Create a web page that prints your name to the screen, print your name in Tahoma font, print a definition list with 5 items, Create links to 5 different pages, etc.

→ index.jsp

```
<! DOCTYPE html>
<html>
<head>
  <title> My Web page <title>
  <style>
    body {
        font-family ! Tahoma, Arial, Sans-serif;
    }
</style>
</head>

<body>
 <h1> Welcome to my webpage </h1>
 <p> My name is Dibya Bharat </p>

<h2> Definition list </h2>
<dl>
   <dt> Item 1 </dt>
    <dd> Definition for Item 1 </dd>
   <dt> Item 2 </dt>
    <dd> Definition for item 2 </dd>
   <dt> Item 3 </dt>
    <dd> Definition for item 3 </dd>
   <dt> Item 4 </dt>
```

```
    <dd> Definition for item 4 </dd>
     <dt> Item 5 </dt>
     <dd> Definition for item 5 </dd>
   <dl>

<h2> Links to all other pages </h2>
<ul>
   <li><a href="page1.jsp"> Page 1 </a> </li>
   <li><a href="page2.jsp"> Page 2 </a> </li>
   <li><a href="page3.jsp"> Page 3 </a> </li>
   <li><a href="page4.jsp"> Page 4 </a> </li>
   <li> <a href="page5.jsp"> Page 5 </a></li>
 </ul>

</body>
</html>
```

2. Java program to demonstrate almost swing components.

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class SwingDemo {
   public static void main (String [] args) {

    JFrame frame= new JFrame ("Swing Demo");
    frame.setDefaultCloseOperation (JFrame.EXIT_ON_
   CLOSE);
    frame.setSize(400,300);
    frame.setLayout (new FlowLayout());

   JLabel label= new JLabel ("This is a JLabel");
    frame.add (label);

   JTextField ·textField = new JTextField (20);
    frame- add ( textField);

   Jbutton button = new JButton ("Click Me");
    frame add (button);

    JCheckBox checkBox = new JCheckBox ("CheckMe");
    frame. add (checkBox);

    JRadioButton radioButton1= new JRadioButton ("option1"
    JRadioButton radioButton2 = new JRadioButton ("option2"
  ButtonGroup radiogroup = new Buttongroup();
  radiogroup.add(radioButton1);
  radiogroup.add(radioButton2);
  frame.add(radioButton1);
  frame.add(radioButton2);

String[] options = {"Option 1", "Option 2", "Option 3"};
JComboBox <string> comboBox = new JCombo Box
<> (options);
frame.add(comboBox);

String [] listData = {"item1", "Item 2", "item3", "Item4"
JList <String> list = new JList <> (listData);
frame.add(list);

J TextArea textarea = new JTextArea(5, 20);
frame.add(textarea);

button.addActionListener(new ActionListener() {
  @override
  public void actionPerformed(ActionEvent e) {
   String inputText = textField.getText();
   JOptionPane.showMessageDialog(frame, "You
clicked the button! \n Input Text! " + input Text);
  }
});

  frame.setVisible(true);
  }
}
```

3. Configure Apache Tomcat and write a hello world jsp page

Step 1: download latest Apache tomcat server

Step 2: create new project in Netbeans and click 'add' in 'server and settings'.

Step 3: Select 'Apache Tomcat' & click Next.

Step 4: Select the location where you installed the server. Set username & password & click save settings.

Hello.jsp

```
<html>
<head>
    <title> Hello </title>
</head>
<body>
    <h1> Hello World </h1>
</body>
</html>
```

web.xml

```
<web-app>
    <Hello-file-list>
        <Hello-file> Hello.jsp </Hello-file>
    </Hello-file-list>
</web-app>
```

4. Write a java program that connects to a database using JDBC and does add, delete and retrieve.

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.Prepared Statement;
import java.sql.resultSet;
import java.sql.SQL.Exception;

public class DatabaseOperation {
   private static final String JDBC_URL= "jdbc:mysql:
//localhost:3306/my_db";
   private static final String JDBC_USER= "root";
   private static final String JDBC_PASSWORD= "root"

   public static void main (String [] args) {
     Connection con = null;
    try {
      con = DriverManager.getConnection (JDBC_URL,
JDBC_USER, JDBC_PASSWORD);

   addStudent ( con, "John Doe", 25);

   retrieveStudents (con);

   deleteStudent (connection, 1);
   }
   catch (SQLException e) {
     e.printStackTrace ();
   } finally {
```

```
if (connection ! = null) {
  try {
      conn. close();
  }
  catch (SQLException e) {
      e.printStackTrace();
    }
  }
 }
}

private static void addStudent (Connection con,
 String name, int age) throws SQL Exception {

 String insertQuery = " INSERT INTO Students (name,
age) VALUES (?,?) ";

try (Prepared Statement ps = con.ps (insertQuery))
{
   ps. setString (1, name);
   ps. setString (2, age);
   ps. executeUpdate ();
   System.out.println (" Student added sucessfuly"
 }
}

private static void retrieveStudents (Connection
 con) throws SQLException {

  String selectQuery = " SELECT id, name, age
  FROM students ";
```

```
try ( Prepared ~~Students~~ Statement ps = con.ps(select
 Query);
ResultSet rs = ps.executeQuery()) {

While (resultSet.next()) {
  int id = ~~resultt~~ rs.getINt("id");
  String name = rs. getString("name");
  int age = rs. getInt("age");
  System.out.println("ID:" + id +", Name:" +
  name + ", Age: "+ age);
  }
 }
}

private static void deleteStudent( Connection conn,
 int Student id ) throws SQLException {

 String deleteQuery = "DELETE FROM students
 WHERE id = ?";
 try ( PreparedStatement ps = conn.ps(deleteQuery))
   ps.setInt(1, StudentId);
   ps.executeUpdate();
   System.out.println(" Student with ID"+ studentId + " delite successfully.");
 }
}
}
```

Write a client-server program which displays the server machine's date and time on the client machine.

Server-side program (Java):

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

public class DateTimeServlet extends HttpServlet {
  public void doGet(HttpServletRequest request, HttpS.
ervletResponse response) throws ServletException,
IOException{
response.setContentType("text/html");

Date serverDateTime= new Date();

PrintWriter out = response.getWriter();
Out.println("<html/>");
out.println("<head><title> Server Date and
Time </title></head>");
out.println("<body>");
out.println("<h1> Server Date and Time </h1>");
out.println("<p> The server's date and Time is:
" + serverDateTime + "<p>");
out.println("</body>");
out.println("</html>");
}
}
```

Compile and deploy this servlet on Apache Tomcat.

·Client Side program (JSP)'.

Client.jsp.

```
<!DOCTYPE html>
<html>
<head>
  <meta charset = "UTF-8">
  <title> Client Page </title>
</head>
<body>
<h1> Client Page </h1>
<p> This page request the servers date and
time ! <p>!
<p> <a href = "Date time Servlet"> Get Server
Date and Time </a> <p>
</body>
</html>
```

1. Start Apache Tomcat.

2. Access client by type URL "http://localhost://8081/WebApplication/Client.jsp".

3. ~~th~~ Click the 'Get Server Date and Time" link on the client page. This will call the 'DateTimeServlet', which will retrieve the server's date and time and display it on the client's machine

Q Write a program to implement a Java Bean to set and get values.

```
import java.io.serializable;

class PersonBean implements Serializable {

    private String firstName;
    private String lastName;
    private int age;

    public PersonBean () {
    }

    public String getFirstName () {
        return firstName ;
    }

    public String getLastName () {
        return lastName;
    }

    public void setFirstName( String FirstName)
        this.firstName = FirstName;
    }

    public void setLastName( String .LastName)
        this. lastName = lastName;
    }
```

Q Write a program to retrieve hostname - using methods in Inet Address class.

```
import java.net.*;

public class HostAddress
{
    public static void main (String args[]) throws
    UnknownHostException
    {
      InetAddress ia = InetAddress.getLocalHost();
      System.out.println(ia + "\n");
      ia = InetAddress.getByName("www.donboscotech
      delhi.in ");
      System.out.println(ia + "\n");
      InetAddress sw[] = InetAddress.getAllByName
      ("www.donboscoitggsipu.org");
      for (int i=0; i< sw.length; i++)
        {
            System.out.println(sw[i]);
        }
    }
}
```

Q Write a program to create a login page using Java Beans. Also validate username and password from database

```
import java.sql.*;
public class login {
        String username = " ";
        String password = " ";
        boolean loggedin = False;
        public login() { }
        public boolean islogin ()
         {
             return loggedIn;
         }

        public String getusername() {
          return username; }

        public string getpassword () {

           return password ; }

        public void setusername (String u) {
                  username = u;
        }

        public void setpassword (String p){
              password = p;
        }
```

```
public boolean login ( String url) {
    try {

        Class.forName ("com.mysql.jdbc.Driver");
        connection con = DriverManager.getConnection(url,
        PrepareStatement prep = con.prepareStatement
        (" Select username from users. where
            username = ? and password = ?");
        prep.setString (1, username);
        prep.setString (2, password);

        Resultset rs = prep.ExecuteQuery ();
        if ( rs.next () )
            username = rs.getString ()
            loggedin = true;
        }
        else {
            logged in = false;
            prep.close ();
            Con.close ();
        }
        catch (Exception e) {
            loggedIn = false; }
            return. loggedIn;
        }

    public void logout () {
            loggedin = false;
    }
```

login.html

```
<html>
 <head>
  <title> login page </title>
 </head>
 <body>
  <form name = "login" action = "login.jsp"
   method = "post" > <br>
  username <input type = "text" name = "username"
 password <input type = "password" name = "
 password"/> <br>
   <input type = "Submit" value = "login"/>
  <input type = "reset" value = "clear" /> <b
   </form>
  </body>
  </html>
```

login.jsp :

```
<%@ page contenttype = "text/html" page.Encod-
 ing = "UTF-8"%>
<jsp : useBean id = "login" class = "login"
  scope = "session" />
 <jsp : set Property name = "login" Property =
" "/>

<! DOCTYPE html >
<html>
     <head>
```

```
<meta httpequiv = "Content-Type" content
= "text/html; charset= UTF-8" >
 <title> Login </title>
 </head>

<body>
  <%. session. setMaxInactiveInterval (1800)

  Login.Login ("jdbc:mysql:// localhost / Datab
  ase", "root", "root");

  If (login.isLogin ())
     out.println (" Hello "+ Login.getUserman
    ) + " <br>");
  else {

     out.println(" Invalid Login <br>");

  out.println("a href='checkLogin.jsp'>
  check </a>");
  % >

<body >
<html>

Logout.jsp

<%@ page ContentType= "text/html" page
 Encoding= "UTF-8" %>
<jsp= useBean id= " Login" class=" Login"
 scope = "session" />
```

```
<! DOCTYPE html>
<html>
    <head>
     <meta http-equiv = "Content-Type"
     content = " text / html"; charset = UTF-8">
    <title> Logout </title>
     </head>
     <body>
        <%
             Login. Logout () ;
        %>
    </body>
    </html>
```

CheckLogin.jsp :

```
<% @ page ContentType= " text / html"
pageEncoding = "UTF-8" %>
<jsp: useBean id= " Login" class = " Login"
Scope = "session"/>

<! DOCTYPE html>
 <html>
  <head>
   <meta http-equiv = " Content-Type"
    content= " text/ html ; Charset= "UTF-8">
    <title> Check Login</title>
  </head>

  <body>
```

```
<%
        if (! login.Loginstatus() ) {
                response.setRedirect (" login.html");
                return;
        }

  %>

  <H3> Hello <% Login.getusername()%>
  <%@ include file=" footer.jsp "%>
  </body>
</html>
```

Q Create a table in the database containing the columns to book details like: book name, author, description, price and URL of book's cover image. Using JSP and JDBC retrieve the details in the table and display them on the webpage.

Table creation:

```
use book;

create table sbd ( bname varchar (100), aname
 varchar (100), bdesc varchar (150), price
 int (150), bcurl varchar (100));
```

index.html:

```
<html> <head>
 <title> Book Store App </title>
</head>
<body>
<form method = "post" action= "display.jsp">
<table width = "400px", border = "1">
<tr> <td colspan = "2"> <h1> Book Details </h1>
</td> </tr>
<tr> <td> Book Name </td> <td> <input type =
"text" name = "bname" id = "bname"> </td> </tr>
<tr> <td> Author Name </td> <td> <input type
= "text" name = "aname" Id = "aname"> </td> </tr>
<tr> <td> Book Description </td> <td> <input type
= "text" name = "bdesc" id = "bdesc"> </td> </tr>
```

```
<tr><td> Book Price </td><td> <input type = "text"
name = "price" id = "price" ></td> <tr>
<tr><td> Book URL </td><td> <input type = "text"
name = "burl" Id = "burl" > </td></tr>
<tr><td colspan = "2" >< input type = " submit "
value = " submit " ></td></tr>
</tr></form>
<p><a href = " display " > view Book Record </a></p>
</body> </html>
```

Display.jsp:

```
<%@ page language = "java" contentType = " text/
html " pageEncoding = "UTF-8" %>
<% @ page import = "java.sql.*" %>
<% @ page import = "java.io.*" %>
<% String bname = request.SetParameter ("bname");
Connection con; PreparedStatement pst, Statement
st; Result Set rs;
try { Class.forName (" com.mysql.jdbc.Driver");
} catch ((ClassNotFoundException e) { e.printStack
Trace );} %>
<html><body><h1>Retrieve Book details </h1>
<table border="1"><tr><td> Book Name
</td>
<td> Author Name </td><td> Book Description
</td>
<td> Price </td><td> Book URL </td>
<td> Edit </td><td> Delete </td></tr>
<% try { con. DriverManagerget Connection ("
"jdbc:mysql:// localhost / book; "root",
"root");
st = con.createStatement();
string sql = "Select * from sbd";
rs = st.executeQuery(sql);
while(rs.next()) { %>
<tr><td> <"%= rs.setString("bname")%>
<td>
<td><%= rs.getString("aname")%></td>
<td><%= rs.getString("bdesc")%></td>
<td><%= rs.getString("price")%></td>
<td><%= rs.getString("burl")%></td>
<td><a href="edit.jsp"? Id = <%rs.getString
("bname")%> Edit </a></td>
<td><a href="delete.jsp"? id = <%.rs.get
String ("bname")%> Delete</a></td>
</tr>
<% } con.close();}
catch(Exception e) {
e.printStackTrace(); }%>
</table></body></html>.
```

```
    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        this. age = age;
    }
}

public class BeanExample {
  public static void main (String [] args) {

    PersonBean person = new PersonBean ();

    person.setFirstName ("Rahul");
    person.SetLastName (" Kumar");
    person. setAge (25);

    String firstName = person.getFirstName();
    String lastName = person.getLastName();
    int age = person.getAge ();

    System.out.println ("First Name: "+ firstName)
    System.out.println ("Last Name : "+ LastName);
    System.out.println ("Age : "+ age);
```