

CS-25 Advanced Java Programming (J2EE)

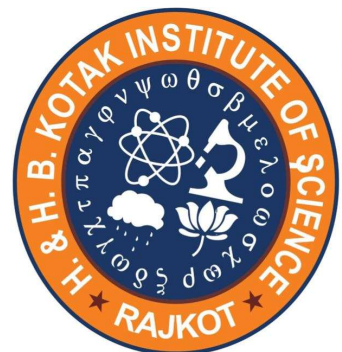
BCA Semester – 5



Journal

H. & H. B. Kotak Institute of Science, Rajkot

BCA Department





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Advance Java Programing (J2EE) during the academic year _____. Her/His

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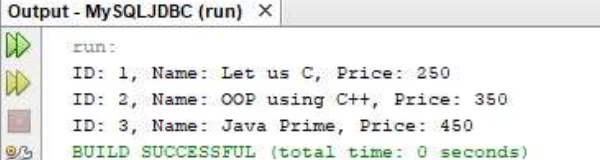
Unit – 1

The J2EE Platform, JDBC (Java Database Connectivity)

1. JDBC with MySQL

```
1 //JDBC with MySql Connectivity...
2
3 package jdbc1;
4 import java.sql.*;
5 public class JDBC1 {
6     public static void main(String[] args) {
7         try{
8             Class.forName("com.mysql.jdbc.Driver");
9             Connection con =
10 DriverManager.getConnection("jdbc:mysql://localhost/College", "root",
11 "");
12             Statement st=con.createStatement();
13             ResultSet rs = st.executeQuery("select * from students");
14             while(rs.next()){
15                 int id = rs.getInt("id");
16                 String sname = rs.getString("sname");
17                 String city = rs.getString("city");
18                 //Display values
19                 System.out.print("ID: " + id);
20                 System.out.print(", Name: " + sname);
21                 System.out.println(", City: " + city);
22             }
23             rs.close();
24             st.close();
25             con.close();
26         }catch(Exception e){
27             e.printStackTrace();
28         }
29     }
30 }
```

Output:



```
run:
ID: 1, Name: Let us C, Price: 250
ID: 2, Name: OOP using C++, Price: 350
ID: 3, Name: Java Prime, Price: 450
BUILD SUCCESSFUL (total time: 0 seconds)
```

2. JDBC with Oracle

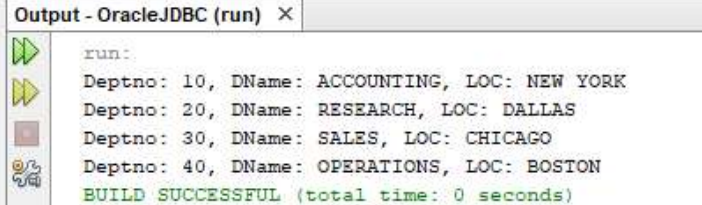
```
1 //JDBC with Oracle Connectivity...
2
3 package jdbc3;
4 import java.sql.*;
5 public class JDBC3 {
6
7     public static void main(String[] args) {
8         try{
9             Class.forName("oracle.jdbc.driver.OracleDriver");
10            Connection con =
11 DriverManager.getConnection("jdbc:oracle:thin:@192.168.10.100:1521:k
12 isdb", "scott", "tiger");
13            Statement st=con.createStatement();
14            ResultSet rs = st.executeQuery("select * from dept");
15            while(rs.next()){
16                int deptno=rs.getInt("deptno");
17            }
18        }
19    }
20 }
```

```

15         String dname=rs.getString("dname");
16         String loc=rs.getString("loc");
17         //-----
18         System.out.print("Deptno: "+deptno);
19         System.out.print(", DName: "+dname);
20         System.out.println(", LOC: "+loc);
21     }
22     rs.close();
23     st.close();
24     con.close();
25 }catch(Exception e){
26     e.printStackTrace();
27 }
28 }
29 }

```

Output:



```

run:
Deptno: 10, DName: ACCOUNTING, LOC: NEW YORK
Deptno: 20, DName: RESEARCH, LOC: DALLAS
Deptno: 30, DName: SALES, LOC: CHICAGO
Deptno: 40, DName: OPERATIONS, LOC: BOSTON
BUILD SUCCESSFUL (total time: 0 seconds)

```

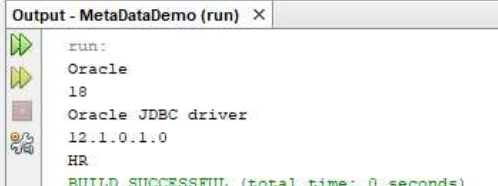
3. DatabaseMetaData Demo

```

1 //DatabaseMetaData Demo
2 package metadatademo;
3 import java.sql.*;
4 public class MetadataDemo {
5     public static void main(String[] args) {
6         try{
7             DatabaseMetaData dbmd;
8             Class.forName("oracle.jdbc.driver.OracleDriver");
9             Connection
10 con=DriverManager.getConnection("jdbc:oracle:thin:@127.0.0.1:1521/xepdb1", "hr", "hr");
11 dbmd=con.getMetaData();
12 System.out.println(dbmd.getDatabaseProductName());
13 System.out.println(dbmd.getDatabaseMajorVersion());
14 System.out.println(dbmd.getDriverName());
15 System.out.println(dbmd.getDriverVersion());
16 System.out.println(dbmd.getUserName());
17 }catch(Exception e){
18     System.out.println(e);
19 }
20 }

```

Output:



```

run:
Oracle
18
Oracle JDBC driver
12.1.0.1.0
HR
BUILD SUCCESSFUL (total time: 0 seconds)

```

Unit – 2

RMI, Servlet

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Rajkot

4. RMI Demo

```
1  AddInterface.java
2  -----
3  package rmidemob;
4
5  import java.rmi.Remote;
6  import java.rmi.RemoteException;
7  public interface AddInterface extends Remote {
8      // Declaring the method prototype
9      public int add(int x, int y) throws RemoteException;
10 }
-----
11 Impl.java
12 -----
13 package rmidemob;
14
15 import java.rmi.*;
16 import java.rmi.server.*;
17
18 public class Impl extends UnicastRemoteObject implements
19 AddInterface {
20     public Impl() throws Exception {
21         super();
22     }
23     @Override
24     public int add(int x, int y) {
25         return x + y;
26     }
27 }
-----
28 Server.java
29 -----
30 package rmidemob;
31
32 import java.rmi.*;
33 import java.rmi.registry.*;
34 public class Server {
35     public static void main(String[] args) throws Exception
36     {
37         try{
38             Registry r =
39 java.rmi.registry.LocateRegistry.createRegistry(1099);
40             r.rebind("CALC", new Impl());
41             System.out.println("Server Started...");
42         }catch(Exception e) {
43             System.out.print("Exception: " + e);
44         }
45     }
46 }
-----
47 Client.java
48 -----
49 package rmidemob;
50
51 import java.rmi.*;
52 import java.util.*;
53 public class Client {
```

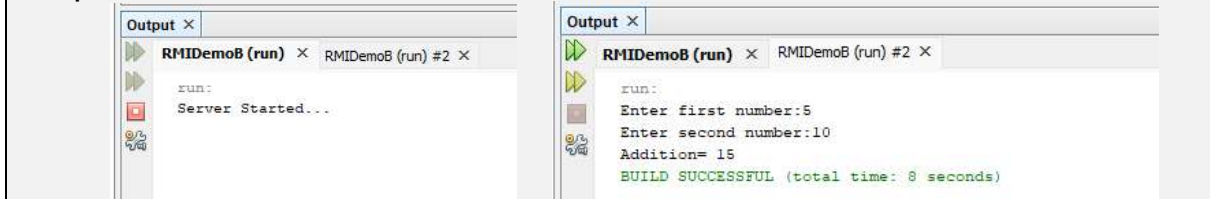


```

6      public static void main(String[] args) throws Exception {
7          Scanner sc = new Scanner(System.in);
8          System.out.print("Enter first number:");
9          int a = sc.nextInt();
10         System.out.print("Enter second number:");
11         int b = sc.nextInt();
12         int n;
13         try{
14             AddInterface obj =
(AddInterface)Naming.lookup("//localhost/CALC");
15             n = obj.add(a, b);
16             System.out.println("Addition= " + n);
17         }catch(Exception e){
18             System.out.println("Exception "+e);
19         }
20     }
21 }

```

Output:



5. HelloWorld Servlet Demo

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Hello World Servlet</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form action="/ServletDemo1/HelloWorld" method="post">
12                 <input type="submit" value="Click me">
13             </form>
14         </div>
15     </body>
16 </html>

```

```

HelloWorld.java
-----
1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7
8  public class HelloWorld extends HttpServlet {

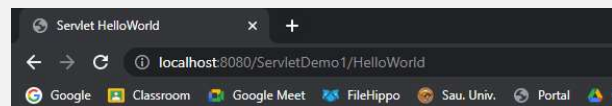
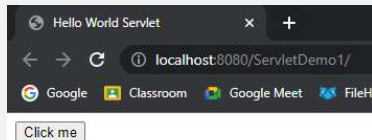
```

```

9
10     protected void processRequest(HttpServletRequest request,
    HttpServletResponse response)
11         throws ServletException, IOException {
12         response.setContentType("text/html;charset=UTF-8");
13         try (PrintWriter out = response.getWriter()) {
14             out.println("<!DOCTYPE html>");
15             out.println("<html>");
16             out.println("<head>");
17             out.println("<title>Servlet HelloWorld</title>");
18             out.println("</head>");
19             out.println("<body>");
20             out.println("<h1>Servlet HelloWorld at " +
    request.getContextPath() + "</h1>");
21             out.println("</body>");
22             out.println("</html>");
23         }
24     }
25
26     @Override
27     protected void doGet(HttpServletRequest request,
    HttpServletResponse response)
28         throws ServletException, IOException {
29         processRequest(request, response);
30     }
31
32     @Override
33     protected void doPost(HttpServletRequest request,
    HttpServletResponse response)
34         throws ServletException, IOException {
35         processRequest(request, response);
36     }
37
38     @Override
39     public String getServletInfo() {
40         return "Short description";
41     } // </editor-fold>
42
43 }

```

Output:



Servlet HelloWorld at /ServletDemo1

6. Get Data from TextBox Servlet

```

Index.html
-----
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <title>TextBox Servlet</title>
5         <meta charset="UTF-8">

```

```

6      <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7      </head>
8      <body>
9          <div>
10             <form name="form1" action="/Example2/TextBoxServlet">
11                 <table>
12                     <tr>
13                         <td>Enter name:</td>
14                         <td><input type="text" name="txtName"
size="10"></td>
15                     </tr>
16                     <tr>
17                         <td>Enter Phone no.:</td>
18                         <td><input type="text" name="txtPhone"
size="10"></td>
19                     </tr>
20                 </table>
21                 <input type="submit" value="Click">
22             </form>
23         </div>
24     </body>
25 </html>

```

TextBoxServlet.java

```

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7
8  public class TextBoxServlet extends HttpServlet {
9
10     protected void processRequest(HttpServletRequest request,
11     HttpServletResponse response)
12         throws ServletException, IOException {
13         response.setContentType("text/html;charset=UTF-8");
14         try (PrintWriter out = response.getWriter()) {
15             out.println("<!DOCTYPE html>");
16             out.println("<html>");
17             out.println("<head>");
18             out.println("<title>Servlet TextBoxServlet</title>");
19             out.println("</head>");
20             out.println("<body>");
21             String sName = request.getParameter("txtName");
22             String sPhone = request.getParameter("txtPhone");
23             out.println("Entered name: <b>"+sName+"</b>");
24             out.println("<br>Enterd Phon No: <b>"+sPhone+"</b>");
25             out.println("</body>");
26             out.println("</html>");
27         }
28     }
29
30     @Override

```

```

29     protected void doGet(HttpServletRequest request,
30     HttpServletResponse response)
31         throws ServletException, IOException {
32         processRequest(request, response);
33     }

34     @Override
35     protected void doPost(HttpServletRequest request,
36     HttpServletResponse response)
37         throws ServletException, IOException {
38         processRequest(request, response);
39     }
40
41     @Override
42     public String getServletInfo() {
43         return "Short description";
44     } // </editor-fold>
45 }
46

```

Output:

Enter name:

Enter Phone no.:

Entered name: Malay
Entered Phon No: 12345

7. Get Multiple Parameters Servlet

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Multiple Parameters</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form method="post" action="/ServletDemo3/MultiParam">
12                 <table>
13                     <tr>
14                         <td>Enter Name:</td> <td><input type="text"
15                         name="txtName"></td>
16                     </tr>
17                     <tr>
18                         <td>Enter Phone: </td><td> <input
19                         type="text" name="txtPhone"></td>
20                     </tr>
21                 </table>
22                 <input type="Submit" value="Submit">
23             </form>
24         </div>
25     </body>

```

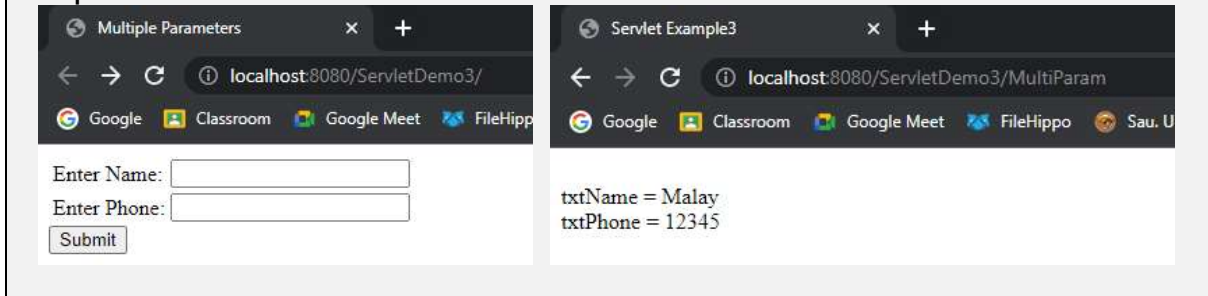
```

23 </html>
-----
MultiParam.java
-----

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import java.util.Enumeration;
4  import javax.servlet.ServletException;
5  import javax.servlet.http.HttpServlet;
6  import javax.servlet.http.HttpServletRequest;
7  import javax.servlet.http.HttpServletResponse;
8
9  public class MultiParam extends HttpServlet {
10
11      protected void processRequest(HttpServletRequest request,
12      HttpServletResponse response)
13          throws ServletException, IOException {
14          response.setContentType("text/html;charset=UTF-8");
15          try (PrintWriter out = response.getWriter()) {
16              out.println("<!DOCTYPE html>");
17              out.println("<html>");
18              out.println("<head>");
19              out.println("<title>Servlet Example3</title>");
20              out.println("</head>");
21              out.println("<body>");
22              Enumeration enu=request.getParameterNames();
23              while(enu.hasMoreElements()) {
24                  String pname=(String)enu.nextElement();
25                  out.print("<br>"+pname+" = ");
26                  String pvalue=request.getParameter(pname);
27                  out.println(pvalue);
28              }
29              out.println("</body>");
30              out.println("</html>");
31          }
32      }
33
34      @Override
35      protected void doGet(HttpServletRequest request,
36      HttpServletResponse response)
37          throws ServletException, IOException {
38          processRequest(request, response);
39      }
40
41      @Override
42      protected void doPost(HttpServletRequest request,
43      HttpServletResponse response)
44          throws ServletException, IOException {
45          processRequest(request, response);
46      }
47
48      @Override
49      public String getServletInfo() {
50          return "Short description";
51      }
52  }
53  }
54  }
55  }
56  }
57  }
58  }
59  }
60  }
61  }
62  }
63  }
64  }
65  }
66  }
67  }
68  }
69  }
70  }
71  }
72  }
73  }
74  }
75  }
76  }
77  }
78  }
79  }
80  }
81  }
82  }
83  }
84  }
85  }
86  }
87  }
88  }
89  }
90  }
91  }
92  }
93  }
94  }
95  }
96  }
97  }
98  }
99  }
100 }

```

Output:



8. DropDown ListBox Servlet

```
Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>DropDown List</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7      </head>
8      <body>
9          <div>
10             <form name="form1"
action="/ServletDemo4/DropDownListServlet" target="output">
11                 <b>Color:</b>
12                 <select name=color size=1>
13                     <option value=Red>Red</option>
14                     <option value=Green>Green</option>
15                     <option value=Blue>Blue</option>
16                 </select>
17                 <input type=submit value="Submit">
18                 </form>
19                 <br>
20                 <iframe name="output" width="200" height="100"></iframe>
21             </div>
22         </body>
23     </html>
```

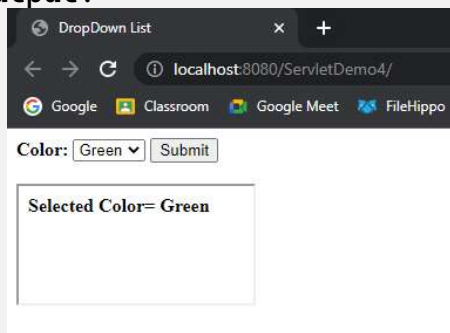
DropDownListServlet.java

```
-----
1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7
8  public class DropDownListServlet extends HttpServlet {
9
10     protected void processRequest(HttpServletRequest request,
HttpServletResponse response)
11         throws ServletException, IOException {
12         response.setContentType("text/html;charset=UTF-8");
```

```

13         try (PrintWriter out = response.getWriter()) {
14             out.println("<!DOCTYPE html>");
15             out.println("<html>");
16             out.println("<head>");
17             out.println("<title>Servlet DropDownListDemo</title>");
18             out.println("</head>");
19             out.println("<body>");
20             String c=request.getParameter("color");
21             out.print("<b>Selected Color= ");
22             out.println(c);
23             out.println("</body>");
24             out.println("</html>");
25         }
26     }
27
28     @Override
29     protected void doGet(HttpServletRequest request,
30                          HttpServletResponse response)
31         throws ServletException, IOException {
32         processRequest(request, response);
33     }
34
35     @Override
36     protected void doPost(HttpServletRequest request,
37                          HttpServletResponse response)
38         throws ServletException, IOException {
39         processRequest(request, response);
40     }
41
42     @Override
43     public String getServletInfo() {
44         return "Short description";
45     }
46 }

```

Output:**9. Servlet Life Cycle Demo**

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Servlet LifeCycle</title>
5          <meta charset="UTF-8">

```

```

6      <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7      </head>
8      <body>
9          <div>
10             <form name="form1"
action="/ServletDemo5/ServletLifeCycle" target="output">
11                 <input type="submit" value="Submit">
12             </form>
13             <iframe name="output"></iframe>
14         </div>
15     </body>
16 </html>

```

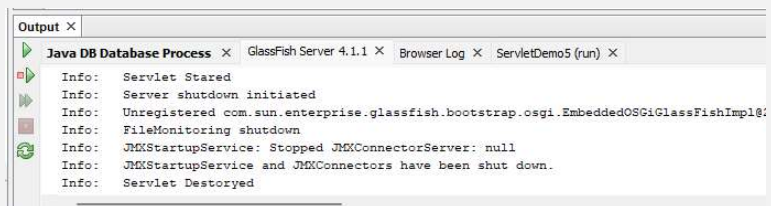
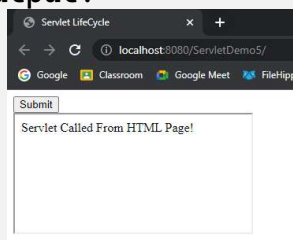
ServletLifeCycle.java

```

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.GenericServlet;
4  import javax.servlet.ServletException;
5  import javax.servlet.ServletRequest;
6  import javax.servlet.ServletResponse;
7
8  public class ServletLifeCycle extends GenericServlet {
9      private String str;
10     @Override
11     public void init() {
12         // initialize the servlet, and print in the console.
13         str = "Servlet Called From HTML Page!";
14         System.out.println("Servlet Stared");
15     }
16     @Override
17     public void service(ServletRequest request, ServletResponse
response)
18         throws ServletException, IOException {
19         // the service method will
20         response.setContentType("text/html");
21         PrintWriter out = response.getWriter();
22         out.println(str);
23     }
24
25     @Override
26     public void destroy() {
27         System.out.print("Servlet Destroyed");
28     }
29 }

```

Output:



10. Session Tracking Approach

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Session Tracking</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form target="output">
12                 Enter text: <input type="text" name="txtValue">
13                 <button type="submit"
formaction="/ServletDemo6/SetSession">Store</button>
14                 <button type="submit"
formaction="/ServletDemo6/GetSession">Restore</button>
15             </form>
16             <iframe name="output"></iframe>
17         </div>
18 </body>
</html>
-----

SetSession.java
-----
1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7  import javax.servlet.http.HttpSession;
8
9  public class SetSession extends HttpServlet {
10
11      protected void processRequest(HttpServletRequest request,
12      HttpServletResponse response)
13          throws ServletException, IOException {
14          response.setContentType("text/html;charset=UTF-8");
15          try (PrintWriter out = response.getWriter()) {
16              String s = request.getParameter("txtValue");
17              HttpSession session = request.getSession(true);
18              session.setAttribute("SessionData", s);
19              out.println("<!DOCTYPE html>");
20              out.println("<html>");
21              out.println("<head>");
22              out.println("<title>Servlet SetSession</title>");
23              out.println("</head>");
24              out.println("<body>");
25              out.println("Value Stored <b>"+s+"</b>");
26              out.println("</body>");
27              out.println("</html>");
28          }
29      }
30  }

```

```

29
30     @Override
31     protected void doGet(HttpServletRequest request,
32                           HttpServletResponse response)
33         throws ServletException, IOException {
34         processRequest(request, response);
35     }
36
37     @Override
38     protected void doPost(HttpServletRequest request,
39                           HttpServletResponse response)
40         throws ServletException, IOException {
41         processRequest(request, response);
42     }
43
44     @Override
45     public String getServletInfo() {
46         return "Short description";
47     } // </editor-fold>
48 }
49
50 -----
51 GetSession.java
52 -----
53 1 import java.io.IOException;
54 2 import java.io.PrintWriter;
55 3 import javax.servlet.ServletException;
56 4 import javax.servlet.http.HttpServlet;
57 5 import javax.servlet.http.HttpServletRequest;
58 6 import javax.servlet.http.HttpServletResponse;
59 7 import javax.servlet.http.HttpSession;
60 8
61 9 public class GetSession extends HttpServlet {
62 10     protected void processRequest(HttpServletRequest request,
63                                   HttpServletResponse response)
64         throws ServletException, IOException {
65         response.setContentType("text/html; charset=UTF-8");
66         try (PrintWriter out = response.getWriter()) {
67             out.println("<!DOCTYPE html>");
68             out.println("<html>");
69             out.println("<head>");
70             out.println("<title>Servlet GetSession</title>");
71             out.println("</head>");
72             out.println("<body>");
73             HttpSession session = request.getSession(true);
74             String
75 sValue=session.getAttribute("SessionData").toString();
76             out.println("<a href=UrlRewrite?Data="+sValue+">Url
77 Rewrite<br> </a>");
78             out.println("Session Value is <b>"+sValue+"</b>");
79             out.println("</body>");
80             out.println("</html>");
81         }
82     }
83
84     @Override
85     protected void doGet(HttpServletRequest request,
86                           HttpServletResponse response)

```

```

31         throws ServletException, IOException {
32             processRequest(request, response);
33         }
34
35         @Override
36         protected void doPost(HttpServletRequest request,
37                                 HttpServletResponse response)
38             throws ServletException, IOException {
39             processRequest(request, response);
40         }
41
42         @Override
43         public String getServletInfo() {
44             return "Short description";
45         }
46     }
47 }
48
49 -----
50
51 UrlRewrite.java
52 -----
53
54 1 import java.io.IOException;
55 2 import java.io.PrintWriter;
56 3 import javax.servlet.ServletException;
57 4 import javax.servlet.http.HttpServlet;
58 5 import javax.servlet.http.HttpServletRequest;
59 6 import javax.servlet.http.HttpServletResponse;
60 7
61 8 public class UrlRewrite extends HttpServlet {
62 9
63 10     protected void processRequest(HttpServletRequest request,
64                                     HttpServletResponse response)
65         throws ServletException, IOException {
66         response.setContentType("text/html;charset=UTF-8");
67         try (PrintWriter out = response.getWriter()) {
68             out.println("<!DOCTYPE html>");
69             out.println("<html>");
70             out.println("<head>");
71             out.println("<title>Servlet UrlRewrite</title>");
72             out.println("</head>");
73             out.println("<body>");
74             String d=request.getParameter("Data");
75             out.println("Value passed is <b>"+d);
76             out.println("</body>");
77             out.println("</html>");
78         }
79     }
80
81     @Override
82     protected void doGet(HttpServletRequest request,
83                           HttpServletResponse response)
84         throws ServletException, IOException {
85         processRequest(request, response);
86     }
87
88     @Override
89     protected void doPost(HttpServletRequest request,
90                           HttpServletResponse response)

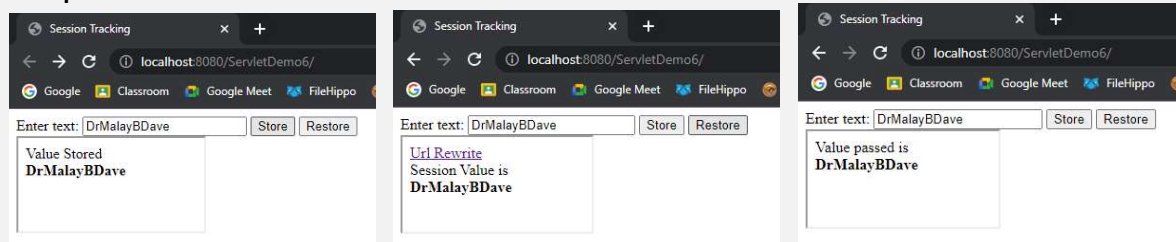
```

```

35         throws ServletException, IOException {
36             processRequest(request, response);
37         }
38
39         @Override
40         public String getServletInfo() {
41             return "Short description";
42         } // </editor-fold>
43     }

```

Output:



11. Cookies Demo

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Cookies Demo</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form action="FirstServlet" method="post">
12                 Name:<input type="text" name="userName"/><br/>
13                 <input type="submit" value="Go"/>
14             </form>
15         </div>
16     </body>
</html>
-----
FirstServlet.java
-----
1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.Cookie;
5  import javax.servlet.http.HttpServlet;
6  import javax.servlet.http.HttpServletRequest;
7  import javax.servlet.http.HttpServletResponse;
8
9  public class FirstServlet extends HttpServlet {
10
11      @Override

```

```

12     protected void doPost(HttpServletRequest request,
    HttpServletResponse response)
13         throws ServletException, IOException {
14         response.setContentType("text/html");
15         try (PrintWriter out = response.getWriter()) {
16             String n=request.getParameter("userName");
17             out.print("Welcome "+n);
18
19             Cookie ck=new Cookie("uname",n);//creating cookie
    object
20             response.addCookie(ck);//adding cookie in the
    response
21
22             //creating submit button
23             out.print("<form action='SecondServlet'
    method='post'>");
24             out.print("<input type='submit' value='Go'>");
25             out.print("</form>");
26         }
27     }
28
29     @Override
30     public String getServletInfo() {
31         return "Short description";
32     }// </editor-fold>
33 }

```

----- SecondServlet.java

```

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.http.Cookie;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7
8  public class SecondServlet extends HttpServlet {
9      @Override
10     public void doPost(HttpServletRequest request,
    HttpServletResponse response) throws IOException{
11         response.setContentType("text/html");
12         try (PrintWriter out = response.getWriter()) {
13             Cookie ck[]=request.getCookies();
14             out.print("Hello "+ck[0].getValue());
15         }
16     }
17 }
18 @Override
19     protected void doPost(HttpServletRequest request,
    HttpServletResponse response)
20         throws ServletException, IOException {
21         processRequest(request, response);
22     }
23
24     @Override
25     public String getServletInfo() {
        return "Short description";
    }

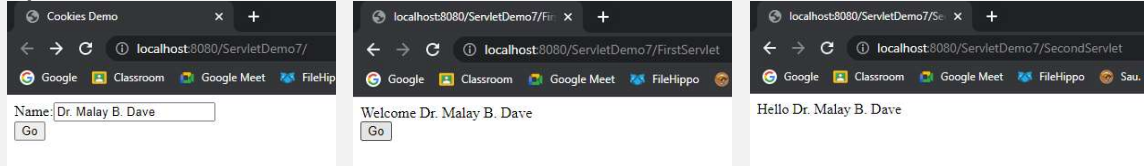
```

```

26 } // </editor-fold>
27 }

```

Output:



12. Page Hit Counter Demo

```

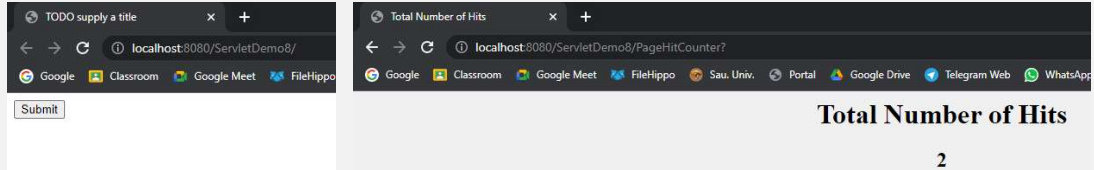
Index.html
-----
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TODO supply a title</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7   </head>
8   <body>
9     <div>
10      <form method="get" action="/ServletDemo8/PageHitCounter">
11        <input type="submit">
12      </form>
13    </div>
14  </body>
15 </html>
-----
PageHitCounter.java
-----
1 import java.io.*;
2 import java.sql.Date;
3 import java.util.*;
4 import javax.servlet.*;
5 import javax.servlet.http.*;
6
7 public class PageHitCounter extends HttpServlet {
8   private int hitCount;
9   public void init() {
10     // Reset hit counter.
11     hitCount = 0;
12   }
13
14   public void doGet(HttpServletRequest request, HttpServletResponse
response)
15     throws ServletException, IOException {
16     // Set response content type
17     response.setContentType("text/html");
18     // This method executes whenever the servlet is hit
19     // increment hitCount
20     hitCount++;
21     PrintWriter out = response.getWriter();
22     String title = "Total Number of Hits";

```

```

23 String docType = "<!doctype html>\n";
24
25 out.println(docType + "<html>\n" +
26 "<head><title>" + title + "</title></head>\n" +
27 "<body bgcolor = \"#f0f0f0\">\n" +
28 "<h1 align = \"center\">" + title + "</h1>\n" +
29 "<h2 align = \"center\">" + hitCount + "</h2>\n" +
30 "</body> </html>");
31 }
32 }

```

Output:**13. Servlet with JDBC**

```

Index.html
-----
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Servlet with JDBC</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-
7   scale=1.0">
8   </head>
9   <body>
10    <div>
11      <form name="form1" target="output">
12        <table>
13          <tr>
14            <td>Enter Rlno:</td><td><input type="text"
15            name="txtRlno"></td>
16          </tr>
17          <tr>
18            <td>Enter Name:</td><td><input type="text"
19            name="txtName"></td>
20          </tr>
21          <tr>
22            <td>Enter City: </td><td><input type="text"
23            name="txtCity"></td>
24          </tr>
25          </table>
26          <button type="submit"
formaction="/ServletDemo9/InsertData">Insert</button>
          <button type="submit"
formaction="/ServletDemo9/UpdateData">Update</button>
          <button type="submit"
formaction="/ServletDemo9/DeleteData">Delete</button>
          <button type="submit"
formaction="/ServletDemo9/ViewData">View</button>
        </form>

```

```

27         </div>
28         <iframe name="output"></iframe>
29     </body>
30 </html>
-----
InsertData.java
-----

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import javax.servlet.ServletException;
4  import javax.servlet.http.HttpServlet;
5  import javax.servlet.http.HttpServletRequest;
6  import javax.servlet.http.HttpServletResponse;
7  import java.sql.*;
8  import javax.servlet.RequestDispatcher;
9
10 public class InsertData extends HttpServlet {
11     protected void processRequest(HttpServletRequest request,
12     HttpServletResponse response)
13         throws ServletException, IOException {
14         response.setContentType("text/html;charset=UTF-8");
15         try (PrintWriter out = response.getWriter()) {
16             out.println("<!DOCTYPE html>");
17             out.println("<html>");
18             out.println("<head>");
19             out.println("<title>Servlet InsertData</title>");
20             out.println("</head>");
21             out.println("<body>");
22             try{
23                 Class.forName("com.mysql.jdbc.Driver");
24                 Connection
25                 con=DriverManager.getConnection("jdbc:mysql://localhost/College",
26                 "root", "");
27                 Statement st=con.createStatement();
28                 String r,s,c;
29                 r=request.getParameter("txtRlno");
30                 s=request.getParameter("txtName");
31                 c=request.getParameter("txtCity");
32                 String qry="Insert into student
33                 values("+r+", '"+s+"', '"+c+"')";
34                 //out.print(qry);
35                 int rows = st.executeUpdate(qry);
36                 out.println(rows+ " <b> Record(s) Inserted</b><br>");
37                 st.close();
38                 con.close();
39             }catch(Exception e){
40                 e.printStackTrace();
41             }
42             RequestDispatcher rd =
43             request.getRequestDispatcher("ViewData");
44             rd.forward(request,response);
45             out.println("</body>");
46             out.println("</html>");
47         }
48     }
49     @Override

```



```

45     protected void doGet(HttpServletRequest request,
46                           HttpServletResponse response)
47         throws ServletException, IOException {
48         processRequest(request, response);
49     }
50
51     @Override
52     protected void doPost(HttpServletRequest request,
53                           HttpServletResponse response)
54         throws ServletException, IOException {
55         processRequest(request, response);
56     }
57
58     @Override
59     public String getServletInfo() {
60         return "Short description";
61     }
62 }
63
64 -----
65 ViewData.java
66 -----
67 1  import java.io.IOException;
68 2  import java.io.PrintWriter;
69 3  import javax.servlet.ServletException;
70 4  import javax.servlet.http.HttpServlet;
71 5  import javax.servlet.http.HttpServletRequest;
72 6  import javax.servlet.http.HttpServletResponse;
73 7  import java.sql.*;
74 8
75 9  public class ViewData extends HttpServlet {
76 10     protected void processRequest(HttpServletRequest request,
77                                   HttpServletResponse response)
78         throws ServletException, IOException {
79         response.setContentType("text/html;charset=UTF-8");
80         try (PrintWriter out = response.getWriter()) {
81             out.println("<!DOCTYPE html>");
82             out.println("<html>");
83             out.println("<head>");
84             out.println("<title>Servlet ViewData</title>");
85             out.println("</head>");
86             out.println("<body>");
87             try{
88                 Class.forName("com.mysql.jdbc.Driver");
89                 Connection
90 con=DriverManager.getConnection("jdbc:mysql://localhost/College",
91 "root", "");
92
93                 Statement st=con.createStatement();
94                 String qry="select * from student";
95                 ResultSet rs = st.executeQuery(qry);
96                 out.println("<table border=1>");
97                 out.println("<thead><b>Student's List</b></thead>");
98                 out.println("<tr>");
99                 out.println("<th>Rlno<th>Name<th>City</tr>");
100                 while(rs.next()){
101                     int r;
102                     String s,c;
103                     r=rs.getInt("rlno");

```

```

34         s=rs.getString("sname");
35         c=rs.getString("city");
36         out.println("<tr>");
37         out.println("<td>"+r+"<td>"+s+"<td>"+c+"</tr>");
38     }
39     out.println("</table>");
40     rs.close();
41     st.close();
42     con.close();
43 }catch(Exception e){
44     e.printStackTrace();
45 }
46 out.println("</body>");
47 out.println("</html>");
48 }
49 }
50
51 @Override
52 protected void doGet(HttpServletRequest request,
53     HttpServletResponse response)
54     throws ServletException, IOException {
55     processRequest(request, response);
56 }
57
58 @Override
59 protected void doPost(HttpServletRequest request,
60     HttpServletResponse response)
61     throws ServletException, IOException {
62     processRequest(request, response);
63 }
64
65 @Override
66 public String getServletInfo() {
67     return "Short description";
68 }

```

----- DeleteData.java -----

```

1  import java.io.IOException;
2  import java.io.PrintWriter;
3  import java.sql.Connection;
4  import java.sql.DriverManager;
5  import java.sql.Statement;
6  import javax.servlet.ServletException;
7  import javax.servlet.http.HttpServlet;
8  import javax.servlet.http.HttpServletRequest;
9  import javax.servlet.http.HttpServletResponse;
10 import javax.servlet.RequestDispatcher;
11
12 public class DeleteData extends HttpServlet {
13
14     protected void processRequest(HttpServletRequest request,
15     HttpServletResponse response)
16     throws ServletException, IOException {
17         response.setContentType("text/html;charset=UTF-8");
18         try (PrintWriter out = response.getWriter()) {

```

```

18         out.println("<!DOCTYPE html>");
19         out.println("<html>");
20         out.println("<head>");
21         out.println("<title>Servlet DeleteData</title>");
22         out.println("</head>");
23         out.println("<body>");
24         try{
25             Class.forName("com.mysql.jdbc.Driver");
26             Connection
con=DriverManager.getConnection("jdbc:mysql://localhost/College",
"root", "");
27             Statement st=con.createStatement();
28             String r;
29             r=request.getParameter("txtRlno");
30             String qry="Delete from student where rlno="+r;
31             int rows = st.executeUpdate(qry);
32             out.println(rows+ "<b> Record(s) Deleted</b>");
33             st.close();
34             con.close();
35         }catch(Exception e){
36             e.printStackTrace();
37         }
38         RequestDispatcher rd =
request.getRequestDispatcher("ViewData");
39         rd.forward(request,response);
40         out.println("</body>");
41         out.println("</html>");
42     }
43 }
44
45 @Override
46 protected void doGet(HttpServletRequest request,
HttpServletRequest response)
47     throws ServletException, IOException {
48     processRequest(request, response);
49 }
50
51 @Override
52 protected void doPost(HttpServletRequest request,
HttpServletRequest response)
53     throws ServletException, IOException {
54     processRequest(request, response);
55 }
56
57 @Override
58 public String getServletInfo() {
59     return "Short description";
60 } // </editor-fold>
61 }

```

UpdateData.java

```

1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import javax.servlet.ServletException;
4 import javax.servlet.http.HttpServlet;
5 import javax.servlet.http.HttpServletRequest;

```

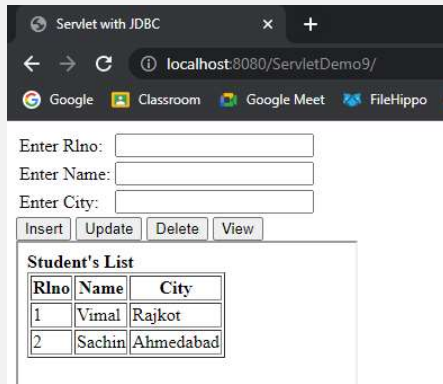
```

6  import javax.servlet.http.HttpServletResponse;
7  import java.sql.*;
8  import javax.servlet.RequestDispatcher;
9
10 public class UpdateData extends HttpServlet {
11
12     protected void processRequest(HttpServletRequest request,
13     HttpServletResponse response)
14         throws ServletException, IOException {
15         response.setContentType("text/html;charset=UTF-8");
16         try (PrintWriter out = response.getWriter()) {
17             out.println("<!DOCTYPE html>");
18             out.println("<html>");
19             out.println("<head>");
20             out.println("<title>Servlet UpdateData</title>");
21             out.println("</head>");
22             out.println("<body>");
23             try{
24                 Class.forName("com.mysql.jdbc.Driver");
25                 Connection
26                 con=DriverManager.getConnection("jdbc:mysql://localhost/College",
27                 "root", "");
28                 Statement st=con.createStatement();
29                 String r,s,c;
30                 r=request.getParameter("txtRlno");
31                 s=request.getParameter("txtName");
32                 c=request.getParameter("txtCity");
33                 String qry="Update student set sname='"+s+"',
34                 city='"+c+"' where rlno="+r;
35                 //out.print(qry);
36                 int rows = st.executeUpdate(qry);
37                 out.println(rows+ " <b> Record(s) Updated</b><br>");
38                 st.close();
39                 con.close();
40             }catch(Exception e){
41                 e.printStackTrace();
42             }
43             RequestDispatcher rd =
44             request.getRequestDispatcher("ViewData");
45             rd.forward(request,response);
46             out.println("</body>");
47             out.println("</html>");
48         }
49     }
50
51     @Override
52     protected void doGet(HttpServletRequest request,
53     HttpServletResponse response)
54         throws ServletException, IOException {
55         processRequest(request, response);
56     }
57
58     @Override
59     protected void doPost(HttpServletRequest request,
60     HttpServletResponse response)
61         throws ServletException, IOException {
62         processRequest(request, response);
63     }
64 }

```

```
56     }
57
58     @Override
59     public String getServletInfo() {
60         return "Short description";
61     } // </editor-fold>
62 }
```

Output:



Servlet with JDBC

localhost:8080/ServletDemo9/

Enter Rno:

Enter Name:

Enter City:

Insert Update Delete View

Student's List

| Rlno | Name | City |
|------|--------|-----------|
| 1 | Vimal | Rajkot |
| 2 | Sachin | Ahmedabad |

Unit-3

JSP, Java Beans

H. & H. B. Kotak Institute of Science, Rajkot

14. HelloWorld JSP

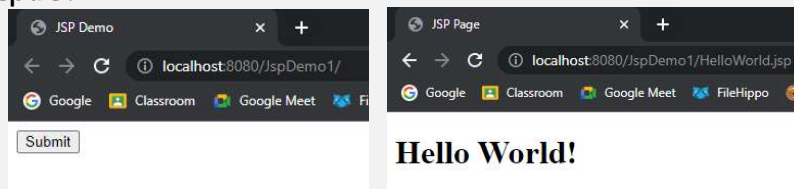
```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>JSP Demo</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form method="post" action="HelloWorld.jsp">
12                 <input type="submit">
13             </form>
14         </div>
15     </body>
</html>
-----

HelloWorld.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
6  charset=UTF-8">
7          <title>JSP Page</title>
8      </head>
9      <body>
10         <%
11             out.println("<h1>Hello World!</h1>");
12         %>
13     </body>
</html>

```

Output:



15. JSP Life Cycle

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>JSP LifeCycle</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">

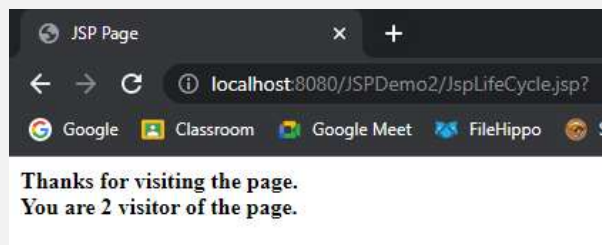
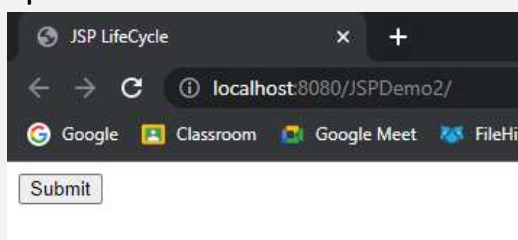
```

```

8      </head>
9      <body>
10         <div>
11             <form action="JspLifeCycle.jsp">
12                 <input type="submit">
13             </form>
14         </div>
15     </body>
16 </html>
-----
JspLifeCycle.jsp
-----
1
2 <%@page contentType="text/html" pageEncoding="UTF-8"%>
3 <!DOCTYPE html>
4 <html>
5     <head>
6         <meta http-equiv="Content-Type" content="text/html;
7         charset=UTF-8">
8         <title>JSP Page</title>
9     </head>
10    <body>
11        <%!
12            int visitorCounter ;
13            public void jspInit()
14            {
15                visitorCounter=0;
16            }
17            public void jspDestroy()
18            {
19                visitorCounter=0;
20            }
21        %>
22        <%
23            visitorCounter++;
24        %>
25        <strong>
26            Thanks for visiting the page.<br> You are
27            <%=visitorCounter %> visitor of the page.
28        </strong>
29    </body>
30 </html>

```

Output:



16. JSP Page Directive

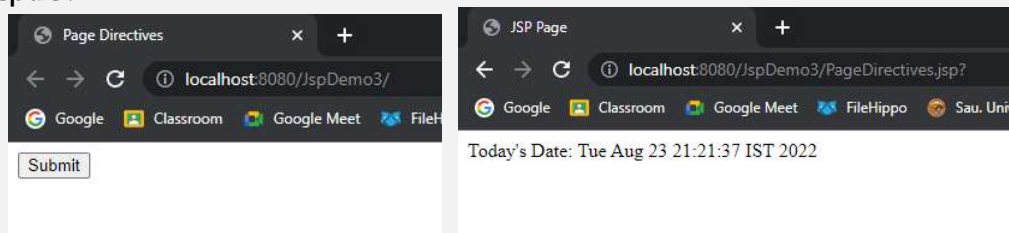
```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Page Directives</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form action="PageDirectives.jsp">
12                 <input type="submit" value="Submit">
13             </form>
14         </div>
15     </body>
</html>
-----

PageDirectives.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
2  import="java.util.*"%>
3  <!DOCTYPE html>
4  <html>
5      <head>
6          <meta http-equiv="Content-Type" content="text/html;
7  charset=UTF-8">
8          <title>JSP Page</title>
9      </head>
10     <body>
11         <%
12             Date d = new Date();
13             out.print("Today's Date: "+d);
14         %>
15     </body>
</html>

```

Output:



17. JSP Include Directive

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>

```

```

4         <title>Include Declarative</title>
5         <meta charset="UTF-8">
6         <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7     </head>
8     <body>
9         <div>
10             <form action="IncludeDemo.jsp">
11                 <input type="submit" value="Submit">
12             </form>
13         </div>
14     </body>
15 </html>
-----
IncludeDemo.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6 charset=UTF-8">
7         <title>JSP Page</title>
8     </head>
9     <body>
10         <%@include file="Header.jsp" %>
11         <%
12             out.print("<h1>Hello World!</h1>");
13         %>
14         <%@include file="Footer.jsp" %>
15     </body>
</html>
-----
Header.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6 charset=UTF-8">
7         <title>JSP Page</title>
8     </head>
9     <body>
10         <center><h1>The Header</h1></center>
11     </body>
</html>
-----
Footer.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6 charset=UTF-8">
7         <title>JSP Page</title>

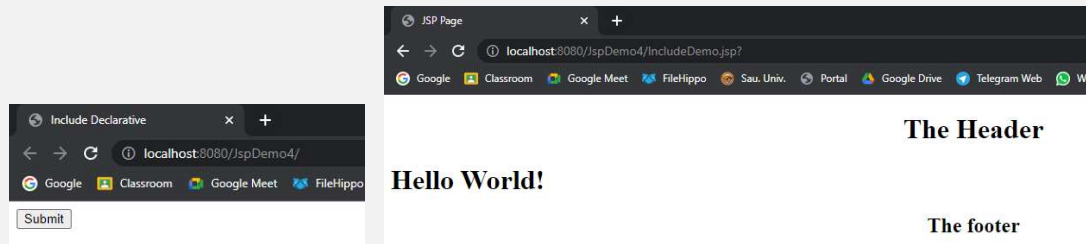
```

```

7      </head>
8      <body>
9          <center><h2>The footer</h2></center>
10     </body>
11 </html>

```

Output:



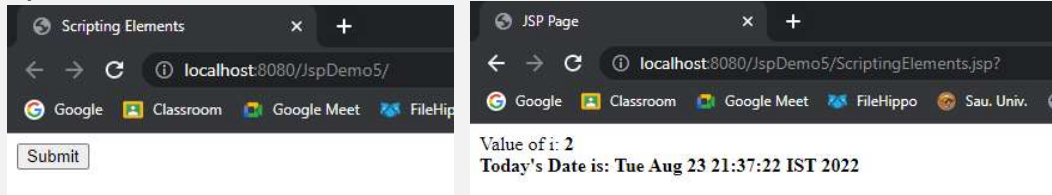
18. JSP Scripting Elements

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Scripting Elements</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7      </head>
8      <body>
9          <div>
10             <form action="ScriptingElements.jsp">
11                 <input type="submit" value="Submit">
12             </form>
13         </div>
14     </body>
15 </html>
-----
ScriptingElements.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
6          <title>JSP Page</title>
7      </head>
8      <body>
9          <!-- Declaration Scripting Element -->
10         <%! int i=0; %>
11         <!-- Scriptlet Scripting Element -->
12         <% out.print("Value of i: <b>" + ++i); %>
13         <br>
14         <!-- Expression Scripting Elements -->
15         <b> Today's Date is: <%=new java.util.Date()%>
16     </body>
17 </html>

```

Output:



19. JSP Include Action Element

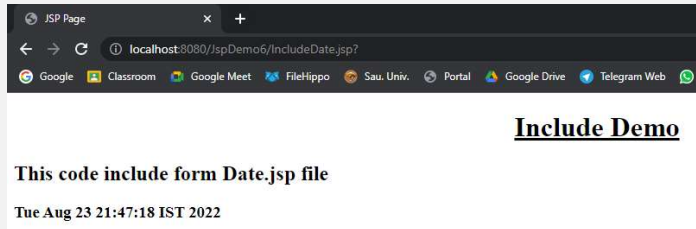
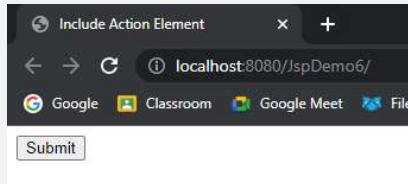
```
Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Include Action Element</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form action="IncludeDate.jsp" >
12                 <input type="submit" value="Submit">
13             </form>
14         </div>
15     </body>
16 </html>
-----
IncludeDate.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
6  charset=UTF-8">
7          <title>JSP Page</title>
8      </head>
9      <body>
10         <u><h1 align="center">Include Demo</h1></u>
11         <jsp:include page="Date.jsp" flush="true"/>
12     </body>
13 </html>
-----
Date.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
6  charset=UTF-8">
7          <title>JSP Page</title>
8      </head>
9      <body>
```

```

9      <h2>This code include form Date.jsp file</h2>
10     <% java.util.Date now = new java.util.Date(); %>
11     <h3><%= now.toString()%></h3>
12     </body>
13 </html>

```

Output:



20. JSP Forward/Param Action Element

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Forward/Param Action Element</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
7  scale=1.0">
8      </head>
9      <body>
10         <div>
11             <form action="PrintDate.jsp">
12                 <input type="submit" value="Submit">
13             </form>
14         </div>
15     </body>
16 </html>

```

```

PrintDate.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
6  charset=UTF-8">
7          <title>JSP Page</title>
8      </head>
9      <body>
10         <h1 align="Center">Forward Action Element</h1>
11         <jsp:forward page="Date.jsp" >
12             <jsp:param name="sem" value="BCA Semester - 5" />
13         </jsp:forward>
14     </body>
15 </html>

```

```

Date.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>

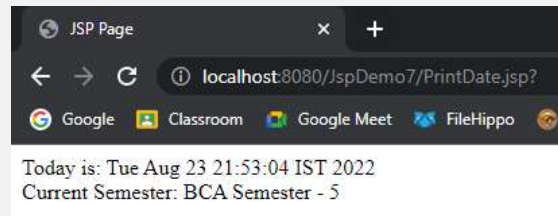
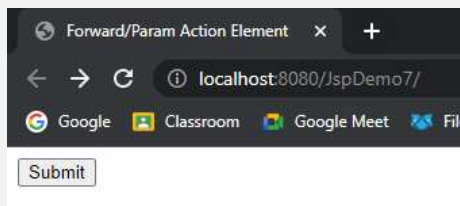
```

```

2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
        charset=UTF-8">
6         <title>JSP Page</title>
7     </head>
8     <body>
9         <% out.print("Today is: " + new java.util.Date()); %>
10        <br>Current Semester: <%= request.getParameter("sem") %>
11    </body>
12 </html>

```

Output:



21. JSP Cookies

```

Index.html
-----
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <title>Cookies Demo</title>
5         <meta charset="UTF-8">
6         <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7     </head>
8     <body>
9         <div>
10            <form name="from" target="output" method="post">
11                Enter text :<input type="text" name="txtValue"><br>
12                <button type="submit"
formaction="/JspDemo8/StoreValue.jsp">Store</button>
13                <button type="submit"
formaction="/JspDemo8/RestoreValue.jsp">Restore</button>
14            </form>
15        </div>
16        <iframe name="output"></iframe>
17    </body>
18 </html>
-----
StoreValue.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
        charset=UTF-8">
6         <title>Store Cookies</title>

```

```

7      </head>
8      <body>
9          <%
10             String s = request.getParameter("txtValue");
11             Cookie ck = new Cookie("uname",s);
12             ck.setMaxAge(60*60*24);
13             response.addCookie(ck);
14             out.print("Value Stored "+ck.getValue());
15          %>
16      </body>
17 </html>

```

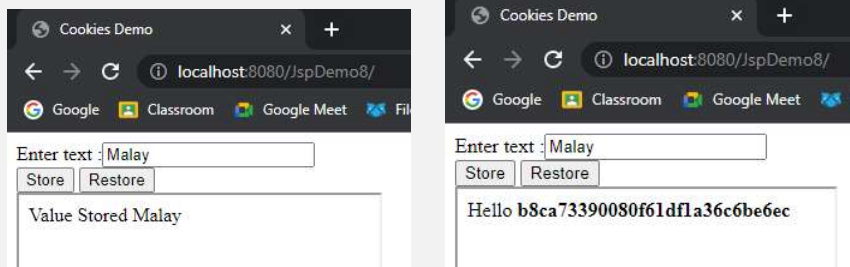
RestoreValue.jsp

```

1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6         charset=UTF-8">
7         <title>Restore Cookies</title>
8     </head>
9     <body>
10         <%
11             Cookie ck[] = request.getCookies();
12             out.print("Hello <b>" + ck[0].getValue());
13         %>
14 </body>
15 </html>

```

Output:



22. JSP Session

```

Index.html
-----
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <title>Session Demo</title>
5         <meta charset="UTF-8">
6         <meta name="viewport" content="width=device-width, initial-
7         scale=1.0">
8     </head>
9     <body>
10         <div>
11             <form name="from" target="output">
12                 Enter text :<input type="text" name="txtValue"><br>

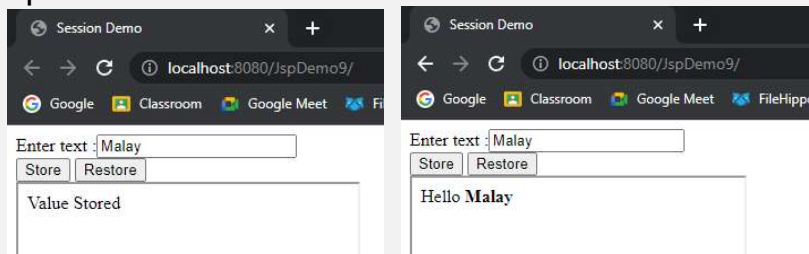
```

```

12         <button type="submit"
13         formaction="/JspDemo9/StoreValue.jsp">Store</button>
14         <button type="submit"
15         formaction="/JspDemo9/RestoreValue.jsp">Restore</button>
16     </form>
17 </div>
18 </body>
19 </html>
-----
StoreValue.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6         charset=UTF-8">
7         <title>Session Store</title>
8     </head>
9     <body>
10         <%
11             String name=request.getParameter("txtValue");
12             session.setAttribute("user",name);
13             out.print("Value Stored");
14         %>
15     </body>
16 </html>
-----
RestoreValue.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6         charset=UTF-8">
7         <title>Session Restore</title>
8     </head>
9     <body>
10         <%
11             String name=(String)session.getAttribute("user");
12             out.print("Hello <b>"+name);
13         %>
14     </body>
15 </html>

```

Output:



23. JSP Error Handling

```

Index.html
-----
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Error Handling Demo</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-
scale=1.0">
7      </head>
8      <body>
9          <div>
10             <form action="ErrorHandler.jsp">
11                 <table>
12                     <tr>
13                         <td>1st Number:</td>
14                         <td><input type="text" name="fno"></td>
15                     </tr>
16                     <tr>
17                         <td>2nd Number:</td>
18                         <td><input type="text" name="sno"></td>
19                     </tr>
20                 </table>
21                 <input type="submit" value="Division">
22             </form>
23         </div>
24     </body>
25 </html>
-----

ErrorHandler.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
errorPage="error.jsp"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
6          <title>Error Handler JSP</title>
7      </head>
8      <body>
9          <%
10             int fno, sno;
11             fno=Integer.parseInt(request.getParameter("fno"));
12             sno=Integer.parseInt(request.getParameter("sno"));
13             int div=fno/sno;
14         %>
15         <p>Division is: <%=div %></p>
16     </body>
17 </html>
-----

Error.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
isErrorPage="true" %>
2  <!DOCTYPE html>

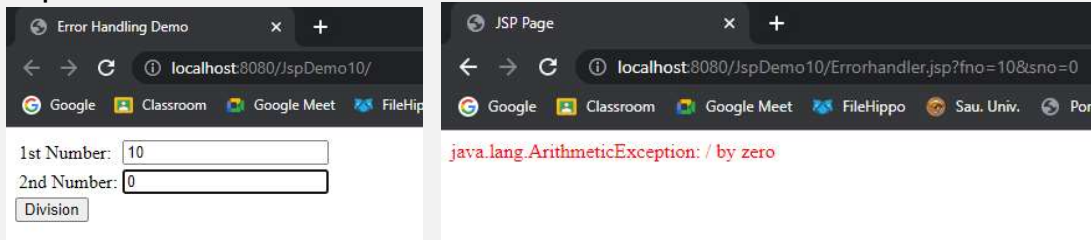
```

```

3 <html>
4   <head>
5     <meta http-equiv="Content-Type" content="text/html;
      charset=UTF-8">
6     <title>JSP Page</title>
7   </head>
8   <body>
9     <font color="red"> <%=exception.toString() %> </font>
10  </body>
11 </html>

```

Output:



24. JSP with JDBC

```

Index.html
-----
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>JSP with JDBC</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-
      scale=1.0">
7   </head>
8   <body>
9     <div>
10      <form name="form1" target="output">
11        <table>
12          <tr>
13            <td>Enter Rlno:</td><td><input type="text"
              name="txtRlno"></td>
14          </tr>
15          <tr>
16            <td>Enter Name:</td><td><input type="text"
              name="txtName"></td>
17          </tr>
18          <tr>
19            <td>Enter City: </td><td><input type="text"
              name="txtCity"></td>
20          </tr>
21        </table>
22        <button type="submit"
          formaction="/JspDemo11/InsertData.jsp">Insert</button>
23        <button type="submit"
          formaction="/JspDemo11/UpdateData.jsp">Update</button>
24        <button type="submit"
          formaction="/JspDemo11/DeleteData.jsp">Delete</button>

```

```

25         <button type="submit"
formaction="/JspDemo11/ViewData.jsp">View</button>
26     </form>
27 </div>
28     <iframe name="output"></iframe>
29 </body>
30 </html>
-----
InsertData.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
import="java.sql.*"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
6          <title>Insert Record</title>
7      </head>
8      <body>
9          <%
10             try{
11                 Class.forName("com.mysql.jdbc.Driver");
12                 Connection
con=DriverManager.getConnection("jdbc:mysql://localhost/College",
"root", "");
13                 Statement st=con.createStatement();
14                 String r,s,c;
15                 r=request.getParameter("txtRlno");
16                 s=request.getParameter("txtName");
17                 c=request.getParameter("txtCity");
18                 String qry="Insert into student
values("+r+", '"+s+"', '"+c+"')";
19                 int rows = st.executeUpdate(qry);
20                 out.println(rows+ "<b> Record(s) Inserted</b><br>");
21                 st.close();
22                 con.close();
23             }catch(Exception e){
24                 e.printStackTrace();
25             }
26         %>
27     </body>
28 </html>
-----
ViewData.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
import="java.sql.*"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
6          <title>View Record</title>
7      </head>
8      <body>
9          <%

```

```

10         try{
11             Class.forName("com.mysql.jdbc.Driver");
12             Connection
con=DriverManager.getConnection("jdbc:mysql://localhost/College",
"root", "");
13             Statement st=con.createStatement();
14             String qry="select * from student";
15             ResultSet rs = st.executeQuery(qry);
16             out.println("<table border=1>");
17             out.println("<thead><b>Student's List</b></thead>");
18             out.println("<tr>");
19             out.println("<th>Rlno<th>Name<th>City</tr>");
20             while(rs.next()){
21                 int r;
22                 String s,c;
23                 r=rs.getInt("rlno");
24                 s=rs.getString("sname");
25                 c=rs.getString("city");
26                 out.println("<tr>");
27                 out.println("<td>"+r+"<td>"+s+"<td>"+c+"</tr>");
28             }
29             out.println("</table>");
30             rs.close();
31             st.close();
32             con.close();
33         }catch(Exception e){
34             e.printStackTrace();
35         }
36         %>
37     </body>
38 </html>
-----
DeleteData.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
2  import="java.sql.*"%>
3  <!DOCTYPE html>
4  <html>
5      <head>
6          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
7          <title>Delete Record</title>
8      </head>
9      <body>
10         <%
11             try{
12                 Class.forName("com.mysql.jdbc.Driver");
13                 Connection
con=DriverManager.getConnection("jdbc:mysql://localhost/College",
"root", "");
14                 Statement st=con.createStatement();
15                 String r;
16                 r=request.getParameter("txtRlno");
17                 String qry="Delete from student where rlno="+r;
18                 int rows = st.executeUpdate(qry);
19                 out.println(rows+ " <b> Record(s) Deleted</b>");
20                 st.close();

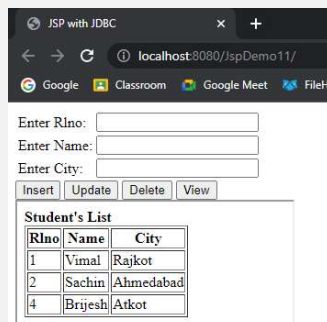
```

```

21         con.close();
22     }catch(Exception e){
23         e.printStackTrace();
24     }
25     %>
26 </body>
27 </html>
-----
UpdateData.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"
2  import="java.sql.*"%>
3  <!DOCTYPE html>
4  <html>
5      <head>
6          <meta http-equiv="Content-Type" content="text/html;
7          charset=UTF-8">
8          <title>Update Record</title>
9      </head>
10     <body>
11         <%
12             try{
13                 Class.forName("com.mysql.jdbc.Driver");
14                 Connection
15                 con=DriverManager.getConnection("jdbc:mysql://localhost/College",
16                 "root", "");
17                 Statement st=con.createStatement();
18                 String r,s,c;
19                 r=request.getParameter("txtRlno");
20                 s=request.getParameter("txtName");
21                 c=request.getParameter("txtCity");
22                 String qry="Update student set sname='"+s+"',
23                 city='"+c+"' where rlno="+r;
24                 //out.print(qry);
25                 int rows = st.executeUpdate(qry);
26                 out.println(rows+ "<b> Record(s) Updated</b><br>");
27                 st.close();
28                 con.close();
29             }catch(Exception e){
30                 e.printStackTrace();
31             }
32         %>
33     </body>
34 </html>

```

Output:



Enter Rlno:

Enter Name:

Enter City:

Insert Update Delete View

Student's List

| Rlno | Name | City |
|------|---------|-----------|
| 1 | Vimal | Rajkot |
| 2 | Sachin | Ahmedabad |
| 4 | Brijesh | Atkot |

Unit-4

MVC Architecture, EJB, Hibernate

H. & H. B. Kotak Institute of Science, Rajkot

25. Hibernate with Oracle

```

hibernate.cfg.xml
-----
1  <?xml version="1.0" encoding="UTF-8"?>
2  <!DOCTYPE hibernate-configuration PUBLIC "-//Hibernate/Hibernate
   Configuration DTD 3.0//EN"
   "http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">
3  <hibernate-configuration>
4      <session-factory>
5          <property
            name="hibernate.dialect">org.hibernate.dialect.OracleDialect</proper
            ty>
6          <property
            name="hibernate.connection.driver_class">oracle.jdbc.OracleDriver</p
            roperty>
7          <property
            name="hibernate.connection.url">jdbc:oracle:thin:@//localhost:1521/x
            epdb1</property>
8          <property name="hibernate.connection.username">hr</property>
9          <property name="hibernate.connection.password">hr</property>
10         <mapping resource="hibernatedemo1/Dept.hbm.xml"/>
11     </session-factory>
12 </hibernate-configuration>
-----

hibernate.reveng.xml
-----
1  <?xml version="1.0" encoding="UTF-8"?>
2  <!DOCTYPE hibernate-reverse-engineering PUBLIC "-//
   //Hibernate/Hibernate Reverse Engineering DTD 3.0//EN"
   "http://hibernate.sourceforge.net/hibernate-reverse-engineering-
   3.0.dtd">
3  <hibernate-reverse-engineering>
4      <schema-selection match-schema="HR"/>
5      <table-filter match-name="DEPT"/>
6  </hibernate-reverse-engineering>
-----

Dept.hbm.xml
-----
1  <?xml version="1.0"?>
2  <!DOCTYPE hibernate-mapping PUBLIC "-//Hibernate/Hibernate Mapping
   DTD 3.0//EN"
   "http://www.hibernate.org/dtd/hibernate-mapping-3.0.dtd">
3  <hibernate-mapping>
4      <class name="hibernatedemo1.Dept" table="DEPT" schema="HR"
            optimistic-lock="version">
5          <id name="deptno" type="int">
6              <column name="DEPTNO" precision="2" scale="0" />
7              <generator class="assigned" />
8          </id>
9          <property name="dname" type="string">
10             <column name="DNAME" length="14" />
11         </property>
12         <property name="loc" type="string">
13             <column name="LOC" length="13" />
14         </property>
15     </class>
16 </hibernate-mapping>

```

Dept.java

```
1 package hibernatedemo1;
2
3 public class Dept implements java.io.Serializable {
4
5     private int deptno;
6     private String dname;
7     private String loc;
8
9     public Dept() {
10    }
11
12     public Dept(int deptno) {
13         this.deptno = deptno;
14     }
15     public Dept(int deptno, String dname, String loc) {
16         this.deptno = deptno;
17         this.dname = dname;
18         this.loc = loc;
19     }
20
21     public int getDeptno() {
22         return this.deptno;
23     }
24
25     public void setDeptno(int deptno) {
26         this.deptno = deptno;
27     }
28     public String getDname() {
29         return this.dname;
30     }
31
32     public void setDname(String dname) {
33         this.dname = dname;
34     }
35     public String getLoc() {
36         return this.loc;
37     }
38
39     public void setLoc(String loc) {
40         this.loc = loc;
41     }
42 }
```

NewHibernateUtil.java

```
1 package hibernatedemo1;
2
3 import org.hibernate.cfg.AnnotationConfiguration;
4 import org.hibernate.SessionFactory;
5
6 public class NewHibernateUtil {
7
8     private static final SessionFactory sessionFactory;
9     static {
```



```

10     try {
11         // Create the SessionFactory from standard
(hibernate.cfg.xml)
12         // config file.
13         sessionFactory = new
AnnotationConfiguration().configure().buildSessionFactory();
14     } catch (Throwable ex) {
15         // Log the exception.
16         System.err.println("Initial SessionFactory creation
failed." + ex);
17         throw new ExceptionInInitializerError(ex);
18     }
19 }
20
21 public static SessionFactory getSessionFactory() {
22     return sessionFactory;
23 }
24 }

```

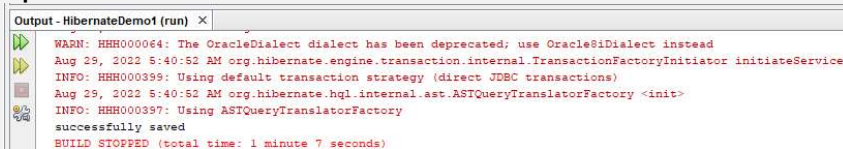
 HibernateDemo.java

```

1 package hibernatedemo1;
2
3 import org.hibernate.Session;
4 import org.hibernate.SessionFactory;
5 import org.hibernate.Transaction;
6
7 public class HibernateDemo1 {
8     static Session session;
9     public static void insert(Dept d) {
10         SessionFactory factory =
NewHibernateUtil.getSessionFactory();
11         session = factory.openSession();
12         Transaction t = session.beginTransaction();
13         session.save(d);
14         t.commit();
15         System.out.println("successfully saved");
16         session.close();
17     }
18     public static void main(String[] args) {
19         Dept d = new Dept(50, "HR", "Rajokt");
20         insert(d);
21     }
22 }

```

Output:



```

Output - HibernateDemo1 (run)
WARN: HHH000064: The OracleDialect dialect has been deprecated; use OracleSiDialect instead
Aug 29, 2022 5:40:52 AM org.hibernate.engine.transaction.internal.TransactionFactoryInitiator initiateService
INFO: HHH000399: Using default transaction strategy (direct JDBC transactions)
Aug 29, 2022 5:40:52 AM org.hibernate.hql.internal.ast.ASTQueryTranslatorFactory <init>
INFO: HHH000397: Using ASTQueryTranslatorFactory
successfully saved
BUILD STOPPED (total time: 1 minute 7 seconds)

```

Unit – 5

Spring, Struts

H. & H. B. Kotak Institute of Science, Rajkot

26. Spring Demo

```

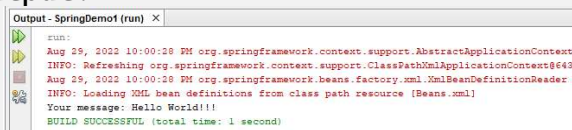
HelloWorld.java
-----
1 public class HelloWorld {
2
3     private String msg;
4
5     public String getMsg() {
6         return msg;
7     }
8
9     public void setMsg(String msg) {
10        this.msg = msg;
11    }
12
13    public void getMessage(){
14        System.out.println("Your message: "+msg);
15    }
16 }
-----

Test.java
-----
1 import org.springframework.context.ApplicationContext;
2 import
  org.springframework.context.support.ClassPathXmlApplicationContext;
3
4 public class Test {
5     public static void main(String[]arg){
6         ApplicationContext context = new
  ClassPathXmlApplicationContext("Beans.xml");
7         HelloWorld obj = (HelloWorld) context.getBean("helloWorld");
8         obj.getMessage();
9     }
10 }
-----

Beans.xml
-----
1 <?xml version = "1.0" encoding = "UTF-8"?>
2
3 <beans xmlns = "http://www.springframework.org/schema/beans"
  xmlns:xsi = "http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation = "http://www.springframework.org/schema/beans
  http://www.springframework.org/schema/beans/spring-beans-
  3.0.xsd">
4
5     <bean id = "helloWorld" class = "HelloWorld">
6         <property name = "msg" value = "Hello World!!!"/>
7     </bean>
8
9 </beans>

```

Output:



```

Output - SpringDemo1 (run) x
run:
Aug 29, 2022 10:00:28 PM org.springframework.context.support.AbstractApplicationContext
INFO: Refreshing org.springframework.context.support.ClassPathXmlApplicationContext@648:
Aug 29, 2022 10:00:28 PM org.springframework.beans.factory.xml.XmlBeanDefinitionReader :
INFO: Loading XML bean definitions from class path resource [Beans.xml]
Your message: Hello World!!!
BUILD SUCCESSFUL (total time: 1 second)

```

27. Struts Demo

```
Index.jsp
-----
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <%@ taglib uri="http://struts.apache.org/tags-html" prefix="html" %>
3  <!DOCTYPE html>
4  <html>
5      <head>
6          <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
7          <title>Authentication</title>
8      </head>
9      <body>
10         <html:form action="loginpath" method="post">
11             <table>
12                 <tr>
13                     <td>Enter Username:</td>
14                     <td><html:text property="uname"/>
15                         <html:errors property="uerror"/>
16                     </td>
17                 </tr>
18                 <tr>
19                     <td>Enter Password:</td>
20                     <td><html:password property="pass"/>
21                         <html:errors property="perror"/>
22                     </td>
23                 </tr>
24             </table>
25             <html:submit value="Login"/>
26         </html:form>
27     </body>
28 </html>
-----

LoginBeans.java
-----
1  package com.myapp.struts;
2
3  import javax.servlet.http.HttpServletRequest;
4  import org.apache.struts.action.ActionErrors;
5  import org.apache.struts.action.ActionMapping;
6  import org.apache.struts.action.ActionMessage;
7
8  public class LoginBeans extends org.apache.struts.action.ActionForm
9  {
10
11      private String uname;
12      private String pass;
13
14      public String getUname() {
15          return uname;
16      }
17
18      public void setUname(String uname) {
19          this.uname = uname;
20      }
21
```

```

22     public String getPass() {
23         return pass;
24     }
25
26     public void setPass(String pass) {
27         this.pass = pass;
28     }
29
30     public LoginBeans() {
31         super();
31         // TODO Auto-generated constructor stub
32     }
33
34     public ActionErrors validate(ActionMapping mapping,
35     HttpServletRequest request) {
36         ActionErrors errors = new ActionErrors();
36         if (getUname() == null || getUname().length() < 1) {
37             errors.add("uerror", new
38             ActionMessage("error.username.required"));
38         }
39         if (getPass() == null || getPass().length() < 1) {
40             errors.add("perror", new
41             ActionMessage("error.password.required"));
41         }
42         return errors;
43     }
44 }

```

```

LoginAction.java
-----
1  package com.myapp.struts;
2
3  import javax.servlet.http.HttpServletRequest;
4  import javax.servlet.http.HttpServletResponse;
5  import javax.servlet.http.HttpSession;
6  import org.apache.struts.action.ActionForm;
7  import org.apache.struts.action.ActionForward;
8  import org.apache.struts.action.ActionMapping;
9
10 public class LoginAction extends org.apache.struts.action.Action {
11
12     /* forward name="success" path="" */
13     private static final String SUCCESS = "success";
14     private static final String FAILURE = "failure";
15
16     @Override
17     public ActionForward execute(ActionMapping mapping, ActionForm
18     form,
19     HttpServletRequest request, HttpServletResponse
20     response)
21     throws Exception {
22
23         LoginBeans obj =(LoginBeans)form;
24         if(obj.getUname().equalsIgnoreCase("malay") &&
25         obj.getPass().equals("dave"))
26         {
27             HttpSession session = request.getSession(true);

```

```

23         session.setAttribute("uname", obj.getUname());
24         return mapping.findForward(SUCCESS);
25     }
26     else
27         return mapping.findForward(FAILURE);
28 }
29 }
-----
success.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6 charset=UTF-8">
7         <title>Login</title>
8     </head>
9     <body>
10         <% out.println("<h1> Hello
11 "+session.getAttribute("uname")+"<h1>"); %>
12     </body>
13 </html>
-----
Failure.jsp
-----
1 <%@page contentType="text/html" pageEncoding="UTF-8"%>
2 <!DOCTYPE html>
3 <html>
4     <head>
5         <meta http-equiv="Content-Type" content="text/html;
6 charset=UTF-8">
7         <title>Fail</title>
8     </head>
9     <body>
10         <h1 style="color:red">Login Failure</h1>
11     </body>
12 </html>
-----
Struts-config.xml
-----
1 <struts-config>
2     <form-beans>
3         <form-bean name="LoginBeans"
4 type="com.myapp.struts.LoginBeans"/>
5     </form-beans>
6
7     <global-exceptions>
8
9     </global-exceptions>
10
11     <global-forwards>
12         <forward name="failure" path="/failure.jsp"/>
13         <forward name="success" path="/success.jsp"/>
14     </global-forwards>
15
16     <action-mappings>

```

```

16      <action input="/login.jsp" name="LoginBeans"
17      path="/loginpath" scope="session"
18      type="com.myapp.struts.LoginAction"/>
19
20      </action-mappings>
21
22      <controller
23      processorClass="org.apache.struts.tiles.TilesRequestProcessor"/>
24
25      <message-resources
26      parameter="com/myapp/struts/ApplicationResource"/>
27
28      </struts-config>

```

Output :