//In case of any doubt or error or any improvement required mail to kumargauravkumar11@gmail.com or manollas1997@gmail.com

1.a> Write a java program to find the details of the students eligible to enroll for the examination(Students & Department give the eligibility criteria for the enrollment class) using interfaces.

//attendence variable store no of class attended out of 54
//attperc stores percentage

```
interface student
{

	String getValue();
}
interface department
{

	float getAttendence();
}

interface exam extends student,department
{
	float calattendance();
	boolean eligible();
}
class cal implements exam
{
	int sno;
	String sname;
	String clas;
	float attendance;
	float attperc;
	public cal(int s,String sn,String cl,float a)
	{
		sno=s;
		sname=sn;
		clas=cl;
		attendance=a;
	}
	public String getValue()
	{
		return ("student name "+sname+" class "+clas+" sno "+sno);
```

```
	}

	public float getAttendence()
	{
		return attperc;
	}
	public float calattendance()
	{
		attperc=(attendance/54)*100;
		return attperc;
	}
	public boolean eligible()
	{
		if(attperc>=85)
		{
			return true;
		}
		else
		{
			return false;
		}
	}
}
public class A1 {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		exam o1,o2,o3;
		o1=new cal(1,"gaurav","5b",47);
		o1.calattendance();
		if(o1.eligible())
		{

			System.out.println(o1.getValue());
			System.out.println("attendance perc "+o1.getAttendence());
			System.out.println("eligible");
		}

		else
		{

			System.out.println(o1.getValue());
			System.out.println("attendance perc "+o1.getAttendence());
```

```
                System.out.println("not eligible");
            }

            o2=new cal(2,"manish","5b",38);
            o2.calattendance();
            if(o2.eligible())
            {

                System.out.println(o2.getValue());
                System.out.println("attendance perc "+o2.getAttendence());
                System.out.println("eligible");
            }

            else
            {

                System.out.println(o2.getValue());
                System.out.println("attendance perc "+o2.getAttendence());
                System.out.println("not eligible");
            }
            o3=new cal(3,"ullas","5b",27);
            o3.calattendance();
            if(o3.eligible())
            {

                System.out.println(o3.getValue());
                System.out.println("attendance perc "+o3.getAttendence());
                System.out.println("eligible");
            }

            else
            {

                System.out.println(o3.getValue());
                System.out.println(o3.getAttendence());
                System.out.println("not eligible");
            }
        }

}
```

1.b> Write a java Program to create the table named DEPARTMENT with the attributes Dept_id,Name,Year_Established, Head_Name,No_of_Employee and

(i) Find the number employees in a CSE department.

(ii) List name, Dept_id of all the departments which are established in the year 2010.

```
//create table department in database mydb and enter values

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;

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

        String driver="com.mysql.jdbc.Driver";
        String url="jdbc:mysql://localhost:3306/";
        String dbname="mydb";
        String username="root";
        String password="";
        try
        {
                Class.forName(driver);
                Connection con=DriverManager.getConnection(url+dbname, username, password);
                String query="select No_of_Employee from department where Name='CSE'";
                Statement st=con.createStatement();
                ResultSet rs=st.executeQuery(query);
                rs.next();
                System.out.println("No of employees in cse department "+rs.getInt("No_of_Employee"));
                String query2="select Name,Dept_id from department where Year_Established='2010'";
                Statement st1=con.createStatement();
                ResultSet rs1=st.executeQuery(query2);
                while(rs1.next())
                {
                        String name=rs1.getString("Name");
                        int did=rs1.getInt("Dept_id");
                        System.out.println("Name "+name+" Dept_id "+did );
                }
                st.close();
                st1.close();
                con.close();
        }
```

```
        catch(Exception e)
        {
                System.out.println("error"+e);
        }
}
}
```

2.a> Write a java program to maintain the student details like USN, Dept names, 3 subject grades and SGPA in student package and keep the staff details such as Staffid, StaffName, designation and subjects handled in a staff package. In main class use these two packages details for Staff and Student classes and display the student and staff information as requested by the user.

//create package student
//create class st_detail in package student

```
package student;
public class st_detail {
	String usn,dept_name,grade1,grade2,grade3;
	double sgpa;
	public st_detail(String u,String d,String g1,String g2,String g3,double sg)
	{
		usn=u;
		dept_name=d;
		grade1=g1;
		grade2=g2;
		grade3=g3;
		sgpa=sg;
	}
	public void display()
	{
		System.out.println("usn "+usn+" department name "+dept_name+" grade 1
"+grade1+" grade 2 "+grade2+" grade 3 "+grade3+" sgpa "+sgpa);
	}
}
```

//create package staff
//create class staff_detail in package staff

```
package staff;
public class staff_detail {
String id,name,designation,sub_handled;
public staff_detail(String i,String n,String d,String s)
{
        id=i;
        name=n;
        designation=d;
        sub_handled=s;
}
public void display()
{
        System.out.println("id "+id+" name "+name+" designation "+designation+" subject
handled "+sub_handled);
}
}
```

//now create class detail outside both packages

```
import student.*;
import staff.*;

public class detail {
public static void main(String args[])
{
        st_detail o1=new st_detail("1ms15cs145","cse","s","s","s",9.60);
        o1.display();
        staff_detail o2=new staff_detail("1","ganesh","professor","dbms");
        o2.display();
}
}
```

2.b>Write a Java servlet program that loads area and phone no. of police station of that area from a database. It takes a area or phone number as input and prints the corresponding other
fields. (Note: create police_station table with appropriate fields).

//Create table police with atrributes phone,area

Input.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="Police_station" method="post">
<fieldset>
<input type="radio" name="n" value=1 checked> Area<br>
<input type="radio" name="n" value=2> Phone no<br>
Enter area/phone no:<input type="text" name="ap"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
</html>
```

servlet(police_station.java)

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
```

```
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * Servlet implementation class Police_station
 */
@WebServlet("/Police_station")
public class Police_station extends HttpServlet {
   protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
            response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        String url = "jdbc:mysql://localhost:3306/";
        String dbName = "mydb";
        String driver = "com.mysql.jdbc.Driver";
        String user = "root";
        String password = "";
        PreparedStatement pstmt;
        Statement st;
        try {

            Class.forName(driver);
            Connection conn = DriverManager.getConnection(url+dbName, user, password);
            String query="select area,phone from police";
            st=conn.createStatement();
            ResultSet rs=st.executeQuery(query);
            int n=Integer.parseInt(request.getParameter("n"));
            switch(n)
            {
            case 1: int c=1;
                        while(rs.next())
                {       String s=request.getParameter("ap");
                                if(rs.getString("area").equals(s))
                                {
                                        out.println("area "+s+" phone
"+rs.getString("phone"));
                                        c=0;
                                        break;
                                }

                }
                        if(c==1)
```

```
                        {
                                out.println("area does not exists");
                                        break;
                        }
                        break;
            case 2:     int c1=1;
                    while(rs.next())
                {
                         String s=request.getParameter("ap");
                                 if(rs.getString("phone").equals(s))
                                    {
                                            out.println("phone "+s+" area "+rs.getString("area"));
                                            c1=0;
                                            break;
                                    }

                }
                        if(c1==1)
                          {
                                 out.println("phone no does not exists");
                                        break;
                          }
                        break;
              }

            }

            catch(Exception e)
            {
               out.println(e);
            }


             }


              protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

                        doGet(request, response);
             }

}
```

3.a>Write a java program to throw a exception for an employee details. If an employee name is a number, a name exception must be thrown. If an employee age is greater than 50, an age exception must be thrown Or else an object must be created for the entered employee details

```
import java.util.Scanner;
class name extends Exception
{
	public String toString()
	{
		return ("name is a number name exception");
	}
}

class age extends Exception
{
	public String toString()
	{
		return ("age is greater than 50 age exception");
	}
}
class ex
{
	int age;
	String name;
	ex(int a,String n)
	{
		age=a;
		name=n;
	}
}
public class employee_details {
	public static void main(String args[])
	{
		Scanner input=new Scanner(System.in);
		System.out.println("Enter your age");
		int age=input.nextInt();
		System.out.println("Enter your name");
		String name=input.next();
```

```
		int c=1,k=1;
		try
		{
		try
		{
			int s=Integer.parseInt(name);

		}
		catch(Exception e)
		{
			c=0;
		}
		if(c==1)
		{
			throw new name();
		}
		}
catch(name e)
{
		System.out.println(e);
		k=0;
}

try
{
		if(age>50)
		{
			throw new age();
		}
}
catch(age e)
{
		System.out.println(e);
		k=0;
}
catch(Exception e)
{
		System.out.println(e);
		k=0;
}
if(k==1)
{
		ex ob=new ex(age,name);
```

```
                    System.out.println("object created successfully name "+name+" age
"+age);

                }
        }

}
```

3.b>Write a java servlet program with a function called Initials() that takes input representing a full name and returns the initials of the name in all capital letters. For example If Input: Robert B. Qwerty then Output : RBQ

Input_name.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="capsInitials" method="post">
<fieldset>
Enter name:<input type="text" name="name"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
```

```
</html>
```

servlet(capsInitials.java)

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * Servlet implementation class capsInitials
 */
@WebServlet("/capsInitials")
public class capsInitials extends HttpServlet {

public String initials(String name)
{
        String ini=Character.toString(name.charAt(0));
          for (int i=0; i<name.length(); i++){

            if (name.charAt(i)==' ' && i+1 < name.length() && name.charAt(i+1)!=' '){
              ini+=name.charAt(i+1);
            }
          }

          return ini.toUpperCase();
}
protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
```

```
    PrintWriter out = response.getWriter();
    String name=request.getParameter("name");
    String ini=initials(name);
    out.println("name "+name+"initials "+ini);

        }


        protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
                // TODO Auto-generated method stub
                doGet(request, response);
        }

}
```

4.a>Write Java program to create an applet with text box. We must type a string in text box first. Then if we press "P" key check the given string is PALINDROME or not and the result must be displayed on the status bar.

```
import java.applet.Applet;
import java.awt.GridLayout;
import java.awt.Label;
import java.awt.TextField;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;

public class textbox_applet extends Applet implements KeyListener {

        TextField t = new TextField();
        Label answer = new Label();
        public void init()
        {
                setLayout(new GridLayout(3,1));
                 add(new Label("Enter a text"));
                 add(t);
                 add(answer);
                 t.addKeyListener(this);
                  setVisible(true);

        }

         boolean isPalindrome(String s) {
                   int i, j;
                   for (i=0, j=s.length()-1; i < j; i++, j--)
                     if (s.charAt(i) != s.charAt(j))
                       return false;
                   return true;
                 }

        public void keyPressed(KeyEvent e) {
                   if (e.getKeyChar() =='p')
                   {
                     if (isPalindrome(t.getText()))
                           {
                                    answer.setText("The text is a palindrome");
                                  showStatus("The text is a palindrome");
                           }
                       else
                           {
                                    answer.setText("The text is not a palindrome");
                                  showStatus("The text is not a palindrome");
                           }
                }
```

```
        }

        public void keyReleased(KeyEvent e) {}
        public void keyTyped(KeyEvent e) {}

}
```

4.b>Develop a JSP application that has the following pages : register.html contains 2 text boxes username, password and a button "REGISTER". Once Register button clicked the page should be redirected to welcome.jsp. In welcome.jsp validate username and password and display welcome message for a valid user. (Use Sessions)

//run register.html first

//sessiontarcae.jsp to show session trace u can also run it show trace

register.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="welcome.jsp" method="post">
<fieldset>
enter username<input type="text" name="user"><br>
Enter password:<input type="password" name="password"><br>
</fieldset>
   <button type="submit">register</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
</html>
```

welcome.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
```

```
<body>
<%
String name =request.getParameter("name");
String password=request.getParameter("password");
if(name.equals("admin") && password.equals("admin123"))
{
        out.println("welcome "+name);
        HttpSession s=request.getSession();
        session.setAttribute("name",name);
        request.getRequestDispatcher("sessiontrace.jsp").forward(request,response);

}
else
{
out.println("not a valid username or password ");
        }
%>
</body>
</html>
```

sessiontrace.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
HttpSession s=request.getSession(false);
if(session!=null)
{
        String name=(String)session.getAttribute("name");
        out.println("hello "+name+" welcome");
}
else
{
        out.println("please login first");
        request.getRequestDispatcher("register.html").include(request,response);
```

```
}

%>
</body>
</html>
```

5.a> Write a multithreaded program to create 2 threads. One thread should infinitely display the message as "welcome" while other thread should infinitely display the message "Goodbye". Synchronize the execution of these threads. So that the messages are displayed alternately.

//use producer consumer problem to understand

```
class print_msg
{
	boolean value=false;
	synchronized public void print_welcome()
	{
		while(!value)
		{
			try
			{
				wait();
			}
			catch(Exception e)
			{
				System.out.println(e);
			}
		}
		System.out.println("welcome");
		value=false;
		notify();
	}
	synchronized public void print_goodbye()
	{
		while(value)
		{
			try
			{
				wait();
			}
			catch(Exception e)
			{
```

```
                                        System.out.println(e);
                                }
                        }
        System.out.println("good bye");
        value=true;
                         notify();
          }
}


class mythread1 extends Thread
{
          print_msg p;
          mythread1(print_msg m)
          {
                    p=m;
             this.start();
          }
          public void run()
          {
                    while(true)
                    {
                              p.print_welcome();
                    }
          }
}




class mythread2 extends Thread
{
          print_msg p;
          mythread2(print_msg m)
          {
                    p=m;
                    this.start();
          }
          public void run()
          {
                    while(true)
                    {
                              p.print_goodbye();
```

```
                }
        }
}

public class welcome_goodbye {
        public static void main(String args[])
        {
                print_msg p=new print_msg();
                mythread1 m1=new mythread1(p);
                mythread2 m2=new mythread2(p);
                System.out.println("ctrl+c to stop");
        }

}
```

5.b> Write a JSP that takes the user's name and age from a form. Echo back the name and age along with a message stating the price of movie tickets.

- **The price is determined by the age passed to the JSP.**
- **If the age is greater than 62, the movie ticket price is Rs. 7.00.**
- **If the user is less than 10 years old, the price is Rs. 5.00.**
- **For everyone else, the price is Rs. 9.50.**

html file:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="fiveb.jsp" method="post">
Name:<input type="text" name="name">
age:<input type="text" name="age">
<input type="submit" name="enter">
</form>

</body>
</html>
```

jsp file:

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String n=request.getParameter("name");
int a=Integer.parseInt(request.getParameter("age"));
out.println(n);
out.println(a);
if(a>62)
        out.println("the movie ticket price is Rs. 7.00.");
else if(a<10)
        out.println("the movie ticket price is Rs. 5.00.");
else
        out.println("the movie ticket price is Rs. 9.50.");
%>

</body>
</html>
```

6.a> Create a main class to prompt the user to enter his/her age and his CGPA. The user application for a job will be rejected either if his age is greater than 25 years or his CGPA is less than 8. You should declare two nested try-throw-catch blocks; one to handle the AgeOutOfRangeException and the other to handle the LowCGpaException. If the user enters acceptable age and CGPA, display the message "Your application is accepted and is under study".

```
import java.util.Scanner;

class AgeOutOfRangeException extends Exception{
                AgeOutOfRangeException() {          }
}
class LowCGpaException extends Exception{

            LowCGpaException()    {}
}

public class sixa {

        public static void main(String[] args) {
                // TODO Auto-generated method stub
                int age;
                Double cgpa;

                Scanner sc=new Scanner(System.in);
                System.out.println("Enter your age");
                age=sc.nextInt();
                System.out.println("Enter your cgpa");
                cgpa=sc.nextDouble();

                try {
                        if(age>25) {
                                throw new AgeOutOfRangeException();
                        }
                        try {
                                if(cgpa<8)
                                {
                                        throw new LowCGpaException();
                                }
                                System.out.println("Your application is accepted and is under study.");
```

```
                        }
                        catch(LowCGpaException e) {
                                System.out.println("less cgpa");
                        }

                }
                catch(AgeOutOfRangeException e) {
                        System.out.println("age out of bound");
                }

        }

}
```

6.b>Write a servlet program to insert Employee details like empid, employee_name, address, date_of_birth in Employee table using JDBC and display in table format

enter_detail.html

```
<!DOCTYPE html>
<html>
<head>
<title>Insert title here</title>
</head>
<body>
<form action="enter_detail" method="post">
<fieldset>
Enter name:<input type="text" name="name"><br>
Enter id:<input type="text" name="id"><br>
Enter addr:<input type="text" name="addr"><br>
Enter date of birth(dd:mm:yyyy)format :<input type="text" name="dob"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>

</body>
</html>
```

Enter_detail.servlet

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import javax.servlet.annotation.WebServlet;
import java.sql.Statement;
import java.sql.PreparedStatement;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
//import com.java.sql.Connection;
import com.mysql.jdbc.*;
import javax.servlet.RequestDispatcher;



@WebServlet("/enter_detail")
public class enter_detail extends HttpServlet {
	protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
			response.setContentType("text/html;charset=UTF-8");
			PrintWriter out = response.getWriter();
			String url = "jdbc:mysql://localhost:3306/";
			String dbName = "mydb";
			String driver = "com.mysql.jdbc.Driver";
			String user = "root";
			String password = "";
			PreparedStatement pstmt;
			Statement st;
		try {
```

```
  Class.forName(driver);
  Connection conn = DriverManager.getConnection(url+dbName, user, password);
  int id=Integer.parseInt(request.getParameter("id"));
  String name=request.getParameter("name");
  String addr=request.getParameter("addr");
  String dob=request.getParameter("dob");

  String query="insert into employee values(?,?,?,?)";
  pstmt=conn.prepareStatement(query);
  pstmt.setInt(1,id);
  pstmt.setString(2, name);
  pstmt.setString(3, addr);
  pstmt.setString(4, dob);
  pstmt.execute();
  out.println("success");

 String query1="select * from employee";
 st=conn.createStatement();
 ResultSet rs=st.executeQuery(query1);
 out.println("<table> <tr> <th>name</th> <th>id</th><th> address</th> <th>dob</th></tr>");
 while(rs.next())
 {
            String n=rs.getString("employee_name");
            int i=rs.getInt("empid");
            String a=rs.getString("address");
            String d=rs.getString("date_of_birth");
            out.println("<tr> <th>"+n+"</th> <th>"+i+"</th><th>"+a+"</th> <th>"+d+"</th></tr>");

 }
  out.println("</table>");

 }
      catch(Exception e)
      {
                out.println("ERROR"+e);


      }

}

            protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

                        doGet(request, response);
            }
}
```

7.a> Write a Java program to create a super class Record has been defined to store the names and ranks of 50 students. Define a sub class Rank to find the highest rank along with the name. The details of both classes are given below

Class Name :Record

Data Members : name[ ], rnk[ ] (store names and respective ranks in an array

Member functions: Record() : constructor to initialize data members

void readvalues() : to store names and ranks

void display() : displays the names and the corresponding ranks

Class name : Rank

Data Members : index(integer to store the index of the topmost rank)

Member functions :

Rank() : constructor to invoke the base class constructor and to initialize index to 0.

void highest() : finds the index location of the topmost rank and stores it in index without sorting the array

void display() : displays the name and ranks along with the name having the topmost rank.

```
import java.util.Scanner;
class record {
	public String[] name=new String[50];
	public int[] rnk=new int[50];

	record() {
		//initialize name and rnk to 0
	}

	void readvalues() {
		for(int i=0;i<50;i++) {
			Scanner sc=new Scanner(System.in);
			System.out.println("Enter your name");
			name[i]=sc.next();
			System.out.println("Enter your rank");
			rnk[i]=sc.nextInt();
		}
	}

void display() {
	for(int i=0;i<50;i++)
	{
```

```
                System.out.println(name[i]);
                System.out.println(rnk[i]);
        }
}

}

class rank extends record{
        int index;
        rank(){
                index=0;
        }

void highest() {
        int max=0;
        for(int i = 0; i < 50; i++)
   {
      if(max < rnk[i])
      {
          index=i;
         max = rnk[i];
      }
   }
}

void display() {
        super.display();
        System.out.println(name[index]);
        System.out.println(rnk[index]);
}
}



public class sevena {

        public static void main(String[] args) {
                // TODO Auto-generated method stub
    rank r=new rank();
    r.readvalues();
    r.highest();
    r.display();
        }

}
```

7.b> Write a JSP program to create a form with bookno, title, author, publication price and submit button. Using JSP-Database connectivity, get the data from the form and insert the records into the database, retrieve the book details for the particular title matches and display the details.

Form.jsp

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action=book.jsp" method="post">
<fieldset>
Enter bookno:<input type="text" name="no"><br>
Enter title:<input type="text" name="title"><br>
Enter author:<input type="text" name="author"><br>
Enter price :<input type="text" name="price"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
</html>
```

Book.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%@ page import="java.sql.*" %>
<%@ page import = "javax.servlet.RequestDispatcher" %>
<%
		String url = "jdbc:mysql://localhost:3306/";
		String dbName = "mydb";
		String driver = "com.mysql.jdbc.Driver";
		String user = "root";
		String password = "";
		PreparedStatement pstmt;
		Statement st;
			try {

		  Class.forName(driver);
		  Connection conn = DriverManager.getConnection(url+dbName, user, password);
		  int no=Integer.parseInt(request.getParameter("no"));
		  int price=Integer.parseInt(request.getParameter("price"));
		  String author=request.getParameter("author");
		  String title=request.getParameter("title");

		  String query="insert into book values(?,?,?,?)";
		  pstmt=conn.prepareStatement(query);
		  pstmt.setInt(1, no);
		  pstmt.setString(2,author);
		  pstmt.setString(3, title);
		  pstmt.setInt(4,price);
		  pstmt.execute();
		  RequestDispatcher rd=request.getRequestDispatcher("form1.html");
		  rd.forward(request,response);
			}
		 catch(Exception e)
			{
		    out.println(e);
			}

%>
```

```
</body>
</html>
```

form1.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="display.jsp" method="post">
<fieldset>
Enter title:<input type="text" name="title"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button><br>
</form>
</body>
</html>
```

display.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
```

```
</head>
<body>
<%@ page import="java.sql.*" %>
<%
		String url = "jdbc:mysql://localhost:3306/";
		String dbName = "mydb";
		String driver = "com.mysql.jdbc.Driver";
		String user = "root";
		String password = "";
		PreparedStatement pstmt;
		Statement st;
			try {

		  Class.forName(driver);
		  Connection conn = DriverManager.getConnection(url+dbName, user, password);
		  String title=request.getParameter("title");
		  String query="Select * from book where title='"+title+"'";
		  st=conn.createStatement();
		 ResultSet rs=st.executeQuery(query);
		  while(rs.next())
		    {
				String author=rs.getString("author");
				int no=rs.getInt("no");
				int price=rs.getInt("price");
				out.println("no "+no+" author "+author+" title "+title+" price "+price);
		    }			}
		     catch(Exception e)
		     {
		    out.println(e);
		     }
%>
</body>
</html>
```

8.a>Write a java program to implement the following :

Consider a restaurant that has one chef and one waitperson. The waitperson must wait for the chef to prepare a meal. When the chef has a meal ready, the chef notifies the waitperson, who then gets the meal and goes back to waiting. The chef represents the producer, and the waitperson represents the consumer.

```
class wait_eat
{
	int n;
	boolean value=false;
	synchronized public int eat()
	{
		while(!value)
		{
			try
			{
				wait();
			}
			catch(Exception e)
			{
				System.out.println(e);
			}
		}
		System.out.println("got meal no "+n);
		value=false;
		notify();
		return n;
	}
	synchronized public void put(int n)
	{
		while(value)
		{
			try
			{
				wait();
```

```
                        }
                        catch(Exception e)
                        {
                                System.out.println(e);
                        }
                }
                 this.n=n;
        System.out.println("put meal no"+n);
        value=true;
                 notify();

          }
}
class mythread extends Thread
{
          wait_eat p;
          mythread(wait_eat m)
          {
                  p=m;
             this.start();
          }
          public void run()
          {
                  int i=0;
                  try
                  {
                  while(true)
                  {
                          p.put(i++);
                          sleep(500);
                  }
                  }
                  catch(Exception e)
                  {
                  }
          }
}
class mythreadt extends Thread
{
          wait_eat p;
          mythreadt(wait_eat m)
          {
                  p=m;
```

```
                this.start();
        }
        public void run()
        {
                try
                {
                while(true)
                {
                        p.eat();
                        sleep(500);

                }
                }
                catch(Exception e)
                {
                }
        }
}
public class chef_wait {
        public static void main(String args[])
        {
                wait_eat p=new wait_eat();
                mythread m1=new mythread(p);
                mythreadt m2=new mythreadt(p);
                System.out.println("ctrl+c to stop");
        }

}
```

8.b>Write a JSP program to accept the marks entered and display his/her grade to the browser. Department has set the grade for the subject Java as follows : Above 90=A, 80-89=B,70-79=C, Below 70=FAIL.

html file:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="eightb.jsp" method="post">
Marks:<input type="text" name="marks">
<input type="submit" name="enter">
</form>
</body>
</html>
```

jsp file:

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
int m=Integer.parseInt(request.getParameter("marks"));
if(m>=90)
        out.println("A grade");
else if((m>=80) && (m<=89))
        out.println("B grade");
else if ((m>=70)&& (m<=79))
        out.println("C grade");
else
        out.println("FAIL");

%>
</body>
</html>
```

9.a>Define a class called Library with the following description:
Instance variables/data members:
Int acc_num – stores the accession number of the book
String title – stores the title of the book stores the name of the author
Member Methods:
(i) void input() – To input and store the accession number, title and author.
(ii)void compute – To accept the number of days late, calculate and display and fine charged
at the rate of Rs.2 per day.
(iii) void display() To display the details in the following format:
Accession Number Title Author
Write a main method to create an object of the class and call the above member methods.

```
import java.util.Scanner;
import java.io.*;

class Library{
Scanner sc = new Scanner(System.in);
 int ano;
 String title,author;
 int fine;

 void input(){

 System.out.println("Enter Title of the book");
 title = sc.nextLine();
 System.out.println("Enter author name");
 author = sc.nextLine();
 System.out.println("Enter accession number");
 ano = sc.nextInt();

 }

 void compute(int days_late){
 fine = days_late * 2;
 }

 void display(){
  System.out.print(" "+ano+" "+title+" "+author);
 }
}

class NineA{
static int days;
public static void main(String[] args){
Scanner sc = new Scanner(System.in);
```

```
Library obj = new Library();
obj.input();
System.out.println("Enter the number of days the book was delayed by: " );
days = sc.nextInt();
obj.compute(days);
obj.display();
}
}
```

9.b>Write a Java-JDBC program to implement Banking Application using transaction management.

```
import java.util.Scanner;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;

public class nineb {
	public static void main(String args[])
	{
		String driver="com.mysql.jdbc.Driver";
		String url="jdbc:mysql://localhost:3306/";
		String dbname="mydb";
		String username="root";
		String password="";
		try
		{
	  Class.forName(driver);
	  Connection con=DriverManager.getConnection(url+dbname, username, password);
	  con.setAutoCommit(false);
	 while(true)
	  {
	  System.out.println("enter your choice 1.add user 2.balance withdrawal 3.Deposit 4.rollback/commit
5.display");
	  Scanner input=new Scanner(System.in);
	  int n=input.nextInt();
	   switch(n)
	  {
	  case 1:	System.out.println("enter name");
			String name=input.next();
			System.out.println("enter id");
			int id=input.nextInt();
			System.out.println("Account opening balance");
			int balance=input.nextInt();
```

```
                String query="insert into bank values(?,?,?)";
                PreparedStatement pt=con.prepareStatement(query);
                pt.setInt(1,id);
                pt.setString(2, name);
                pt.setInt(3, balance);
                pt.execute();
                break;
 case 2:        System.out.println("enter id");
                id=input.nextInt();
                System.out.println("amount to withdraw");
                balance=input.nextInt();
                query ="select balance from bank where id="+id+"";
                Statement st=con.createStatement();
                ResultSet rs=st.executeQuery(query);
                rs.next();
                int b=rs.getInt("balance");
                b=b-balance;
                String query1="update bank set balance="+b+" where id="+id+"";
                pt=con.prepareStatement(query1);
                pt.execute();
                break;
 case 3:                System.out.println("enter id");
                        id=input.nextInt();
                        System.out.println("amount to deposit");
                        balance=input.nextInt();
                        query ="select balance from bank where id="+id+"";
                        Statement s=con.createStatement();
                        ResultSet r=s.executeQuery(query);
                        r.next();
                        int c=r.getInt("balance");
                        c=c+balance;
                        String quer="update bank set balance="+c+" where id="+id+"";
                        pt=con.prepareStatement(quer);
                        pt.execute();
                        break;
 case 4:
                        System.out.println("enter 1:commit 2:rollback");
                        int opt=input.nextInt();
                        if(opt==1)
                                con.commit();
                        else
                                con.rollback();
                        break;

case 5:          System.out.println("enter id");
                 id=input.nextInt();
                 query ="select balance from bank where id="+id+"";
                Statement s1=con.createStatement();
                ResultSet r1=s1.executeQuery(query);
                System.out.println(“id “+id+” balance ”+r1.getInt(“balance”));
```

```
                        break;
                         }
                }
                }
                catch(Exception e)
                {
                        System.out.println(e);
                }
        }
}
```

10.a>Write Java program to create a package called AdvMath. which has two classes. In main class use this package display the result as requested by the user.

(i) to calculate y = sinx+cosx+tanx

(ii) to print Pythagorean triplets

trigno.java

```
package AdvMath;

public class trigno {
        double x,total;
public trigno(double x)
{
        this.x=x*0.0174533;
}
public void cal()
{
        total=Math.sin(x)+Math.cos(x)+Math.tan(x);
}
public void display()
{
        System.out.println("sinx + cosx + tanx = "+total);
}
}
```

Pythagorastriplet.java

```
package AdvMath;

public class pythagorastriplet {
        public void pt(int limit)
        {
        int a, b, c=0;
   int m = 2;
        while (c < limit)
           {

               for (int n = 1; n < m; ++n)
               {
                  a = m*m - n*n;
                  b = 2*m*n;
```

```
                c = m*m + n*n;
                if (c > limit)
                    break;
              System.out.println(a+" "+b+" "+c);
            }
            m++;
        }
    }
}
```

mainAdvMath.java

```
import AdvMath.*;
public class mainAdvMath {

        public static void main(String args[])
        {
                trigno o1=new trigno(45.0);
                o1.cal();
                o1.display();
                pythagorastriplet o2=new pythagorastriplet();
                o2.pt(20);
        }
}
```

10.b>Write a servlet program to accept the details of client as client name , password and panid. Write a cookie which stores panid. If the cookie is present print "Welcome to"+clientname other wise print "Welcome".

panid.html

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="clientwrite" method="post">
```

```
<fieldset>
Enter name:<input type="text" name="name"><br>
Enter panid:<input type="text" name="panid"><br>
Enter password:<input type="text" name="password"><br>

</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
</html>
```

clientwrite.java(servlet)

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/clientwrite")
public class clientwrite extends HttpServlet {
protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
                        String client=request.getParameter("name");
                        String panid=request.getParameter("panid");
          Cookie mycookie=new Cookie("panid",client);
                        response.addCookie(mycookie);
                        response.setContentType("text/html");
                        PrintWriter pw=response.getWriter();
                        pw.println("cookie created");
                        RequestDispatcher rd=request.getRequestDispatcher("clientread.java");
                        rd.include(request,response);
                        pw.close();
                      }
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
                    // TODO Auto-generated method stub
                    doGet(request, response);
          }
```

}

clientread.java(servlet)

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/clientread")
public class clientread extends HttpServlet {

	protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
		Cookie[] cookies=request.getCookies();
		String name="";
		String value="";
		for(int i=0;i<cookies.length;i++)
		{
			name=cookies[i].getName();
			if(name.equals("panid"))
			{
				value=cookies[i].getValue();
				break;
			}
		}
		response.setContentType("text/html");
		PrintWriter pw=response.getWriter();
		pw.println("<h2> welcome "+value+"</h2>");
		pw.close();
	}
	protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
		// TODO Auto-generated method stub
		doGet(request, response);
	}

}
```

11.a> Write a java program to accept a string. Convert the string to uppercase. Count and output the number of double letter sequences that exist in the string.

Sample Input: "SHE WAS FEEDING THE LITTLE RABBIT WITH AN APPLE

Sample Output: 4

//we have neglected space to count.

//e.g she eat.

//output:1 (ee)

```
import java.util.Scanner;

public class elevena {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		String s="";
		int count=0;

		 System.out.println("Enter your string:");
	    Scanner scan = new Scanner(System.in);
	    s+=scan.nextLine();
	    scan.close();


		s=s.toUpperCase();
		System.out.println(s);
		s=s.replaceAll(" ", "");
		System.out.println(s);

		for(int i=0;i<s.length()-1;i++) {
			char c=s.charAt(i);
			char d=s.charAt(i+1);
			if(c==d)
			{
				count=count+1;
			}
		}
	System.out.println(count);
	}


}
```

11.b>Write a Servlet program that uses JDBC that displays the subjects allotted for the faculty with table namely, Subjects(SubID, SubName, FacID). Update subject details for a faculty and display how many rows are updated

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * Servlet implementation class faculty
 */
@WebServlet("/faculty")
public class faculty extends HttpServlet {
protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    String url = "jdbc:mysql://localhost:3306/";
    String dbname = "mydb";
    String driver = "com.mysql.jdbc.Driver";
    String usr = "root";
    String pwd = "";
    Statement st;
    PreparedStatement pst;
    try
            {
               Class.forName(driver);
               Connection con = DriverManager.getConnection(url+dbname,usr,pwd);
               String query="select FacID,SubName from subjects";
               st=con.createStatement();
               ResultSet rs=st.executeQuery(query);
```

```
            while(rs.next())
            {
                int facid=rs.getInt("FacID");
                String sub=rs.getString("SubName");
                out.println("facid "+facid+" sub "+sub);
                out.println("<br>");
            }
            String query1="update subjects set SubName='java' where FacID=1 and SubID=1";
            pst=con.prepareStatement(query1);
            int n=pst.executeUpdate();
            out.println("no of rows updated "+n);
            out.println("<br>");
            ResultSet rs1=st.executeQuery(query);
            while(rs1.next())
            {
                int facid=rs1.getInt("FacID");
                String sub=rs1.getString("SubName");
                out.println("facid "+facid+" sub "+sub);
                out.println("<br>");

            }
        }
        catch(Exception e)
        {
                out.println(e);
        }

    }

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
            // TODO Auto-generated method stub
            doGet(request, response);
    }

}
```

12.a>Write a java program to create five threads with different priorities. Send two threads of highest priority to sleep state. Check the aliveness of the threads.

```
class mythread extends Thread
{
	int n;
	mythread(int n)
	{
		this.n=n;
	}
	public void run()
	{
		System.out.println("running thread "+n);
		while(true)
		{

		}

	}

}
public class Fivethread {
public static void main(String args[])
{
	mythread t1=new mythread(1);
	mythread t2=new mythread(2);
	mythread t3=new mythread(3);
	mythread t4=new mythread(4);
	mythread t5=new mythread(5);
	t1.setPriority(9);
	t2.setPriority(8);
	t3.setPriority(7);
	t4.setPriority(6);
	t5.setPriority(5);
	t1.start();
	t2.start();
	t3.start();
	t4.start();
	t5.start();
	try
	{
	t1.sleep(100);
```

```
        t2.sleep(100);
        }
        catch(Exception e)
        {
        }

                if(t1.isAlive())
                {
                        System.out.println("active t1");
                }
                else
                        System.out.println("sleep t1");

                if(t2.isAlive())
                {
                        System.out.println("active t2");
                }
                else
                        System.out.println("sleep t2");


                if(t3.isAlive())
                {
                        System.out.println("active t3");
                }
                else
                        System.out.println("sleep t3");

                if(t4.isAlive())
                {
                        System.out.println("active t4");
                }
                else
                        System.out.println("sleep t4");

                if(t5.isAlive())
                {
                        System.out.println("active t5");
                }
                else
                        System.out.println("sleep t5");
}
}
```

12.b>Write a JSP program to create a HTML form with username, age, marks and submit button. The program should get values from HTML form and display message like "Eligible for SEE" along with the message the page includes counter.jsp, it counts the number of visitor visited the page.

counter.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%@ page import = "java.io.*,java.util.*" %>
<%
        Integer hitsCount = (Integer)application.getAttribute("hitCounter");
        if( hitsCount ==null || hitsCount == 0 ) {
           out.println("Welcome to my website!");
           hitsCount = 1;
        } else {
           out.println("Welcome back to my website!");
           hitsCount += 1;
        }
        application.setAttribute("hitCounter", hitsCount);
     %>
    <p>Total number of visits: <%= hitsCount%></p>
</body>
</html>
```

form.jsp

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
```

```
<form action="check.jsp" method="post">
<fieldset>
Enter username:<input type="text" name="name"><br>
Enter age:<input type="text" name="age"><br>
Enter marks:<input type="text" name="marks"><br>
</fieldset>
   <button type="submit">submit</button><br>
   <button type="reset">Cancel</button>
</form>
</body>
```

Check.jsp

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
int marks=Integer.parseInt(request.getParameter("marks"));
String name=request.getParameter("name");
int age=Integer.parseInt(request.getParameter("age"));
if(marks>=20)
{
	out.println("eligible for see");
}
else
{
	out.println("not elligible");
}
RequestDispatcher rd=request.getRequestDispatcher("counter.jsp");
rd.include(request,response);
%>
</body>
</html>
```

13.a>Write a Java Program to Implement an abstract class Reservation and two classes ReserveTrain and ReserveBus

Define a Reservation abstract class with following characteristics

Method reserve which takes integer value seats and typeOfSeat as parameters and returns boolean type.

Method getAvailableSeats which return a number of seat remaining.

```
import java.util.Scanner;
abstract class Reservation{
abstract public boolean reserve(int seat, String typeOfSeat);
}
class ReserveTrain extends Reservation{
int seat;
static int nost = 80;
String tos;
static int noOfSeats(){
return (--nost);
}
public boolean reserve(int seat, String typeOfSeat){
this.seat = seat;
tos = typeOfSeat;
if(this.seat>0 && tos != null ){
 System.out.println("No.of seats remaining: " +(ReserveTrain.noOfSeats()));
 return true;
}
else return false;
}
}
class ReserveBus extends Reservation{
int seat;
static int nosb=53;
String tos;
static int noOfSeats(){
return (--nosb);
}
public boolean reserve(int seat, String typeOfSeat){
this.seat = seat;
tos = typeOfSeat;
if(this.seat>0 && tos != null ){
 ReserveBus.noOfSeats();
 return true;
}
else return false;
}
}
class ThirteenA {
public static void main(String[] args){
Scanner sc = new Scanner(System.in);
```

```
ReserveTrain rt = new ReserveTrain();
ReserveBus rb = new ReserveBus();

int op,seat;
String tos;
boolean b;
while(true)
{
System.out.println("Select an option:\n 1.Reserve Train\n 2.Reserve Bus");
op = sc.nextInt();
switch(op){
case 1:
 System.out.println("Enter the type of seat (AC/Sleeper/Normal)");
 tos = sc.next();
 System.out.println("Select a seat no.");
 seat = sc.nextInt();
 b = rt.reserve(seat,tos);
 System.out.println("Reservation Successful: "+b);
break;
case 2:
 System.out.println("Enter the type of seat (AC/Sleeper/Normal)");
 tos = sc.next();
 System.out.println("Select a seat no.");
 seat = sc.nextInt();
 b = rb.reserve(seat,tos);
 System.out.println("Reservation Successful: "+b);
break;
}
}
}
}
```

13.b>Write a SetCookies servlet, a servlet that sets six cookies. Three have the default expiration date, meaning that they should apply only until the user next restarts the browser. The other three use setMaxAge to stipulate that they should apply for the next hour, regardless of whether the user restarts the browser or reboots the computer to initiate a new browsing session.

cookietype.java

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/cookietype")
public class cookietype extends HttpServlet {

	protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
		for(int i=0;i<3;i++)
		{
	Cookie mycookie=new Cookie("session-cookie-"+i,"cookie value S "+i);
		response.addCookie(mycookie);
		mycookie=new Cookie("persistent-cookie-"+i,"cookie value P "+i);
		mycookie.setMaxAge(3600);
		response.addCookie(mycookie);
		}
		response.setContentType("text/html");
			PrintWriter pw=response.getWriter();
			pw.println("cookie created");
	}


	protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
```

```
		// TODO Auto-generated method stub
		doGet(request, response);
	}

}
```

cookieread.java

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/cookieread")
public class cookieread extends HttpServlet {

	protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
		Cookie[] cookies=request.getCookies();
		String name="";
		String value="";
		response.setContentType("text/html");
		PrintWriter pw=response.getWriter();
		if(cookies==null)
		{
			pw.println("<tr><th colspan=2>no cookies<br>");
		}
		else
		{
		for(int i=0;i<cookies.length;i++)
		{
			name=cookies[i].getName();
			value=cookies[i].getValue();
```

```
                        pw.println("<tr><td>"+name+"</td><td>value
"+value+"</td></tr><br>");
                }
                }
}


        protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
                // TODO Auto-generated method stub
                doGet(request, response);
        }

}
```

14.a>Write a Java program to create an applet when we drag the mouse, the path of the mouse pointer must be drawn as a rectangle.

```
import java.applet.Applet;
import java.awt.Graphics;
import java.awt.event.MouseEvent;
import java.awt.event.MouseListener;
import java.awt.event.MouseMotionListener;

public class AppletRectangle extends Applet implements MouseMotionListener,MouseListener
{
    int startx,starty,x,y,height,width;
        public void init()
        {
                addMouseListener(this);
                addMouseMotionListener(this);
        }
        public void mouseDragged(MouseEvent e) {
                x=startx;
                y=starty;
           height=e.getX()-startx;
                width=e.getY()-starty;

                if(height<0)
                {
                        x=e.getX();
                        height=Math.abs(height);
                }
                if(width<0)
                {
                        y=e.getY();
                        width=Math.abs(width);
                }
           repaint();
        }
        public void mousePressed(MouseEvent e) {
```

```
            startx=e.getX();
            starty=e.getY();
            showStatus("mouse pressed");
        }

        public void paint(Graphics g)
        {
            g.drawRect(x,y,height,width);

        }
        public void mouseMoved(MouseEvent e) {}
         public void mouseClicked(MouseEvent e) {}
        public void mouseEntered(MouseEvent e) {}
         public void mouseExited(MouseEvent e) {}
        public void mouseReleased(MouseEvent e) {}
}
```

14.b>Write a JAVA-JDBC program that connects to the database COLLEGE with STUDENT TABLE with appropriate attributes. Write a program to display the Students whose cgpa is below 9 and also update the student table to change the cgpa of student named "john" from 8.96 t0 9.4 using updatable result set. Finally display the results and disconnect form the database.
//create database COLLEGE with table STUDENT(name,cgpa)
name-varchar,cgpa-double
//make name or cgpa primary key

Class CollegeStudent.java

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;

public class CollegeStudent {
public static void main(String args[])
{
        String driver="com.mysql.jdbc.Driver";
        String url="jdbc:mysql://localhost:3306/";
        String dbname="COLLEGE";
        String username="root";
        String password="";
        try
        {
   Class.forName(driver);
   Connection con=DriverManager.getConnection(url+dbname, username, password);
   String query="select * from student where cgpa<9";
   Statement st=con.createStatement();
   ResultSet rs=st.executeQuery(query);
   System.out.println("students with cgpa less than 9");
   while(rs.next())
   {
        String name=rs.getString("name");
        double cgpa=rs.getDouble("cgpa");
        System.out.println("name "+name+" cgpa "+cgpa);
```

```
    }
    Statement
st1=con.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,ResultSet.CONCUR_UPDAT
ABLE);
    String query1="select name,cgpa from student";
    ResultSet rs1=st1.executeQuery(query1);
    while(rs1.next())
    {
        if(rs1.getString("name").equals("john"))
        {
            break;
        }
    }
    rs1.updateDouble("cgpa", 9.4);
    rs1.updateRow();
    Statement st2=con.createStatement();
    ResultSet rs2=st2.executeQuery("select * from student");
    System.out.println("students");
    while(rs2.next())
    {
        String name=rs2.getString("name");
        double cgpa=rs2.getDouble("cgpa");
        System.out.println("name "+name+" cgpa "+cgpa);

    }
    st.close();
    st1.close();
    con.close();
        }
        catch(Exception e)
        {
            System.out.println(e);
        }

}
}
```