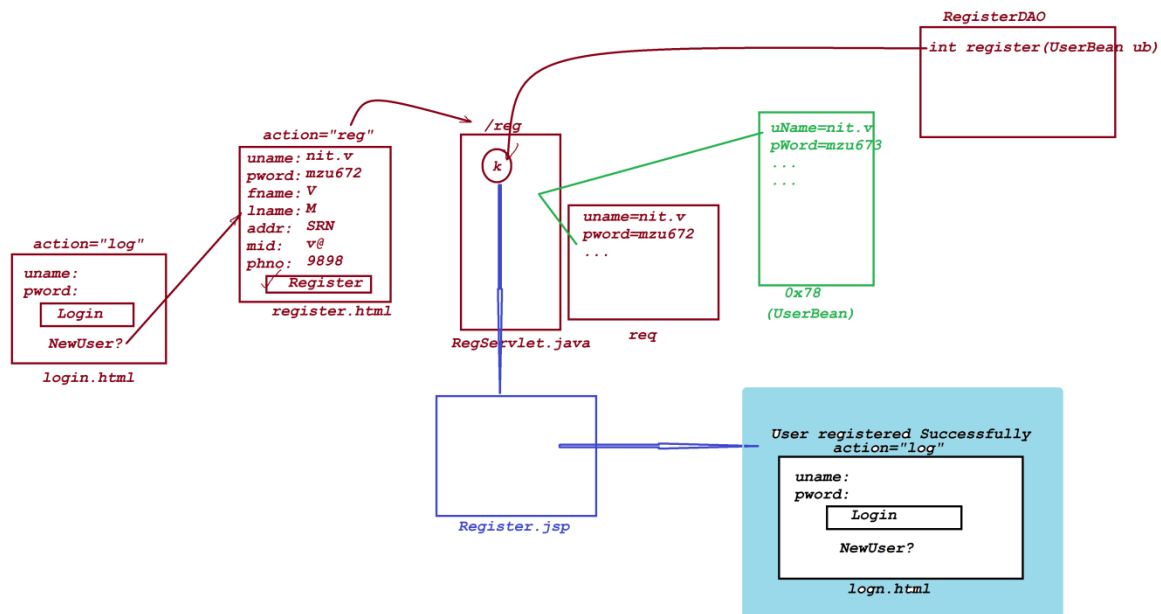*===
==*

Ex-Application : UserApp_Cookie_Session_Tracking

DB Table : UserReg57(uname,pword,fname,lname,addr,mid,phno)

create table UserReg57(uname varchar2(15),pword varchar2(15),

fname varchar2(15),lname varchar2(15),addr varchar2(15),mid varchar2(25),

phno number(15),primary key(uname));

Layout:

login.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="log" method="post">
UserName:<input type="text" name="uname"><br>
Password:<input type="password" name="pword"><br>
```

```html
<input type="submit" value="Login">
<a href="register.html">NewUser?</a>
</form>
</body>
</html>
```

register.html

```html
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="reg" method="post">
UserName:<input type="text" name="uname"><br>
Password:<input type="password" name="pword"><br>
FirstName:<input type="text" name="fname"><br>
LastName:<input type="text" name="lname"><br>
Address:<input type="text" name="addr"><br>
MailId:<input type="text" name="mid"><br>
PhoneNo:<input type="text" name="phno"><br>
<input type="submit" value="Register">
</form>
</body>
</html>
```

DBInfo.java

```java
package test;
public interface DBInfo
{
    public static final String
dbUrl="jdbc:oracle:thin:@localhost:1521:xe";
    public static final String uName="system";
    public static final String pWord="manager";

}
```

DBConnection.java

```java
package test;

import java.sql.*;

import static test.DBInfo.*;

public class DBConnection

{

  private static Connection con=null;

  private DBConnection() {}

  static

  {

        try {

                Class.forName("oracle.jdbc.driver.OracleDriver");

                con = DriverManager.getConnection(dbUrl,uName,pWord);

        }catch(Exception e) {e.printStackTrace();}

  }

  public static Connection getCon()

  {

        return con;

  }

}
```

UserBean.java

```java
package test;
```

```java
import java.io.*;
@SuppressWarnings("serial")
public class UserBean implements Serializable{
  private String uName,pWord,fName,lName,addr,mId;
  private long phNo;
  public UserBean() {}
public String getuName() {
    return uName;
}
public void setuName(String uName) {
    this.uName = uName;
}
public String getpWord() {
    return pWord;
}
public void setpWord(String pWord) {
    this.pWord = pWord;
}
public String getfName() {
    return fName;
}
public void setfName(String fName) {
    this.fName = fName;
}
public String getlName() {
    return lName;
}
public void setlName(String lName) {
    this.lName = lName;
}
public String getAddr() {
    return addr;
}
public void setAddr(String addr) {
    this.addr = addr;
}
public String getmId() {
    return mId;
}
public void setmId(String mId) {
```

```java
        this.mId = mId;
}
public long getPhNo() {
    return phNo;
}
public void setPhNo(long phNo) {
    this.phNo = phNo;
}

}
```

RegisterDAO.java

```java
package test;
import java.sql.*;
public class RegisterDAO {
    public int k=0;
    public int register(UserBean ub) {
     try {
         Connection con = DBConnection.getCon();
         PreparedStatement ps = con.prepareStatement
         ("insert into UserReg57
values(?,?,?,?,?,?,?)");
         ps.setString(1, ub.getuName());
         ps.setString(2, ub.getpWord());
         ps.setString(3, ub.getfName());
         ps.setString(4, ub.getlName());
         ps.setString(5, ub.getAddr());
         ps.setString(6, ub.getmId());
         ps.setLong(7, ub.getPhNo());
         k = ps.executeUpdate();
    }catch(Exception e) {e.printStackTrace();}
    return k;
    }
}
```

RegServlet.java

package test;

```java
import java.io.*;

import javax.servlet.*;

import javax.servlet.http.*;

import javax.servlet.annotation.*;

@SuppressWarnings("serial")

@WebServlet("/reg")

public class RegServlet extends HttpServlet{

    @Override

    protected void doPost(HttpServletRequest req,HttpServletResponse res)

    throws ServletException,IOException{

        UserBean ub = new UserBean();

        ub.setuName(req.getParameter("uname"));

        ub.setpWord(req.getParameter("pword"));

        ub.setfName(req.getParameter("fname"));

        ub.setlName(req.getParameter("lname"));

        ub.setAddr(req.getParameter("addr"));

        ub.setmId(req.getParameter("mid"));

        ub.setPhNo(Long.parseLong(req.getParameter("phno")));


        int k = new RegisterDAO().register(ub);

        if(k>0) {

            req.setAttribute("msg","User Registered Successfully..<br>");
```

```java
            RequestDispatcher rd =

                    req.getRequestDispatcher("Register.jsp");

            rd.forward(req, res);

        }

    }

}
```

Register.jsp

```jsp
<%@ page language="java"
        contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String msg = (String)request.getAttribute("msg");
out.println(msg);
%>
<jsp:include page="login.html"/>
</body>
</html>
```

web.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app>
  <welcome-file-list>
     <welcome-file>login.html</welcome-file>
  </welcome-file-list>
</web-app>
```

==