Practical 1
```java
package pract1;
import java.awt.*;
public class prac1 extends Frame
{
    prac1()
     {
          setLayout(new FlowLayout());
          MenuBar mb=new MenuBar();
          Menu menu=new Menu("Book Names");
          Menu menu1=new Menu("Book Issue");
          Menu menu2=new Menu("Book Return");
          Menu menu3=new Menu("Payment");
          Menu menu4=new Menu("Exit");

          MenuItem i1=new MenuItem("A");
          MenuItem i2=new MenuItem("B");
          MenuItem i3=new MenuItem("C");
          MenuItem i4=new MenuItem("D");

          MenuItem i5=new MenuItem("With the name of");

          MenuItem i6=new MenuItem("Return date");

          MenuItem i7=new MenuItem("Online");
          MenuItem i8=new MenuItem("Cash");

          MenuItem i9=new MenuItem("Exit");

          menu.add(i1);
          menu.add(i2);
          menu.add(i3);
          menu.add(i4);
          menu1.add(i5);
          menu2.add(i6);
          menu3.add(i7);
          menu3.add(i8);
          menu4.add(i9);
          mb.add(menu);
          mb.add(menu);
          mb.add(menu1);
          mb.add(menu2);
          mb.add(menu3);
          mb.add(menu4);

          setMenuBar(mb);

        setSize(400,400);
        setVisible(true);
}
```

```java
public static void main(String args[])
{
    prac1 p1=new prac1();
    }
}
```

Practical 2
(Data base creation)

Practical 3
```java
package pract3;

import java.awt.BorderLayout;
import java.awt.Container;
import javax.swing.*;
import javax.swing.event.ListSelectionEvent;
import javax.swing.event.ListSelectionListener;

public class Pract3 extends JFrame implements ListSelectionListener
{
JLabel jl1;

JList list;

JTextField jtf;

String name[]={"A","B","C","D","E"};

public Pract3()
{
Container cp=getContentPane();

cp.setLayout(new BorderLayout());

jl1=new JLabel("Select a BOOK");

cp.add(jl1,BorderLayout.NORTH);

list=new JList(name);

list.addListSelectionListener(this);

cp.add(list,BorderLayout.CENTER);

jtf=new JTextField(15);

cp.add(jtf,BorderLayout.SOUTH);
```

```java
}
@Override
public void valueChanged(ListSelectionEvent le)

{
int i=list.getSelectedIndex();

if(i==0)
{
jtf.setText("Book A is Selected....");
}

else if(i==1)
{
jtf.setText("Book B is Selected....");
}

else if(i==2)
{
jtf.setText("Book C is Selected....");
}

else if(i==3)
{
jtf.setText("Book D is Selected....");
}

else if(i==4)
{
jtf.setText("Book E is Selected....");
}

else{
jtf.setText("Select Book......");
    }

}
public static void main(String[] args)
{
    Pract3 p1=new Pract3();
    p1.setSize(500,500);
    p1.setVisible(true);
    p1.setTitle("Library Mng. System");
    p1.setDefaultCloseOperation(EXIT_ON_CLOSE);
}
}
```

Practical 4

calc.java
```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class Calc extends HttpServlet {

    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String s=request.getParameter("txtN1");
double n1=Double.parseDouble(s);

double n2 = Double.parseDouble(request.getParameter("txtN2"));

 double result =0;

 String opr=request.getParameter("opr");


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

        try (PrintWriter out = response.getWriter()) {

                        if(opr.equals("+"))
result=n1+n2;
            if(opr.equals("-"))
result=n1-n2;
             if(opr.equals("*"))
result=n1*n2;
             if(opr.equals("/"))
result=n1/n2;
            out.println("<h1> Result = "+result);

            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet Calc</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}
```

```
Index.html
<!DOCTYPE html>

<html>

    <head>
        <title>TODO supply a title</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>

    <body>

 <form action="Calc" method="post">
 Enter First Number <input type="text" name="txtN1" ><br>
 Enter Second Number <input type="text" name="txtN2" ><br>
 Select an Operation
<input type="radio" name="opr" value="+">ADDTION<br>
<input type="radio" name="opr" value="-">SUBSTRACTION<br>
<input type="radio" name="opr" value="*">MULTIPLY<br>
<input type="radio" name="opr" value="/">DIVIDE <br>
<input type="reset">
<input type="submit" value="Calculate" >
</form>

    </body>

</html>
```

Practical 5

Index.html file

```
<!DOCTYPE html>

<html>

    <head>
        <title>TODO supply a title</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>

    <body>

 <form action="Calc.jsp" method="post">
```

```
 Enter First Number <input type="text" name="txtN1" ><br>
 Enter Second Number <input type="text" name="txtN2" ><br>
 Select an Operation
<input type="radio" name="opr" value="+">ADDTION<br>
<input type="radio" name="opr" value="-">SUBSTRACTION<br>
<input type="radio" name="opr" value="*">MULTIPLY<br>
<input type="radio" name="opr" value="/">DIVIDE <br>
<input type="reset">
<input type="submit" value="Calculate" >
</form>
    </body>
</html>
```

Calc.jsp file

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <%
String s=request.getParameter("txtN1");
double n1=Double.parseDouble(s);
double n2 = Double.parseDouble(request.getParameter("txtN2"));
  double result =0;
  String opr=request.getParameter("opr");

            if(opr.equals("+"))
                result=n1+n2;
            if(opr.equals("-"))
                result=n1-n2;
             if(opr.equals("*"))
                 result=n1*n2;
             if(opr.equals("/"))
                 result=n1/n2;
            out.println( "Result = "+result);
 %>
    </body>
</html>
```

Practical 6

Index.html file

```
<!DOCTYPE html>
```

```html
<html>
<head>
    <title>User Registration</title>
    <meta charset="UTF-8">
</head>
<body>
    <form action="Register" method="post">
        <h1>Welcome to Registration page</h1>
        Enter User Name <input type="text" name="txtUid"><br>
        Enter Password <input type="password" name="txtPass"><br>
        Enter Email <input type="text" name="txtEmail" ><br>
        Enter Country <input type="text" name="txtCon" ><br>
        <input type="reset" ><input type="submit" value="REGISTER" >
    </form>
</body>
</html>
```

Register.java file

```java
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class Register extends HttpServlet {
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String id = request.getParameter("txtUid");
        String ps = request.getParameter("txtPass");
        String em = request.getParameter("txtEmail");
        String co = request.getParameter("txtCon");
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            Class.forName("org.apache.derby.jdbc.ClientDriver");
            Connection con =
DriverManager.getConnection("jdbc:derby://localhost:1527/root", "root","root");
            PreparedStatement pst = con.prepareStatement("INSERT INTO user_table
VALUES (?, ?, ?, ?)");
            pst.setString(1, id);
            pst.setString(2, ps);
            pst.setString(3, em);
            pst.setString(4, co);
            int row = pst.executeUpdate();
```

```
        out.println("<h1>" + row + " Inserted Successfully</h1>");
        con.close();
    } catch (ClassNotFoundException | SQLException e) {
    }
  }
}
```

Practical 7

Index.html file

```html
<!DOCTYPE html>
<html>
<head>
    <title>User Registration</title>
    <meta charset="UTF-8">
</head>
<body>
    <form action="Register" method="post">
        <h1>Welcome to Registration page</h1>
        Enter User Name <input type="text" name="txtUid"><br>
        Enter Password <input type="password" name="txtPass"><br>
        Enter Email <input type="text" name="txtEmail" ><br>
        Enter Country <input type="text" name="txtCon" ><br>
        <input type="reset" ><input type="submit" value="REGISTER" >
    </form>
</body>
</html>
```

Register.jsp file

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <%@page contentType="text/html" import="java.sql.*"%>
<html>
    <body>
<h1>Registration JSP Page</h1>
<%
String uname=request.getParameter("txtName");
String pass1 = request.getParameter("txtPass1");
```

```
String pass2 = request.getParameter("txtPass2");
String email = request.getParameter("txtEmail");
String ctry = request.getParameter("txtCon");
if(pass1.equals(pass2)){
try{
Class.forName("com.mysql.jdbc.Driver");
Connection con = DriverManager.getConnection("jdbc:derby://localhost/root [root on
ROOT]","root","root");
PreparedStatement stmt = con.prepareStatement("insert into root values (?,?,?,?)");

stmt.setString(1, uname); stmt.setString(2, pass1);
stmt.setString(3, email); stmt.setString(4, ctry);
int row = stmt.executeUpdate();
if(row==1) { out.println("Registration Successful"); }
else {
out.println("Registration FFFFFAAAIIILLLL !!!!");
%><jsp:include page="Register.html" ></jsp:include>
<%
}
}catch(Exception e){out.println(e);}
}
else
{
out.println("<h1>Password Mismatch</h1>");
%>
<jsp:include page="Register.html" ></jsp:include>
<% }
%>

    </body>
</html>
```

Practical 8

Index.html
```html
<!DOCTYPE html>

<html>
    <head>
        <title>CURRENCY CONVERTER</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <form action="CCServlet" method="post">
            Enter amount:<input type="text" name="amt"><br>
```

```
            Select Conversation type <br>
            <input type="radio" name="type" value="r2d"> Rupees to dollar<br>
            <input type="radio" name="type" value="d2r"> Dollar to Rupees<br>
            <input type="reset" ><input type="submit" name="type" value="Convert">
        </form>
    </body>
</html>




CCServlet.java file

import CCBean.CCBean;
import java.io.IOException;
import java.io.PrintWriter;
import javax.ejb.EJB;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;


public class CCServlet extends HttpServlet {

  @EJB CCBean obj;
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {

        double amt=Double.parseDouble(request.getParameter("amt"));

        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {

            if(request.getParameter("type").equals("r2d"))
            {
                out.println("<h1>"+amt+" Rupees = "+obj.r2Dollar(amt)+" Dollar
</h1>");
            }

            if(request.getParameter("type").equals("d2r"))
            {
                out.println("<h1>"+amt+" Dollar = "+obj.d2Rupees(amt)+" Rupees
</h1>");
            }

            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
```

```java
            out.println("<title>Servlet CCServlet</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}
```

CCBean.java

```java
package CCBean;

import javax.ejb.Stateless;

@Stateless
public class CCBean {
public CCBean(){}

public double d2Rupees(double d){return d*65.65;}
public double r2Dollar(double r){return r/65.65;}

}
```

Calc.jsp file
(PHOTO UPLOADED IN FOLDER)