

Ques. 2

13. Install the Apache Tomcat Server. Create the user defined the
a) Servlet class using generic Servlet and / or HttpServlet
class and execute the "Hello Servlet" message.

→ Install the Apache Tomcat 9 Version.

→ Extract the files

→ Open Eclipse. Right click on the project. Go to build path
then configure Build path. Add the External jar files
in Libraries (in the classpath). Apply & Close.

Demo Servlet

```
import javax.servlet.*;  
import javax.servlet.http.*;  
import java.io.*;  
  
public class DemoServlet extends HttpServlet {  
    public void doGet(HttpServletRequest req, HttpServletResponse res)  
        throws ServletException, IOException {  
        res.setContentType("text/html");  
        PrintWriter pw = res.getWriter();  
        pw.println("<html><body>");  
        pw.println("Hello Servlet");  
        pw.println("</body></html>");  
        pw.close();  
    }  
}
```

Output

Hello Servlet

b) Design a static HTML form in the Servlet application for student details such as name, hallticket-number, email, mobile number, internal & external marks and calculate total marks using doPost() method.

Studentform.html

```
<html>
<head>
<meta charset="ISO-8859-1">
</head>
<body>
<form action="StudentDemo" method="Post">
Enter your name : <input type="text" name="name"><br>
Enter hallticketno. : <input type="text" name="htno"><br>
Enter Email : <input type="text" name="email"><br>
Enter mobileno. : <input type="text" name="mobileno"> <br>
Enter internalmarks : <input type="text" name="internal"><br>
Enter Externalmarks : <input type="text" name="external"><br>
<input type="Submit" value="SUBMIT"><br>
</form>
```

```
</body>
```

```
</html>
```

Student Demo.java

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

public class StudentDemo extends HttpServlet {
    protected void doPost(HttpServletRequest req, HttpServletResponse res)
        throws ServletException, IOException {
        res.setContentType("text/html");
        PrintWriter pw = res.getWriter();
        String name = req.getParameter("name");
        String htno = req.getParameter("htno");
        String email = req.getParameter("Email");
        String mobileno = req.getParameter("mobileno");
        String internal = req.getParameter("internal");
        String external = req.getParameter("External");
        int i = Integer.parseInt(internal);
        int e = Integer.parseInt(external);
        int total = i + e;
        pw.println("Student name is: " + name);
        pw.println("<br>Student hallticketno: " + htno);
        pw.println("<br>Student Email is: " + email);
        pw.println("<br>Student mobileno: " + mobileno);
        pw.println("<br>student internal is: " + i);
        pw.println("<br>student external is: " + e);
        pw.println("<br>Student total marks is: " + total);
    }
}
```

Output

Studentform.html

Enter your name: Ramya

Enter your htno: 549

Enter Email: Ramya@gmail.com

Enter mobileno: 1234567899

Enter internal: 34

Enter external: 24

Submit

Student Demo

Student name is: Ramya

Student halfticket no: 549

Student Email is: Ramya@gmail.com

Student mobileno: 1234567899

Student internal is: 34

Student external is: 24

Student Totalmarks is 58

14.

- a) Implement the Servlet Request Dispatch Techniques to bypass the Client request using forward() & include() methods.

ReqDispForm.html

```
<html>
<head>
<title> Request Dispatch</title>
</head>
<body>
<form action="ReqDisp" method="get">
Enter Name: <input type="text" name="username">
<br><br>
Enter Password: <input type="password" name="password">
<br><br>
<input type="submit" value="Login">
</form>
</body> </html>
```

ErrorRD.html

```
<html>
<head> <body>
<h1> This is an Error Page </h1> X
<form action="ReqDisp2" method="get">
<h1> This is Error Page </h1>
you should enter username & password to access this application
<br><br>
try again <br>
<a href="ReqDispForm.html"> New Login Form </a>
</form>
</body>
</html>
```

ReqDisp.java

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

public class ReqDisp extends HttpServlet {
    protected void doGet(HttpServletRequest req, HttpServletResponse res)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = res.getWriter();
        String n = request.getParameter("username");
        String p = request.getParameter("password");
        if (n.equals("") || p.equals(""))
        {
            response.sendRedirect("Error0.html");
        }
        else
        {
            if (p.equals("Servlet"))
            {
                RequestDispatcher rd = request.getRequestDispatcher("/ReqDispform.html");
                rd.include(request, response);
            }
        }
    }
}
```

ReqDisp2.java

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

public class ReqDisp2 extends HttpServlet {
    protected void doGet(HttpServletRequest req, HttpServletResponse res)
        throws ServletException, IOException {
        res.setContentType("text/html");
        PrintWriter pw = response.getWriter();
        String n = req.getParameter("username");
        out.println("welcome "+n);
    }
}
```

Output

①

RegDispForm.html

Enter Name:

Enter Password:

Login

②

ErrorD.html

This is Error Page

You should Enter Username
and Password to access this
application. Try again

NewLoginform

③

RegDisp.java

Enter Username:

Enter Password:

Submit

RegDisp2.java

Welcome Ramya

b) Demonstrate the Session Tracking techniques using HttpSession for Employee Login & Logout operations.

HttpSessionIndex.html

```
<html>
<body>
<h1> Login Application using HttpSession </h1>
<a href='HttpSessionLogin.html'> Login </a>
<a href='HttpSessionLogoutServlet'> Logout </a>
<a href='HttpSessionProfileServlet'> Profile </a>
</body>
</html>
```

HttpSessionLink.html

```
<html>
<body>
<a href='HttpSessionLogin.html'> Login </a>
<a href='HttpSessionLogoutServlet'> Logout </a>
<a href='HttpSessionProfileServlet'> Profile </a>
</body>
</html>
```

HttpSessionLogin.html

```
<html>
<body>
<form action='HttpLogin' method='get'>
  name: <input type='text' name='username'> <br>
  password: <input type='password' name='password'> <br>
  <input type='submit' value='Login'>
</form>
</body>
</html>
```

HttpSession Login Servlet.java

```
import java.io.IOException;
public class HttpSessionLoginServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        request.getRequestDispatcher("HttpSessionLink.html").include(request, response);
        String name = request.getParameter("name");
        String password = request.getParameter("password");
        if (password.equals("admin123")) {
            out.println("welcome " + name);
            HttpSession session = request.getSession();
            session.setAttribute("name", name);
        } else {
            out.println("Sorry, Username or Password error!");
        }
    }
}
```

HttpSessionLogout Servlet.java

```
import java.io.IOException;
public class HttpSessionLogoutServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        request.getRequestDispatcher("HttpSessionLink.html").include(request, response);
    }
}
```

```
HttpSession session = request.getSession();
session.invalidate();
out.print("you are successfully logged out");
```

}

y

HttpSessionProfileServlet.java

```
import java.io.IOException;
public class HttpSessionProfileServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        request.getRequestDispatcher("HttpSessionLink.html").include(request,
            response);
        HttpSession session = request.getSession(false);
        if (session != null) {
            String name = (String) session.getAttribute("name");
            out.print("hello " + name + " welcome to your profile");
        } else {
            out.print("Please log in first");
            request.getRequestDispatcher("HttpSessionLink.html").include
                (request, response);
        }
    }
}
```

3

Output

① HttpSessionIndex.html

Login Application using HttpSession

Login Logout Profile

② If profile is clicked

HttpSessionProfile Servlet

Login Logout Profile

Please login first

Login Logout Profile

③

HttpSessionLogin.html

Name: Ramya

Password:xxxxx

⑤

HttpSessionProfile Servlet

Login Logout Profile

Hello Ramya Welcome to your
Profile

④

HttpLoginServlet

Login Logout Profile

Sorry, username or password error!

Name: Ramya

Password:xxxxxxxx

Welcome
Login Ramya

⑥

HttpSessionLogoutServlet

You are successfully
logged out.

3
Output
> Create
data
> Use
data
> Show
data

write a JDBC program to create the employee table & to perform the CRUD operations on it. CRUD means insertion/deletion creation of new record, retrieval of records, update & delete the existing records.

Create a table

```
import java.sql.*;
public class CreateTable {
    public static void main(String[] args) throws Exception {
        String username = "root";
        String password = "mysql";
        String url = "jdbc:mysql://localhost:3306/lab";
        Class.forName("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection(url, username, password);
        System.out.println("Connection is created");
        String sql = "create table Student5 " + "(Sid Varchar(20), " +
                     "Sname Varchar(20), " + "Sadd Varchar(20))";
        Statement st = con.createStatement();
        st.executeUpdate(sql);
        System.out.println("Student Table is created");
        st.close();
        con.close();
    }
}
```

Output

```
> Create database Lab;
database created
> Use Lab;
database changed
> Show tables;
Student5;
```

Insert the Values

```
import java.sql.*;
public class InsertData {
    public static void main (String[] args) throws Exception {
        String username = "root";
        String password = "mysql";
        String url = "jdbc:mysql://localhost:3306/lab";
        Class.forName("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection(url, username, password);
        System.out.println ("Connection is created");
        Statement st = con.createStatement();
        String sql = "insert into Student5 values ('1001', 'Ajay', 'Hyd')";
        st.executeUpdate(sql);
        String sql = "insert into Student5 values ('1002', 'Vijay', 'Abmooor')";
        st.executeUpdate(sql);
        String sql = "insert into Student5 values ('1003', 'Nithin', 'Banglore')";
        st.executeUpdate(sql);
        System.out.println ("Student three records are inserted..");
        st.close();
        con.close();
    }
}
```

Output

> Select * from Student5;

1001	Ajay	Hyd
1002	Vijay	Abmooor
1003	Nithin	Banglore

Student three records are inserted..

Date Data

```
import java.sql.*;
public class UpdateData {
    public static void main (String [] args) throws Exception {
        String username = "root";
        String password = "mysql";
        String url = "jdbc:mysql://localhost:3306/lab";
        Class.forName ("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection (url,username,
                                                     password);
        System.out.println ("Connection is created");
        Statement st = con.createStatement ();
        String sql = "update student set saddr='Hyderabad' where
                     Sid=1001";
        st.executeUpdate (sql);
        System.out.println ("Student one record is updated... ");
        st.close ();
        con.close ();
    }
}
```

Output:

```
Select * from students;
```

```
1001 Ajay Hyderabad
1002 Vijay Armoy
1003 Nithin Bangalore
```

```
Student one record is updated...
```

DeleteData

```
import java.sql.*;  
Public class DeleteData {  
    Public static void main(String[] args) throws Exception {  
        String Username = "root";  
        String Password = "mysql";  
        String url = "jdbc:mysql://localhost:3306/lab;  
        Class.forName("com.mysql.jdbc.Driver");  
        Connection con = DriverManager.getConnection(url, Username,  
            Password);  
        System.out.println("Connection is created");  
        Statement st = con.createStatement();  
        String sql = "delete from student where sid = 1003";  
        st.executeUpdate(sql);  
        System.out.println("Student one record is deleted");  
        st.close();  
        con.close();  
    }  
}
```

Output

Select * from Students;

1001	Ajay	Hyderabad
1002	Vijay	Amaravati

Student one record is deleted.

Select Data

```
import java.sql.*;
Public class SelectData {
    Public static void main (String [ ] args) throws Exception {
        String username = "root";
        String password = "mysql";
        String url = "jdbc:mysql://localhost:3306/lab";
        Class.forName ("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection (url, username,
                                                    password);
        System.out.println ("Connection is created");
        Statement st = con.createStatement ();
        Result Set rs = st.executeQuery ("select * from students");
        System.out.println ("All the Employee Details");
        while (rs.next ()) {
            System.out.println ("Student ID: " + rs.getString (1));
            System.out.println ("Student Name: " + rs.getString (2));
            System.out.println ("Student Address: " + rs.getString (3));
        }
        st.close ();
        con.close ();
    }
}
```

Output

All the Employee Details
Student ID: 1001
Student Name: Ajay
Student Address: Hyderabad
Student ID: 1002
Student Name: Vijay
Student Address: Aomoor

15.a) Write a jsp application of Bank Customer details using Jsp scripting elements which includes scriptlet tag, expression tag, declaration tag.

BankForm.html

```
<html>
<body>
<h1> fill the Bank Customer details </h1>
<form action="BankProcess.jsp">
Enter Customer name: <input type="text" name="cname"><br>
Enter Account number: <input type="text" name="acno"><br>
Enter Email: <input type="text" name="email"><br>
Enter phonenumber: <input type="text" name="phone"><br>
Enter Address: <input type="text" name="address"><br>
<input type="Submit" value="Submit">
</form>
</body>
</html>
```

BankProcess.jsp

```
<html>
<body>
<%! int balance=1000; %>
Public int getBalance()
{
    return balance;
}
Public void deposit(int amount)
{
    balance = balance + amount;
}
Public void withdraw(int amount)
{
    if(balance > amount)
        balance = balance - amount;
}
%>
```

```

<b></b>
<%="Customer name: "+request.getParameter("cname")%>
<%="<b> Account number: "+request.getParameter("acno")%>
<%="<b> Customer EmailId: "+request.getParameter("email")%>
<%="<b> Customer phonenumber: "+request.getParameter("phone")%>
<%="<b> Customer Address: "+request.getParameter("address")%>
<b></b>
<%
    out.println("<b> Initial Balance: "+balance);
    deposit(500);
    out.println("<b> Balance after depositing: "+balance);
    withdraw(300);
    out.println("<b> Balance is after withdrawl: "+balance);
%>
</body>
</html>

```

Output

Bankform.html

Enter Customer name:	Ramya
Enter Account number:	12345678
Enter Email:	Ramya@gmail.com
Enter phone number:	9876543211
Enter Address:	Hyderabad
<input type="button" value="Submit"/>	

BankProcess.jsp

Customer name: Ramya
 Account number: 12345678
 Customer EmailId: Ramya@gmail.com
 Customer phonenumber: 9876543211
 Customer Address: Hyderabad
 initial balance: 100
 balance after depositing: 1500
 balance after withdrawl: 1200

15.b) Demonstrate how to use the Cookies in Session tracking of Jsp application.

CookieForm.html

```
<html>
<body>
<form action = "CookieDemo1.jsp">
    Username: <input type = "text" name = "UserName" > <br>
    Password: <input type = "text" name = "Password" > <br>
    <input type = "submit" value = "Submit" >
</form>
</body>
</html>
```

CookieDemo1.jsp

```
<html>
<body>
<%
String Username = request.getParameter("UserName");
String Password = request.getParameter("Password");
```

```
out.println("Hello " + Username);
```

```
out.println("Your Password is " + Password);
```

```
Cookie C1 = new Cookie("username", Username);
```

```
Cookie C2 = new Cookie("Password", Password);
```

```
response.addCookie(C1);
```

```
response.addCookie(C2);
```

```
out.println("<form action = "CookieDemo2.jsp" >");
```

```
out.println("<input type = "submit" value = 'go' >");
```

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

```
%>
```

```
</body>
```

```
</html>
```

CookieDemo2.jsp

```
<html>
<body>
<%
    Cookie ck[] = request.getCookies();
    out.print("Username: " + ck[0].getValue());
    out.print("Password: " + ck[1].getValue());
%
</body>
</html>
```

Output

① Cookieform.html

Username: Ranya
Password: 12345

② CookieDemo1.jsp

Hello Ranya
Your password is 12345

③ CookieDemo2.jsp

Username: Ranya
Password: 12345

16. a) Demonstrate the Voting system using forward() & include()

Voteform.html

```
<html>
<body>
<form action="VoteProcess.jsp">
    Enter Student Name: <input type="text" name="Sname"> <br>
    Enter Student Age: <input type="text" name="Sage"> <br>
    Enter Student Mobile: <input type="text" name="Smobile"> <br>
    <input type="Submit" Value="Register">
</form>
</body>
</html>
```

VoteProcess.jsp

```
<html>
<body>
<h1> Welcome to College Voting system </h1>
<b>
<% int age = Integer.parseInt(request.getParameter("sage"));
if (age >= 18) {
%>
<jsp:forward page="VoteMajor.jsp">
<jsp:param name="VoterId" value="MREC-1234"/>
<jsp:param name="status" value="Thankyou for Voting"/>
<jsp:param name="msg" value="Have a nice day"/>
</jsp:forward>
<% }
else {
%>
<jsp:include page="VoteMinor.jsp">
<jsp:param name="status" value="You are Minor"/>
<jsp:param name="msg" value="Try after few years"/>
</jsp:include>
```

```
<% %>
```

```
</body>
```

```
</html>
```

VoteMajor.jsp

```
<html>
```

```
<body>
```

```
<%
```

```
String sname = request.getParameter("sname");
```

```
int sage = Integer.parseInt(request.getParameter("sage"));
```

```
String status = request.getParameter("status");
```

```
String VoterId = request.getParameter("VoterId");
```

```
String msg = request.getParameter("msg");
```

```
out.print("Hello " + sname);
```

```
out.print("<br> Your age is: " + sage);
```

```
out.print("<br> Your VoterId: " + VoterId);
```

```
out.print("<br> " + status);
```

```
out.print("<br>" + msg + " Bye");
```

```
%>
```

```
</body>
```

```
</html>
```

VoteMinor.jsp

```
<html>
```

```
<body>
```

```
<%
```

```
String sname = request.getParameter("sname");
```

```
int sage = Integer.parseInt(request.getParameter("sage"));
```

```
String status = request.getParameter("status");
```

```
String msg = request.getParameter("msg");
```

```
out.print("Hello " + sname);
```

```
out.print("<br> Your age is " + sage);
```

```
out.print("<br> Boss " + status);
```

(*
 ' + msg + ' Bye

');

%>

 New Voting Registration form
</body>
</html>

Output

Voteform.html

① Enter Student name:
Enter Student age:
Enter Student mobile:

VoteProcess.jsp

② Hello Ramya
Your age is 34
Your Voter Id: MREC-1234
Boss thank you for voting
have a nice day bye

* when age is 4

↓
Vote Process.jsp

③ Hello Ramya
Your age is 4
try after few years bye
New Voting Registration form.

16.b) Create the simple bean class to reuse the bean in multiple JSP Pages using JSP

User.java

```
Package UserBean;  
Public class User {  
    Private String name, password, email;  
    Public String getName() {  
        Return name;  
    }  
    Public void setName(String name) {  
        This.name = name;  
    }  
    Public String getPassword() {  
        Return password;  
    }  
    Public void setPassword(String password) {  
        This.password = password;  
    }  
    Public String getEmail() {  
        Return email;  
    }  
    Public void setEmail(String email) {  
        This.email = email;  
    }  
}
```

BeanIndex.html

```
<html>  
<body>  
<form action='BeanProcess1.jsp'>  
Name:<input type='text' name='name' ><br>  
Password:<input type='password' name='password'><br>  
Email:<input type='text' name='Email' ><br>
```

```
<input type="submit" value="register" />
```

BeanProcess1.jsp

```
<html>
<body>
<jsp:useBean id="u" class="UserBean.User" scope="session"/>
<jsp:setProperty property="*" name="u"/>
Record:<br>
<jsp:getProperty property="name" name="u"/><br>
<jsp:getProperty property="password" name="u"/><br>
<jsp:getProperty property="Email" name="u"/><br>
<a href="BeanProcess2.jsp">Visit Page </a>
</body>
</html>
```

BeanProcess2.jsp

```
<html>
<body>
<jsp:useBean id="u" class="UserBean.User" scope="session"/>
Record:<br>
<jsp:getProperty property="name" name="u"/><br>
<jsp:getProperty property="password" name="u"/><br>
<jsp:getProperty property="Email" name="u"/><br>
</body>
</html>
```

BeanProcess3.jsp

```
<html>
<body>
<jsp:useBean id="u" class="UserBean.User" scope="Session"/>
```

```

<%!> and <%> both represent how much code needs to be run.
String name = "arjun"; // This will be set by get method of index.jsp
%>
<jsp:setProperty property="name" name="u" value="<% = name %>" />
Record: <br>
<jsp:getProperty property="name" name="u"/><br>
</body>
</html>

```

Output

① BeanIndex.html

name:	Ramya
Password:	*****
Email:	Ramya@gmail.com
register	

② BeanProcess1.jsp

Record:	Ramya
	1234
	Ramya@gmail.com
Visit Page	

③ BeanProcess2.jsp

Record:	Ramya
	1234
	Ramya@gmail.com

④ BeanProcess3.jsp

Record:	Arjun
---------	-------

17. Create Student Bean class and manage the Student login details using Jsp Model View Controller where java bean class as a model, jsp as a view component and Jsp as a controller.

Index.html

```
<html>
<body>
<form action="ControllerServlet" method="get">
    Name:<input type="text" name="uname"><br>
    Password:<input type="text" name="password"><br>
    <input type="submit" value="Login" ><br>
</form>
</body>
</html>
```

ControllerServlet.java

```
package Controller;
import java.io.IOException;
import java.io.*;
import javax.servlet.*;
public class ControllerServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        String Username = request.getParameter("uname");
        String password = request.getParameter("password");
        LoginBean bean = new LoginBean();
        bean.setUsername(Username);
```

```
bean.setPassword(password);
request.setAttribute("bean", bean);
boolean status = bean.validate();
if (status) {
    RequestDispatcher rd = request.getRequestDispatcher("Login-success.jsp");
    rd.forward(request, response);
}
else {
    RequestDispatcher rd = request.getRequestDispatcher("Login-error.jsp");
    rd.forward(request, response);
}
```

LoginBean.java

```
package bean;
public class LoginBean {
    private String username, password;
    public String getUsername() {
        return username;
    }
    public void setUsername(String username) {
        this.username = username;
    }
    public String getPassword() {
        return password;
    }
    public void setPassword(String password) {
        this.password = password;
    }
    public boolean validate() {
        if (password.equals("admin")) {
            return true;
        }
    }
}
```

```
    }  
    else {  
        return false;  
    }  
}
```

Login-success.jsp

```
<html>  
<body>  
<%@ page import = "bean.LoginBean" %>  
<p> You are successfully logged in ! </p>  
<%  
    LoginBean bean = (LoginBean) request.getAttribute("bean");  
    out.print("Welcome " + bean.getUsername());  
%>  
</body>  
</html>
```

Login-error.jsp

```
<html>  
<body>  
<p> Sorry! Username or password error </p>  
<%@ include file = "Index.html" %>  
</body>  
</html>
```

Output

① Index.html

Enter your name :

Enter your password :

ControllerServlet

Sorry! Username or password error

② Enter your name: Ramya

Enter password: * * * * * (admin)

login

ControllerServlet

③ You are successfully logged in!

Welcome Ramya