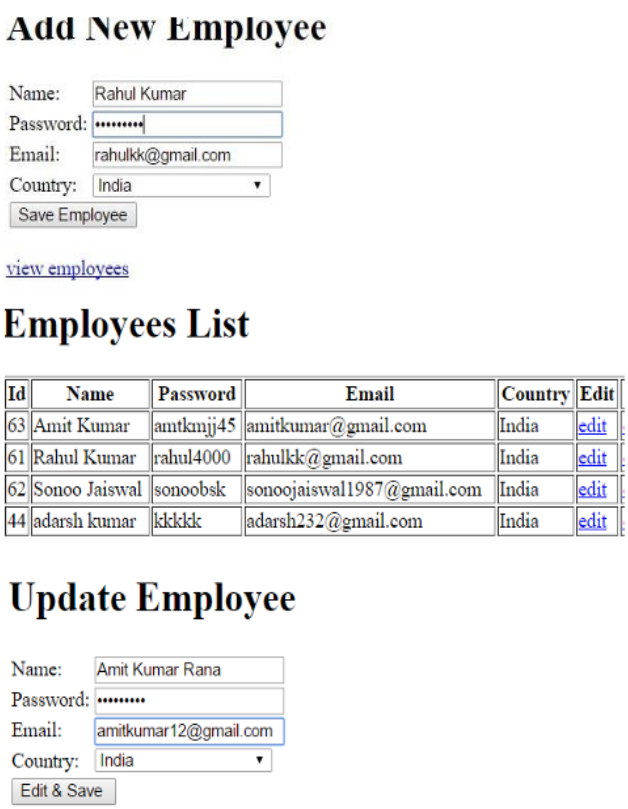
INDEX



6.	Write a java JSP program to get student information through a HTML and create a JAVA Bean Class, populate Bean and Display the same information through another JSP .	60-63
7.	Write a menu driven program to create a linked list and perform the following operations. a. to Insert some Elements at the Specified Position. b. swap two elements in a linked list. c. to Iterate a LinkedList in Reverse Order. d. to Compare Two LinkedList. e. to Convert a LinkedList to ArrayList.	64-68
8.	Implement a java application based on the MVC design pattern. Input student Rolnlo, name ,marks in three subject calculate result and grade and display the result in neat format.	69-72

Percentage of Marks	Grade
Above 90%	A
80% to 90%	B
70% to 80%	C
60% to 70%	D
Below 60%	E

PART - A

/**
PROGRAM: 1 **DATE: 19/03/2024**
NAME: **REG.NO:**
****

Aim: Write a program to convert numbers into words using Enumerations with constructors, methods and instance variables.(INPUT RANGE-0 TO 99999) EX: 36 THIRTY SIX .
**/

```
import java.util.Scanner;
public class Parta1 {
  enum Units
  {
ZERO(""),ONE("ONE"),TWO("TWO"),THREE("THREE"),FOUR("FOUR"),FIVE("FIVE"),SIX("SIX"),
SEVEN("SEVEN"),EIGHT("EIGHT"),NINE("NINE");
    private final String word;
    Units(String word)
    {
      this.word=word;
    }
    public String getWord()
    {
      return word;
    }
  }
  enum Tens
  {
TEN("TEN"),ELEVEN("ELEVEN"),TWELVE("TWELVE"),THIRTEEN("THIRTEEN"),FOURTEEN("F
OURTEEN"),FIFTEEN("FIFTEEN"),SIXTEEN("SIXTEEN"),
SEVENTEEN("SEVENTEEN"),EIGHTEEN("EIGHTEEN"),NINTEEN("NINTEEN"),TWENTY("TWEN
TY"),THIRTY("THIRTY"),FOURTY("FOURTY"),
FIFTY("FIFTY"),SIXTY("SIXTY"),SEVENTY("SEVENTY"),EIGHTY("EIGHTY"),NINTY("NINTY");
    private final String word;
    Tens(String word)
    {
      this.word=word;
    }
    public String getWord()
    {
      return word;
    }
  }
  enum Thousands
  {
    THOUSAND("THOUSAND");
    private final String word;
```

```
    Thousands(String word)
    {
      this.word=word;
    }
    public String getWord()
    {
      return word;
    }
  }
  public static String convertToWords(int number) {
    if(number==0)
    {
      return"ZERO";
    }
    String words=" ";
    if(number/1000>0)
    {
words+=convertThreeDigitsToWords(number/1000)+""+Thousands.THOUSAND.getWord()+"
";
      number%=1000;
    }
    words += convertThreeDigitsToWords(number);
    return words.trim();
  }
  private static String convertThreeDigitsToWords(int number)
  {
    String words=" ";
    if(number/100>0)
    {
      words += Units.values()[number/100].getWord()+"HUNDRED";
      number%=100;
    }
    if(number>=20)
    {
      words += Tens.values()[(number/10)+8].getWord()+" ";
      number%=10;
    }
    else if(number>=10)
    {
      words += Tens.values()[number%10].getWord()+" ";
      number=0;
    }
    if(number>0)
```

```
    {
      words += Units.values()[number].getWord()+" ";
    }
    return words;
  }
  public static void main(String[]args)
  {
    Scanner scanner=new Scanner(System.in);
    System.out.println("Enter a number between 0 and 99999:");
    int number=scanner.nextInt();
    if(number<0||number>99999)
    {
      System.out.println("Please Enter input between 0 to 99999");
    }
    else
    {
      String result=convertToWords(number);
      System.out.println(result);
    }
  }
}
```

OUTPUT:

```
Enter a number between 0 and 99999:
60000
SIXTY  THOUSAND
------------------------------------------------------------------------
BUILD SUCCESS
------------------------------------------------------------------------
```

/**
PROGRAM: 2 **DATE: 19/03/2024**
NAME: **REG.NO:**
****

Aim: Find the second maximum and second minimum in a set of numbers using auto boxing and unboxing.
**/

```
import java.util.*;
public class Parta2 {
  public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the size of array");
    int n=sc.nextInt();
    List<Integer>arlist=new ArrayList<>();
    int num[]=new int[n];
    System.out.println("Enter the number");
    for(int i=0;i<n;i++)
      arlist.add(sc.nextInt());
    Integer secondMax=findSecondMax(arlist);
    Integer secondMin=findSecondMin(arlist);
    System.out.println("Second Maximum:"+secondMax);
    System.out.println("Second Minimum:"+secondMin);
  }
  private static Integer findSecondMax(List<Integer>arlist)
  {
    if(arlist.size()<2)
      return null;
    Integer max=null;
    Integer secondMax=null;
    for(Integer number:arlist)
    {
      if(max==null || number>max)
      {
        secondMax=max;
        max=number;
      }
      else if(secondMax==null||number>secondMax)
      {
        secondMax=number;
      }
    }
    return secondMax;
  }
```

```
  private static Integer findSecondMin(List<Integer>arlist)
  {
    if(arlist.size()<2)
      return null;
    Integer min=null;
    Integer secondMin=null;
    for(Integer number:arlist)
    {
      if(min==null || number < min)
      {
        secondMin=min;
        min=number;
      }
      else if(secondMin==null || number < secondMin)
      {
        secondMin=number;
      }
    }
    return secondMin;
  }
}
```

OUTPUT:

```
Enter the size of array
5
Enter the number
2
7
4
1
3
Second Maximum:4
Second Minimum:2
------------------------------------------------------------------------
BUILD SUCCESS
------------------------------------------------------------------------
```

/**
PROGRAM: 3 **DATE: 12/03/2024**
NAME: **REG.NO:**
****

Aim: Write a menu driven program to create an Arraylist and perform the following operations.

i) Adding elements.

ii) Sortingelements.

iii) Replace an element with another.

iv) Removing an element.

v) Displaying all the elements.

vi) Adding an element between two elements.

**/

```
import java.util.ArrayList;
import java.util.Collections;
import java.util.Scanner;
public class PartA3 {
   public static void main(String[] args) {
      int choice;
      Scanner in =new Scanner(System.in);
      ArrayList<Integer>alist=new ArrayList<Integer>();
      int val,fval,pos;
      do
      {
      System.out.println("********MENU********");
      System.out.println("1.Add");
      System.out.println("2.Sort");
      System.out.println("3.Replace");
      System.out.println("4.Remove");
      System.out.println("5.Display");
      System.out.println("6.Add in between");
      System.out.println("7.Exit");
      System.out.println("---------------------");
      System.out.println("Enter your choice");
      choice=in.nextInt();
```

```
switch(choice)
{
   case 1:System.out.println("Enter a number:");
   val=in.nextInt();
   alist.add(val);
   System.out.println("Item added to the list");
   break;
   case 2:System.out.println("Sorting");
   Collections.sort(alist);
   System.out.println("Sorting Complete");
   break;
   case 3:System.out.println("Enter value to find");
   fval=in.nextInt();
        if(alist.contains(fval))
        {
           System.out.println("Enter the Replacement value:");
           val=in.nextInt();
           Collections.replaceAll(alist, fval, val);
           System.out.println("Replacement completed:");
        }
        else
        {
           System.out.println("Element does not exit:");
        }
        break;
   case 4:System.out.println("Enter the element to remove:");
   val=in.nextInt();
   if(alist.contains(val))
   {
      alist.remove((Integer)val);
      System.out.println(val +"is removed");
   }
```

```
        else
        {
           System.out.println("Element is not found");
        }
        break;
        case 5:System.out.println(alist);
        break;
        case 6:System.out.println("Enter the index position:");
        pos=in.nextInt();
        if(pos<alist.size())
        {
           System.out.println("Enter the value of new element:");
           val=in.nextInt();
           alist.add(pos,val);
           System.out.println("Element inserted");
        }
        else
        {
           System.out.println("Position out of bound");
        }
        break;
        case 7:System.out.println("Thank you");
        return;
        default:System.out.println("Wrong choice! Try again.....");
      }
   }
   while(true);
 }
}
```

OUTPUT:

********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit

Enter your choice
1
Enter a number:
2
Item added to the list
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit

Enter your choice
1
Enter a number:
3
Item added to the list
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit

Enter your choice
1
Enter a number:
5
Item added to the list
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit

Enter your choice
1
Enter a number:
4
Item added to the list
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display

```
6.Add in between
7.Exit
----------
Enter your choice
2
Sorting
Sorting Complete
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
5
[2, 3, 4, 5]
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
3
Enter value to find
2
Enter the Replacement value:
1
Replacement completed:
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
5
[1, 3, 4, 5]
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
6
Enter the index position:
2
Enter the value of new element:
6
Element inserted
```

```
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
5
[1, 3, 6, 4, 5]
********MENU********
1.Add
2.Sort
3.Replace
4.Remove
5.Display
6.Add in between
7.Exit
----------
Enter your choice
7
Thank you
------------------------------------------------------------------------
BUILD SUCCESS
```

/**
PROGRAM: 4 **DATE: 16/04/2024**
NAME: **REG.NO:**
****

Aim: Write a java program to find words with even number of characters in a string, then swap the pair of characters in those words and also toggle the characters in a given string .

EX:

Good Morning everyone
Output: oGdo vereoyen

gOOD mORNING EVERYONE
**/

```
import java.util.*;

public class Parta4 {

  public static void main(String[] args) {

    // TODO code application logic here

    Scanner scanner=new Scanner(System.in);

    String str;

    System.out.println("Enter a String:");

    str=scanner.nextLine();

    String punct=" .,!?:;\n\t";

    int start=0;

    String word="",revWord="";

    String togStr="";

    str=str.trim()+" ";

    for(int i=0;i<str.length();i++)

    {

      if(punct.contains(str.charAt(i)+""))

      {

        word=str.substring(start,i);

        start=i+1;

        StringBuilder sb=new StringBuilder(word.trim());

        char tchar;

        if(sb.length()>0 && sb.length()%2==0)

        {

          for(int j=1;j<sb.length();j+=2)
```

```
            {
               tchar=sb.charAt(j);
               sb.setCharAt(j,sb.charAt(j-1));
               sb.setCharAt(j-1, tchar);
            }
            System.out.println("" +sb);
          }
          StringBuilder capF=new StringBuilder(word);
          for(int j=0;j<sb.length();j++)
          {
            if(Character.isUpperCase(capF.charAt(j)))
            {
               capF.setCharAt(j,Character.toLowerCase(capF.charAt(j)));
            }
            else if(Character.isLowerCase(capF.charAt(j)))
            {
               capF.setCharAt(j,Character.toUpperCase(capF.charAt(j)));
            }
          }
          togStr +=capF;
          togStr +=str.charAt(i);
        }
      }
   System.out.println("\n"+togStr);
  }
}
```

OUTPUT:

```
Enter a String:
Good Morning everyone
oGdo
vereoyen

gOOD mORNING EVERYONE
BUILD SUCCESSFUL (total time: 14 seconds)
```

/**

PROGRAM: 5 **DATE: 26/03/2024**

NAME: **REG.NO:**

****

Aim: Write a Servlet program that accepts the age and name and displays if the user is eligible for voting or not .

Output:

**********/

Index.html

```
<html>
  <head>
    <title>Voting Eligibility Test</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <style>
      table{
      background-color:aqua;
      width:200px;
      margin-top:100x;
      margin-left:auto;
      margin-right:auto;
      border:solid 2px;
      }
    td{
```

```
    padding:5px;
    }
    </style>
  </head>
  <body>
    <form method="POST" action="CheckVector">
      <table>
        <tr>
          <td>Name</td>
          <td><input type="text" name="uname"></td>
        </tr>
        <tr>
          <td>Age</td>
          <td><input type="text" name="age"></td>
        </tr>
        <tr>
          <td></td>
          <td><input type="submit" name="uname" value="check votoing eligibility="></td>
        </tr>
      </table>
    </form>
  </body>
</html>
```

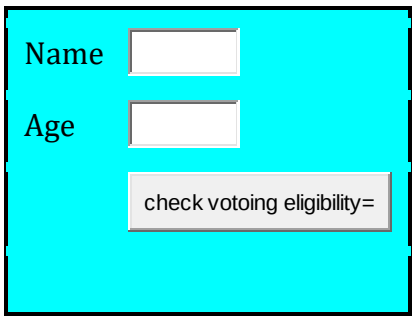
CheckVoter.java

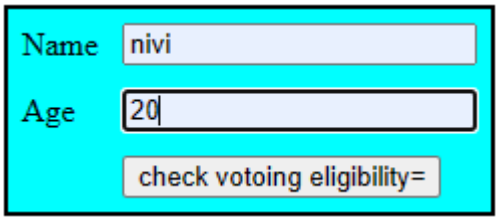
```
package com;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
```

```
public class CheckVoter extends HttpServlet {
   protected void processRequest(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
         /* TODO output your page here. You may use following sample code. */
         out.println("<!DOCTYPE html>");
         out.println("<html>");
         out.println("<head>");
         out.println("<title>Servlet CheckVoter</title>");
         out.println("</head>");
         out.println("<body>");
         String name=request.getParameter("uname");
         int age=Integer.parseInt(request.getParameter("age"));
         if(age>18)
         {
            out.println("<h4 style=\"color:green\">" +name + "you are eligible to vote</h4>");
         }else{
            out.println("<h4 style=\"color:brown\">" +name + "you are not eligible to vote</h4>");
         }
         out.println("<a href=\"index.html\">Home</a>");
         out.println("</body>");
         out.println("</html>");
      }
   }
   // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
   @Override
   protected void doGet(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      processRequest(request, response);
   }
```

```
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }
}
```

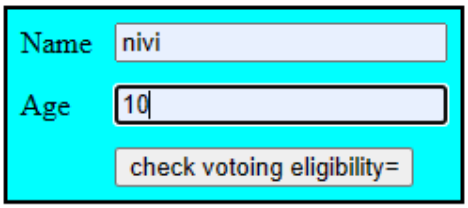
OUTPUT:





niviyou are eligible to vote

Home



niviyou are not eligible to vote

Home

/**
PROGRAM: 6 **DATE: 16/04/2024**

NAME: **REG.NO:**

****

Aim: Write a JSP program to print firs 10Fibonacci and 10 prime numbers .

**/

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Fibo and Prime</title>
  </head>
  <body>
    <h4>Fibonacci Series</h4>
    <%
      int f1=0,f2=1,f3,i;
      out.println(f1+"  "+f2+"  ");
      for(i=1;i<=10;i++)
      {
        f3=f1+f2;
        out.println(f3+"  ");
        f1=f2;
        f2=f3;
      }
      %>
      <h4>Prime numbers</h4>
      <%
        int pn=2,count=1;
      boolean isprime;
      while(count<=10)
      {
        isprime=true;
        for(i=2;i<=pn/2;i++)
        {
          if(pn%i==0)
          {
            isprime=false;
            break;
          }
        }
        if(isprime)
        {
          out.println(pn+"  ");
          count++;
        }
        pn++;
      }
      %>
  </body>
</html>
```

OUTPUT:

Fibonacci Series

0 1 1 2 3 5 8 13 21 34 55 89

Prime numbers

2 3 5 7 11 13 17 19 23 29

/**
PROGRAM: 7 **DATE: 23/04/2024**
NAME: **REG.NO:**
****

Aim: Write a JSP Program to design a shopping cart to add items, remove item and to display items from the cart using Sessions .
**/

Item.java

```
package com;
import java.io.Serializable;
public class item {
   private String name;
   private int qty;
   private double price;
   public item() {
   }
   public item(String name, int qty, double price) {
      this.name = name;
      this.qty = qty;
      this.price = price;
   }
   public String getName() {
      return name;
   }
   public void setName(String name) {
      this.name = name;
   }
   public int getQty() {
      return qty;
   }
   public void setQty(int qty) {
      this.qty = qty;
   }
   public double getPrice() {
      return price;
   }
   public void setPrice(double price) {
      this.price = price;
   }
}
```

ShoppingDemo.jsp

```
<%@page import="com.item"%>
```

```
<%@page import="java.util.ArrayList"%>
<%@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>
    <h1>Shopping Cart</h1>
    <%
      ArrayList<item>cart;
      if(request.getSession().getAttribute("cart")==null){
        cart=new ArrayList<item>();
        request.getSession().setAttribute("cart", cart);
      }else{
        cart=(ArrayList<item>)request.getSession().getAttribute("cart");
      }
      %>
    <table width="100%">
      <tr>
        <td>
          <form method="POST">
            <img src="images/image1.png" alt="harddsik"height="200px"/>
            <h4>Harddisk</h4>
            <input type="hidden"value="harddisk" name="name">
            price:Rs.3500
            <input type="hidden"value="3500"name="price">
            <br>
            quantity:
            <input type="number"name="qty"value="1"width="2"style="width:20px">
            <br>
            <input type="submit"name="addBtn"value="Add">
          </form>
        </td>
        <td>
          <form method="POST">
            <img src="images/image2.png" alt="harddsik"height="200px"/>
            <h4>Harddisk</h4>
            <input type="hidden"value="harddisk1" name="name">
            price:Rs.4500
            <input type="hidden"value="4500"name="price">
            <br>
```

```
            quantity:
            <input type="number"name="qty"value="1"width="2"style="width:20px">
            <br>
            <input type="submit"name="addBtn"value="Add">
          </form>
        </td>
        <td>
          <form method="POST">
            <img src="images/image3.png" alt="harddisk"height="200px"/>
            <h4>Sprite</h4>
            <input type="hidden"value="sprite" name="name">
            price:Rs.40
            <input type="hidden"value="40"name="price">
            <br>
            quantity:
            <input type="number"name="qty"value="1"width="2"style="width:20px">
            <br>
            <input type="submit"name="addBtn"value="Add">
          </form>
        </td>
      </tr>
    </table>
    <%
      if(request.getParameter("removeBtn")!=null){
        int index=Integer.parseInt(request.getParameter("ino"));
        cart.remove(index);
        out.println("<h4 style=\"color:green\">item is removed</h4>");
      }
      if(request.getParameter("addBtn")!=null){
        int qty=Integer.parseInt(request.getParameter("qty"));
        if(qty<0){
          out.println("<h4 style=\"color:red\">Please enter a positive value for
quantity</h4>");
        }else{
          String name=request.getParameter("name");
          boolean itemFound=false;
          for(int i=0;i<cart.size();i++){
            item item=cart.get(i);
            if(item.getName().equals(name)){
              item.setQty(item.getQty()+qty);
              out.println("<h4 style=\"color:blue\">item:"+name+"added to the cart</h4>");
              itemFound=true;
              break;
```

```
            }
          }
          if(!itemFound){
            double price=Double.parseDouble(request.getParameter("price"));
            item itm=new item(name,qty,price);
            cart.add(itm);
            out.println("<h4 style=\"color:blue\">item:"+name+"added to the cart</h4>");
          }
        }
      }
      if(cart.size()>0){
        %>
        <h2>cart details</h2>
        <table border="2">
          <tr>
            <th>Item Name</th>
            <th>Quantity</th>
            <th>Price</th>
            <th>Total</th>
            <th>Action</th>
          </tr>
          <%
            for(int i=0;i<cart.size();i++){
              item item=cart.get(i);
              %>
              <tr>
                <td><%=item.getName()%></td>
                <td><%=item.getQty()%></td>
                <td><%=item.getPrice()%></td>
                <td><%=item.getQty()*item.getPrice()%></td>
                <td>
                  <form method="post">
                    <input type="hidden"value="<%=i%>"name="ino">
                    <input type="submit"value="Remove"name="removeBtn">
                  </form>
                </td>
              </tr>
              <%
              }
            }
          %>
        </table>
        <%
```

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

OUTPUT:

Shopping Cart

Harddisk

price:Rs.3500
quantity: 1
Add

Harddisk1

price:Rs.4500
quantity: 1
Add

Sprite

price:Rs.40
quantity: 1
Add

item:harddiskadded to the cart

cart details

Item Name	Quantity	Price	Total	Action
harddisk	1	3500.0	3500.0	Remove

Shopping Cart

Harddisk

price:Rs.3500
quantity: 1
Add

Harddisk1

price:Rs.4500
quantity: 1
Add

Sprite

price:Rs.40
quantity: 1
Add

item:harddisk1added to the cart

cart details

Item Name	Quantity	Price	Total	Action
harddisk	1	3500.0	3500.0	Remove
harddisk1	1	4500.0	4500.0	Remove

Shopping Cart

Harddisk

price:Rs.3500
quantity: 1
Add

Harddisk1

price:Rs.4500
quantity: 1
Add

Sprite

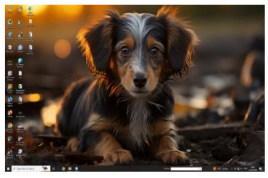
price:Rs.40
quantity: 1
Add

item:spriteadded to the cart

cart details

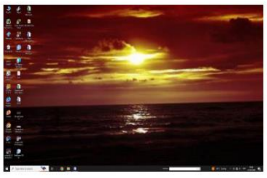
Item Name	Quantity	Price	Total	Action
harddisk	1	3500.0	3500.0	Remove
harddisk1	1	4500.0	4500.0	Remove
sprite	1	40.0	40.0	Remove

Shopping Cart



Harddisk

price:Rs.3500
quantity: 1
Add



Harddisk1

price:Rs.4500
quantity: 1
Add

Sprite

price:Rs.40
quantity: 1
Add

item is removed

/**

PROGRAM: 8 **DATE: 23/04/2024**

NAME: **REG.NO:**

****

Aim: Write a java Servlet program to Download a file and display it on the screen(A link has to be provided in HTML, when the link is clicked corresponding file has to be displayed on screen).

**/

Index.html

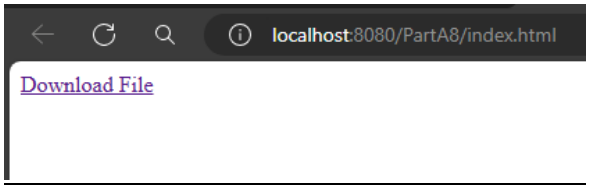
```
<!DOCTYPE html>
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <a href="FileDownloaders?filename=mycv.txt">Download File</a>
  </body>
</html>
```

FileDownloaders.java

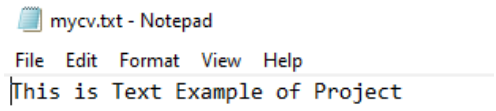
```
package com;
import java.io.FileInputStream;
import java.io.IOException;
import java.io.OutputStream;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class FileDownloaders extends HttpServlet {
  protected void processRequest(HttpServletRequest request, HttpServletResponse response)
      throws ServletException, IOException
  {
    response.setContentType("text/plaintext");
```

```
        String fname=request.getParameter("filename");
        response.setContentType("text/plaintext");
        response.setHeader("Content-Disposition","attachment;mycv.txt=\""+fname+"\"");
        OutputStream os=response.getOutputStream();
        FileInputStream file=new FileInputStream("C:\\3bca\\mycv.txt");
        int i=0;
          while((i=file.read())!=-1)
          {
             os.write(i);
          }
          file.close();
          os.close();
      }
    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
          throws ServletException, IOException {
        processRequest(request, response);
    }
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
          throws ServletException, IOException {
        processRequest(request, response);
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```

OUTPUT:


localhost:8080/PartA8/index.html
Download File


Downloads
mycv.txt
Open file


mycv.txt - Notepad
File Edit Format View Help
This is Text Example of Project

PART - B

/**
PROGRAM: 1 **DATE: 30/04/2024**
NAME: **REG.NO:**
****

Aim: Write a menu driven JDBC program to perform basic operations with Student Table.

MENU

1. **Add new Student**
2. **Delete a specified students Record**
3. **Update Students Address specified students Record**
4. **Search for a particular Student**
5. **Exit**

Student

StRegNo	StName	Stdob	StAddress	StClass	StCourse

**/

```
package studentinfomgt;
import java.sql.Connection;
import java.sql.Date;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.Scanner;
import java.util.logging.Level;
import java.util.logging.Logger;
/**
 *
 * @author TOSHIBA
 */
public class StudentInfoMgt {
   /**
    * @param args the command line arguments
    */
   public static void main(String[] args) {
      try {
         // TODO code application logic here
         Scanner in =new Scanner(System.in);
         int choice;
         int regno;
         String sname;
         String sadd,sclass,scourse,sql;
         Date dob=null;
         Class.forName("org.apache.derby.jdbc.ClientDriver");
```

```
        Connection
con=DriverManager.getConnection("jdbc:derby://localhost:1527/Student","mithun","mithun");

        Statement stmt=con.createStatement();
        ResultSet rs;
        do{
           System.out.println("Menu");
           System.out.println("-------------");
           System.out.println("1. Add student");
           System.out.println("2. Delete student");
           System.out.println("3. Upadate studet");
           System.out.println("4. Search student");
           System.out.println("5. Exit");
           System.out.println("---------------");
           System.out.println("Enter your choice");
 choice=in.nextInt();
           switch(choice)
           {
              case 1:
                 System.out.println("----Enter student details----");
                 System.out.println("Reg no :");
                 regno=in.nextInt();
                 System.out.println("name");
                 sname=in.next();
                 System.out.println("DOB[yyyy-dd-mm]");
                 dob=Date.valueOf(in.next());
                 System.out.println("Address :");
                 sadd=in.next();
                 System.out.println("Class :");
                 sclass=in.next();
                 System.out.println("Course :");
                 scourse=in.next();
                 sql="INSERT INTO MITHUN.STDTABLE (STREGNO, STNAME, STDOB, STADDRESS,
STCLASS, STCOURSE)VALUES ("+regno+", '"+sname+"', '"+dob.toString()+"', '"+sadd+"',
'"+sclass+"', '"+scourse+"')";
                int result=stmt.executeUpdate(sql);
      if(result==1)
                {
                   System.out.println("Student details are saved ");
                }else{
                   System.out.println("Error while saving student details ");
      }
                 break;
```

```
            case 2:
              System.out.print("Enter Student Regno:");
              regno=in.nextInt();
              sql="SELECT COUNT(*) FROM MITHUN.STDTABLE WHERE STREGNO="+regno;
              rs=stmt.executeQuery(sql);
              rs.next();
              if(rs.getInt(1)==1)
              {
                sql="DELETE FROM MITHUN.STDTABLE WHERE STREGNO="+regno;
                int res=stmt.executeUpdate(sql);
                 if(res==1)
                 {
                    System.out.println("Student record is deleted");
                }else{
                 System.out.println("record not deleted");
                 }
              }else
              {
                System.out.println("Student record not found");
              }
 break;
                        case 3:
              System.out.print("Enter Student Regno:");
              regno = in.nextInt();
              sql = "SELECT COUNT(*) FROM MITHUN.STDTABLE WHERE STREGNO=" + regno;
              rs = stmt.executeQuery(sql);
              rs.next();
              if (rs.getInt(1) == 1) {
                sql = "SELECT STADDRESS FROM MITHUN.STDTABLE WHERE STREGNO=" +
regno;
                rs = stmt.executeQuery(sql);
                rs.next();
                System.out.println("Old address: " + rs.getString(1));
                System.out.println("Enter new address:");
                in.nextLine();
                sadd = in.nextLine();
                sql = "UPDATE MITHUN.STDTABLE SET STADDRESS='" + sadd + "' WHERE
STREGNO=" + regno;
                System.out.println("Updating: ");
                if (stmt.executeUpdate(sql) == 1) {
                  System.out.println("Address updated.");
                } else {
                  System.out.println("Error while updating address.");
```

```
                    }
                } else {
                    System.out.println("Student record not found.");
                }
                break;
            case 4:
                System.out.print("Enter Student Regno:");
        regno=in.nextInt();
                sql="SELECT * FROM MITHUN.STDTABLE WHERE STREGNO="+regno;
                rs=stmt.executeQuery(sql);
                if(rs!=null)
                {
                rs.next();
                System.out.println("Student details are");
                 System.out.println("---------------------");
                  System.out.println("Student details are");
                   System.out.println("Reg no:"+rs.getInt(1));
                   System.out.println("Name:"+rs.getString(2));
                   System.out.println("Dob:"+rs.getString(3));
                   System.out.println("Address:"+rs.getString(4));
                   System.out.println("Class:"+rs.getString(5));
                   System.out.println("Course:"+rs.getString(6));
                }
                break;
            case 5:
                stmt.close();
                con.close();
                System.out.println("Thank u");
                return;
            default:
                System.out.println("Wrong choice \n Try Again");
          }
        }while(true);
             } catch (ClassNotFoundException ex) {
        Logger.getLogger(StudentInfoMgt.class.getName()).log(Level.SEVERE, null, ex);
      } catch (SQLException ex) {
        Logger.getLogger(StudentInfoMgt.class.getName()).log(Level.SEVERE, null, ex);
      }
    }
}
```

OUTPUT:

```
run:
Menu
-------------
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit
---------------
Enter your choice
1
----Enter student details----
Reg no :
101
name
Ashwath
DOB[yyyy-dd-mm]
2001-01-01
Address :
Manjeshwara
Class :
B
Course :
BCA
Student details are saved
Menu
-------------
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit
---------------
Enter your choice
1
----Enter student details----
Reg no :
102
name
Rahul
DOB[yyyy-dd-mm]
2002-02-02
Address :
Kolya
Class :
A
Course :
BCA
Student details are saved
Menu
-------------
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit
---------------
Enter your choice
1
----Enter student details----
Reg no :
103
name
Karthik
DOB[yyyy-dd-mm]
2003-03-03
Address :
Mangalore
Class :
C
Course :
BCA
Student details are saved
```

#	STREGNO	STNAME	STDOB	STADDRESS	STCLASS	STCOURSE
1	101	Ashwath	2001-01-01	Manjeshwara	B	BCA
2	102	Rahul	2002-02-02	Kolya	A	BCA
3	103	Karthik	2003-03-03	Mangalore	C	BCA

```
Menu
-------------
1. Add student
2. Delete student
3. Update student
4. Search student
```

5. Exit

Enter your choice
2
Enter Student Regno:103
Student record is deleted

#	STREGNO	STNAME	STDOB	STADDRESS	STCLASS	STCOURSE
1	101	Ashwath	2001-01-01	Manjeshwara	B	BCA
2	102	Rahul	2002-02-02	Kolya	A	BCA

Menu
---
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit

Enter your choice
3
Enter Student Regno:102
Old address: Kolya
Enter new address:
Ucchila
Updating:
Address updated.

#	STREGNO	STNAME	STDOB	STADDRESS	STCLASS	STCOURSE
1	101	Ashwath	2001-01-01	Manjeshwara	B	BCA
2	102	Rahul	2002-02-02	Ucchila	A	BCA

Menu
---
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit

Enter your choice
4
Enter Student Regno:101
Student details are

Student details are
Reg no:101
Name:Ashwath
Dob:2001-01-01
Address:Manjeshwara
Class:B
Course:BCA
Menu
---
1. Add student
2. Delete student
3. Update student
4. Search student
5. Exit

Enter your choice
5
Thank u
BUILD SUCCESSFUL (total time: 26 seconds)

/**
PROGRAM: 2 **DATE: 07/05/2024**
NAME: **REG.NO:**
****

Aim: Write a menu driven JDBC program to perform basic operations with Bank Table.

MENU

1. **Add new Account Holder information.**
2. **Amount Deposit**
3. **Amount Withdrawal (Maintain minimum balance 500 Rs)**
4. **Display all information**
5. **Exit**

Bank

ACC_NO	ACC_NAME	ACC_ADDRESS	BALANCE

**********/

```
package bankaccount;
import java.util.*;
import java.sql.*;
import java.util.logging.Level;
import java.util.logging.Logger;
public class BankAccount {
   public static void main(String[] args) throws SQLException {
      Scanner in=new Scanner(System.in);
      Connection con;
      int acc_no;
      String name;
      Statement stmt;
      ResultSet result;
      String sql = "";
      try {
      Class.forName("org.apache.derby.jdbc.ClientDriver");
con=DriverManager.getConnection("jdbc:derby://localhost:1527/Student11","nivedithaa","niv
edithaa");
      stmt=con.createStatement();
      while(true)
      {
         System.out.print("\n *******Transaction Menu******");
         System.out.print("\n Deposit ");
         System.out.print("\n 1.Add Account ");
         System.out.print("\n 2.Deposite:");
         System.out.print("\n 3.Withdraw:");
```

```
System.out.print("\n 4.Display:");
System.out.print("\n 5. Exit ");
System.out.println("Enter the choice:");
int ch=in.nextInt();
switch(ch)
{
case 1:
System.out.print("Enter the Account holders Name:");
name=in.next();
System.out.println("Enter the Account number:");
acc_no=in.nextInt();
System.out.println("Enter the address of the account holder ");
String address=in.next();
System.out.println("Enter the bal_amount");
float bal=in.nextFloat();
sql="INSERT INTO BANKTABLE(ACC_NO,ACC_NAME,ACC_ADDRESS,BALANCE)
values("+acc_no+",'"+name+"','"+address+"',"+bal+")";
stmt.executeUpdate(sql);
break;
case 2:
System.out.println("Enter the account number:");
acc_no=in.nextInt();
System.out.print("\n Enter the amount to be deposited:");
float d=in.nextFloat();
if(d<=0)
System.out.print("\nEnter proper amount.");
else
sql="UPDATE BANKTABLE SET BALANCE=BALANCE + "+d + " Where ACC_no="+acc_no;
stmt.executeUpdate(sql);
break;
case 3:
System.out.println("Enter the account number:");
acc_no=in.nextInt();
System.out.print("\n Enter the amount to be withdrawn:");
float w=in.nextFloat();
if(w<=0)
System.out.print("\n Enter proper amount.");
else{
sql="UPDATE BANKTABLE SET BALANCE=BALANCE - "+w + " Where ACC_no="+acc_no+"
and BALANCE-"+w+" >500";
System.out.println(sql);
int r=stmt.executeUpdate(sql);
if(r==1)
```

```
        System.out.println("Updated successfully!!");
        else
        System.out.println("Cannot withdraw the amount-LOW BALANCE!!");
        }
        break;
        case 4:
        result=stmt.executeQuery("SELECT * FROM BANKTABLE");
        System.out.println("\n\n Acc_no \t\t Name \t\t Address \t\t balance ");
        System.out.println("-----------------------------------------------------------------");
        while(result.next())
        {
        System.out.print((int)result.getInt(1)+"\t\t");
        System.out.print(result.getString(2)+"\t\t");
        System.out.print(result.getString(3)+"\t\t");
        System.out.print((int)result.getInt(4)+"\t\t");
        System.out.print("\n");
        }
        break;
        case 5:
        System.out.print("\n Quiting ....Thank You!!");
        System.exit(0);
        break;
        default: System.out.print("\n Enter proper choice..");
        }
        System.out.print("\n ------------------------------------------------");
        }
      } catch (ClassNotFoundException se) {
        System.out.println("Exception occured while getting connection!!!");
        se.printStackTrace();
        Logger.getLogger(BankAccount.class.getName()).log(Level.SEVERE, null, se);
      }
        // TODO code application logic here
    }
}
```

OUTPUT:

```
run:

*******Transaction Menu******
Deposit
1.Add Account
2.Deposite:
3.Withdraw:
```

```
4.Display:
5. Exit
Enter the choice:
1
Enter the Account holders Name:nivi
Enter the Account number:
1234
Enter the address of the account holder
vittal
Enter the bal_amount
5000

-------------------------------------------------
*******Transaction Menu******
Deposit
1.Add Account
2.Deposite:
3.Withdraw:
4.Display:
5. Exit
Enter the choice:
2
Enter the account number:
1234

Enter the amount to be deposited:500
-------------------------------------------------
*******Transaction Menu******
Deposit
1.Add Account
2.Deposite:
3.Withdraw:
4.Display:
5. Exit
Enter the choice:
4

Acc_no          Name        Address          balance
-------------------------------------------------------------------------------------
1234            nivi        vittal           5500


-------------------------------------------------------------------------------------
```

```
*******Transaction Menu******
 Deposit
 1.Add Account
 2.Deposite:
 3.Withdraw:
 4.Display:
 5. Exit
Enter the choice:
3
Enter the account number:
1234

 Enter the amount to be withdrawn:1000
UPDATE BANKTABLE SET BALANCE=BALANCE - 1000.0 Where ACC_no=1234 and BALANCE-
1000.0 >500
Updated successfully!!

 ------------------------------------------------
*******Transaction Menu******
 Deposit
 1.Add Account
 2.Deposite:
 3.Withdraw:
 4.Display:
 5. Exit
Enter the choice:
4

 Acc_no                Name          Address                balance
-------------------------------------------------------------------------------------
1234                   nivi          vittal                 4500

 ---------------------------------------------------------------------------------------
*******Transaction Menu******
 Deposit
 1.Add Account
 2.Deposite:
 3.Withdraw:
 4.Display:
 5. Exit
Enter the choice:
5
BUILD SUCCESSFUL (total time: 26 seconds)
```

/**

PROGRAM: 3 **DATE: 30/04/2024**

NAME: **REG.NO:**

****

Aim: Write a Java class called Tax with methods for calculating Income Tax. Have this class as a servant and create a server program and register in the rmiregistry. Write a client program to invoke these remote methods of the servant and do the calculations. Accept inputs interactively.

<₹ 3,00,000	No Tax
₹ 3,00,001 to ₹ 6,00,000	5%
₹ 6,00,001 to ₹ 9,00,000	10%
₹ 9,00,001 to ₹ 12,00,000	15%
₹ 12,00,001 to ₹ 15,00,000	20%
>₹ 15,00,000	30%

**********/

Tax.java

```
package incometax;
import java.rmi.*;
public interface Tax extends Remote{
   double calTax(double a) throws RemoteException;
}
```

TaxImpl.java

```
package incometax;
import java.rmi.server.*;
import java.rmi.*;
public class TaxImpl extends UnicastRemoteObject implements Tax{
   public TaxImpl() throws RemoteException
{
}
public double calTax(double income) throws RemoteException
{
   double t;
   if(income<=300000)
      t=0.0;
   else if(income>300001 && income<=600000)
      t=0.05f*(income-300000);
```

```
    else if(income>600001 && income<=900000)
       t=0.10f*(income-600000);
    else if(income>900001 && income<=1200000)
       t=0.15f*(income-900000);
    else if (income>1200001 && income<=1500000)
       t=0.20f*(income-1200000);
    else
       t=0.30f*(income-1500000);
    return t;
 }
}
```

TaxServer.java

```
package incometax;
import java.rmi.*;
import java.rmi.registry.*;
import java.util.logging.Level;
import java.util.logging.Logger;
public class TaxServer {
   public static void main(String args[])
 {
      try {
         TaxImpl timpl=new TaxImpl();
         Registry reg=LocateRegistry.createRegistry(18888);
         reg.rebind("TaxServer", timpl);
         System.out.println("Server is running.......");
      } catch (RemoteException e) {
         System.out.println("Exception in server!! .....");
      }
 }
}
```

TaxClient.java

```
package incometax;
import java.rmi.AccessException;
import java.rmi.NotBoundException;
import java.rmi.RemoteException;
import java.util.*;
import java.rmi.registry.*;
import java.util.logging.Level;
import java.util.logging.Logger;
public class TaxClient {
   public static void main(String args[])
```

```
{
    try {
       double d;
       Scanner sc=new Scanner(System.in);
       Registry reg=LocateRegistry.getRegistry(18888);
       Tax t=(Tax)reg.lookup("TaxServer");
       System.out.println("Enter the Income:");
       d=sc.nextDouble();
       System.out.println("The calculated tax amount is="+t.calTax(d));
    } catch (RemoteException e) {
       System.out.println("Exception in Client.....");
    } catch (NotBoundException ex) {
       Logger.getLogger(TaxClient.class.getName()).log(Level.SEVERE, null, ex);
    }
}
}
```

OUTPUT:

```
run:
Enter the Income:
1000000
The calculated tax amount is=15000.000596046448
BUILD SUCCESSFUL (total time: 9 seconds)
```

/**
PROGRAM: 4 **DATE: 30/04/2024**

NAME: **REG.NO:**

****

Aim: Write a Java class called SimpleInterest with methods for calculating simple interest. Have this class as a servant and create a server program and register in the rmiregistry. Write a client program to invoke these remote methods of the servant and do the calculations. Accept inputs at command prompt.

**/

SimpleInterest.java

```
package simpleinterest;
import java.rmi.*;
public interface SimpleInterest extends Remote{
   double computeSI(double p, double t,double r) throws RemoteException;
}
```

SimpleInterestImp1.java

```
package simpleinterest;
import java.rmi.*;
import java.rmi.server.*;
public class SimpleInterestImp1 extends UnicastRemoteObject implements SimpleInterest {
   public SimpleInterestImp1() throws RemoteException {
 super();
 }
@Override
 public double computeSI(double p, double t, double r) throws RemoteException {
 return (p*t*r/100);
 }
}
```

SimpleInterestServer.java

```
package simpleinterest;
import java.rmi.*;
import java.rmi.registry.*;
public class SimpleInterestServer {
   public static void main(String[] args) throws RemoteException, AlreadyBoundException{
      SimpleInterestImp1 si=new SimpleInterestImp1();
      Registry reg=LocateRegistry.createRegistry(18888);
      reg.bind("SI", si);
      System.out.println("Server is started.....");
   }
}
```

SimpleInterestClient.java

```
package simpleinterest;
import java.rmi.registry.*;
import java.rmi.*;
import java.util.Scanner;
public class SimpleInterestClient {
   public static void main(String[] args) throws RemoteException, NotBoundException {
 Registry reg=LocateRegistry.getRegistry(18888);
 SimpleInterest si = (SimpleInterest) reg.lookup("SI");
 Scanner sc= new Scanner(System.in);
 double p,t,r;
 String ans="n";
 do{
 System.out.println("Simple Interest Calculation");
 System.out.print("Principal: ");
 p= sc.nextDouble();
 System.out.print(" Time: ");
 t=sc.nextDouble();
 System.out.print("Rate: ");
 r=sc.nextDouble();
 System.out.println("Simple Interest is "+si.computeSI(p, t, r));
 System.out.println("Do you want to continue[y/n]?");
 sc.nextLine();
 ans=sc.nextLine();
  }while (ans.toLowerCase().charAt(0) == 'y');
 }
}
```

OUTPUT:

```
Simple Interest Calculation
Principal: 20
 Time: 4
Rate: 50
Simple Interest is 40.0
Do you want to continue[y/n]?
y
Simple Interest Calculation
Principal: 30
 Time: 4
Rate: 50
Simple Interest is 60.0
Do you want to continue[y/n]?
n
BUILD SUCCESSFUL (total time: 3 minutes 23 seconds)
```

/**

PROGRAM: 5 **DATE: 07/05/2024**

NAME: **REG.NO:**

****

Aim: Write a Servlet Program to perform Insert, update and View operations on Employee Table

Employee

Name	Password	Email	Country

Add New Employee

Name: Rahul Kumar
Password: ••••••••
Email: rahulkk@gmail.com
Country: India
Save Employee

view employees

Employees List

Id	Name	Password	Email	Country	Edit
63	Amit Kumar	amtkmjj45	amitkumar@gmail.com	India	edit
61	Rahul Kumar	rahul4000	rahulkk@gmail.com	India	edit
62	Sonoo Jaiswal	sonoobsk	sonoojaiswal1987@gmail.com	India	edit
44	adarsh kumar	kkkkk	adarsh232@gmail.com	India	edit

Update Employee

Name: Amit Kumar Rana
Password: ••••••••
Email: amitkumar12@gmail.com
Country: India
Edit & Save

**/

Index.html

```
<!DOCTYPE html>
<html>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h1>Add Employee</h1>
    <form method="POST" action="AddEmployee">
      <table>
        <tr>
          <td>Name:</td>
          <td><input type="text" name="ename"></td>
        </tr>
```

```
            <tr>
              <td>Password:</td>
              <td><input type="password" name="password"></td>
            </tr>
            <tr>
              <td>Email:</td>
              <td><input type="email" name="email"></td>
            </tr>
            <tr>
              <td>Country:</td>
              <td><select name="country">
                    <option>India</option>
                    <option>Nepal</option>
                    <option>China</option>
                    <option>Sri Lanka</option>
                  </select></td>
            </tr>
            <tr>
              <td></td>
              <td colspan="2"><input type="submit" name="submit" value="Save
Employee"></td>
            </tr>
          </table>
        </form>
        <a href="ViewEmployee">View Employee</a>;
    </body>
</html>
```

AddEmployee.java

```
package com;
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
```

```
@WebServlet(name = "AddEmployee", urlPatterns = {"/AddEmployee"})
public class AddEmployee extends HttpServlet {
   protected void processRequest(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException, SQLException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
         String ename = request.getParameter("ename");
         String password = request.getParameter("password");
         String email = request.getParameter("email");
         String country = request.getParameter("country");
         Class.forName("org.apache.derby.jdbc.ClientDriver");
         Connection con =
DriverManager.getConnection("jdbc:derby://localhost:1527/EMPLOYE", "root", "root");
         Statement stmt = con.createStatement();
         String sql = "INSERT INTO
ROOT.EMPLOYEE(ENAME,PASSWORD,EMAIL,COUNTRY)VALUES('" + ename + "','" + password
+ "','" + email + "','" + country + "') ";
         int rcount = stmt.executeUpdate(sql);
         stmt.close();
         con.close();
         /* TODO output your page here. You may use following sample code. */
         out.println("<!DOCTYPE html>");
         out.println("<html>");
         out.println("<head>");
         out.println("<title>Servlet AddEmployee</title>");
         out.println("</head>");
         out.println("<body>");
         if (rcount == 1) {
            out.println("<h1>Record Saved</h1>");
         } else {
            out.println("<h1>There was an error</h1>");
         }
         out.println("<a href=\"index.html\">Home</a>");
         out.println("<h1>Servlet AddEmployee at " + request.getContextPath() + "</h1>");
         out.println("</body>");
         out.println("</html>");
      } catch (ClassNotFoundException ex) {
         Logger.getLogger(AddEmployee.class.getName()).log(Level.SEVERE, null, ex);
      }
   }
   // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
```

```
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (SQLException ex) {
            Logger.getLogger(AddEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (SQLException ex) {
            Logger.getLogger(AddEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```

ViewEmployee.java

```
package com;
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 java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(name = "ViewEmployee", urlPatterns = {"/ViewEmployee"})
public class ViewEmployee extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
```

```
        throws ServletException, IOException, ClassNotFoundException, SQLException {
    response.setContentType("text/html;charset=UTF-8");
    try (PrintWriter out = response.getWriter()) {
        /* TODO output your page here. You may use following sample code. */
        Class.forName("org.apache.derby.jdbc.ClientDriver");
        Connection con =
DriverManager.getConnection("jdbc:derby://localhost:1527/EMPLOYE", "root", "root");
        Statement stmt = con.createStatement();
        String sql = "SELECT * FROM ROOT.EMPLOYEE";
        ResultSet rs = stmt.executeQuery(sql);
        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet ViewEmployee</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("     <h1>Employee List</h1>");
        out.println(" <table border=\"2\">");
        out.println("    <tr>");
        out.println("       <th>id</th>");
        out.println("       <th>Name</th>");
        out.println("       <th>Password</th>");
        out.println("       <th>Country</th>");
        out.println("    </tr>");
        while (rs.next()) {
          out.println("    <tr>");
          out.println("       <td>" + rs.getString("ID") + "</td>");
          out.println("       <td>" + rs.getString("ENAME") + "</td>");
          out.println("       <td>" + rs.getString("PASSWORD") + "</td>");
          out.println("       <td>" + rs.getString("EMAIL") + "</td>");
          out.println("       <td>" + rs.getString("COUNTRY") + "</td>");
          out.println(" <td>  <a href=\"UpdateEmployee?id=" + rs.getString("ID") + "\">
Edit</a></td>");
          out.println("    </tr>");
        }
        out.println(" </table>");
        out.println("      <a href=\"index.html\">Add new record</a>\n" + "");
        out.println("<h1>Servlet ViewEmployee at " + request.getContextPath() + "</h1>");
        out.println("</body>");
        out.println("</html>");
    }
  }
```

```
    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        } catch (SQLException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        } catch (SQLException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```

UpdateEmployee.java

```
package com;
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 java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
```

```
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(name = "UpdateEmployee", urlPatterns = {"/UpdateEmployee"})
public class UpdateEmployee extends HttpServlet {
   protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException, ClassNotFoundException, SQLException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
         /* TODO output your page here. You may use following sample code. */
         int id = Integer.parseInt(request.getParameter("id"));
         Class.forName("org.apache.derby.jdbc.ClientDriver");
         Connection con =
DriverManager.getConnection("jdbc:derby://localhost:1527/EMPLOYE", "root", "root");
         Statement stmt = con.createStatement();
         String sql = "SELECT * FROM ROOT.EMPLOYEE WHERE ID=" + id;
         ResultSet rs = stmt.executeQuery(sql);
         rs.next();
         out.println("<!DOCTYPE html>");
         out.println("<html>");
         out.println("<head>");
         out.println("<title>Servlet UpdateEmployee</title>");
         out.println("<title>Servlet UpdateEmployee</title>");
         out.println("</head>");
         out.println("<body>");
         out.println("<h1>Servlet UpdateEmployee at " + request.getContextPath() + "</h1>");
         out.println("<H1>Update Employee</H1>");
         out.println(" <form method=\"POST\" action=\"SaveEmployee\">");
         out.println("<input type=\"hidden\" name=\"id\" value=\"" + id + "\">");
         out.println("    <table>");
         out.println("       <tr>");
         out.println("          <td>Name:</td>");
         out.println("          <td><input type=\"text\" name=\"ename\" value=" +
rs.getString("ENAME") + "></td>");
         out.println("       </tr>");
         out.println("        <tr>");
         out.println("          <td>Password:</td>");
         out.println("          <td><input type=\"password\" name=\"password\" value=" +
rs.getString("PASSWORD") + "></td>");
         out.println("       </tr>");
         out.println("        <tr>");
         out.println("          <td>Email:</td>");
```

```
        out.println("           <td><input type=\"email\" name=\"email\" value=" +
rs.getString("EMAIL") + "></td>");
        out.println("       </tr>");
        out.println("        <tr>");
        out.println("           <td>Country:</td>");
        out.println("           <td><select name=\"country\" >");
        String sel = rs.getString("COUNTRY").equals("India") ? "Selected" : "";
        out.println("                <option " + sel + ">India</option>");
        sel = rs.getString("COUNTRY").equals("Nepal") ? "Selected" : "";
        out.println("                <option " + sel + ">Nepal</option>");
        sel = rs.getString("COUNTRY").equals("China") ? "Selected" : "";
        out.println("                 <option " + sel + ">China</option>");
        sel = rs.getString("COUNTRY").equals("Sri Lanka") ? "Selected" : "";
        out.println("                  <option " + sel + ">Sri Lanka</option>");
        out.println("              </select></td>");
        out.println("       </tr>");
        out.println("        <tr>");
        out.println("           <td></td>");
        out.println("           <td colspan=\"2\"><input type=\"submit\" name=\"submit\" value
=\"Edit Emloyee\"></td>");
        out.println("       </tr>");
        out.println("    </table>");
        out.println("    ");
        out.println(" </form>");
        out.println(" <a href=\"ViewEmployee\">View Employees</a>;");
        out.println("</body>");
        out.println("</html>");
    }
  }

  // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
  @Override
  protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    try {
      processRequest(request, response);
    } catch (ClassNotFoundException ex) {
      Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
    } catch (SQLException ex) {
      Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
    }
  }
```

```
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException ex) {
            Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
        } catch (SQLException ex) {
            Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```

SaveEmployee.java

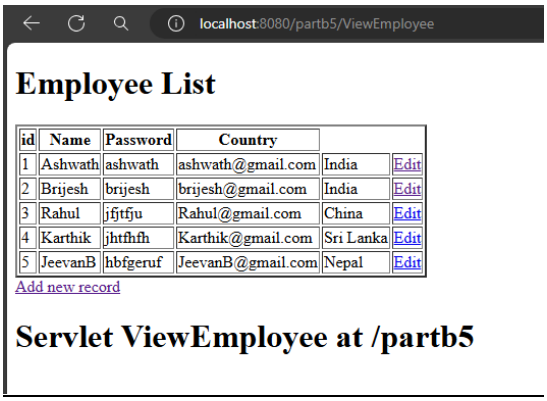
```
package com;
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(name = "SaveEmployee", urlPatterns = {"/SaveEmployee"})
public class SaveEmployee extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException, ClassNotFoundException, SQLException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            String id = request.getParameter("id");
            String ename = request.getParameter("ename");
            String password = request.getParameter("password");
            String email = request.getParameter("email");
```

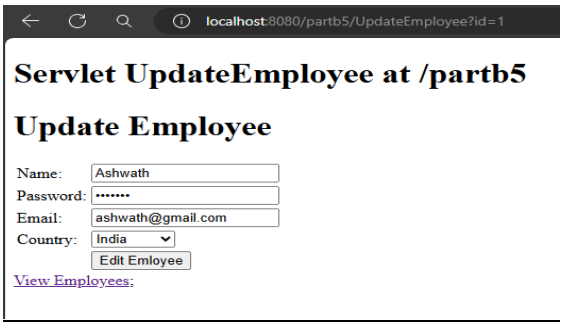
```
        String country = request.getParameter("country");
        Class.forName("org.apache.derby.jdbc.ClientDriver");
        Connection con =
DriverManager.getConnection("jdbc:derby://localhost:1527/EMPLOYE", "root", "root");
        Statement stmt = con.createStatement();
        String sql = "UPDATE ROOT.EMPLOYEE SET ENAME='" + ename + "',PASSWORD='" +
password + "',EMAIL='" + email + "',COUNTRY='" + country + "'  WHERE ID=" + id;
        int rcount = stmt.executeUpdate(sql);
        stmt.close();
        con.close();
        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet SaveEmployee</title>");
        out.println("</head>");
        out.println("<body>");
        if (rcount == 1) {
           out.println("<h1>Record Saved</h1>");
        } else {
           out.println("<h1>There was an error</h1>");
                }
        out.println(" <a href=\"ViewEmployee\">View Employees</a>;");
        out.println("<h1>Servlet SaveEmployee at " + request.getContextPath() + "</h1>");
        out.println("</body>");
        out.println("</html>");
      }
   }

   // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the
left to edit the code.">
   @Override
   protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      try {
        processRequest(request, response);
      } catch (ClassNotFoundException ex) {
        Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
      } catch (SQLException ex) {
        Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
      }
   }
   @Override
   protected void doPost(HttpServletRequest request, HttpServletResponse response)
```

```
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException ex) {
            Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
        } catch (SQLException ex) {
            Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```

OUTPUT:





/**
PROGRAM: 6 **DATE: 30/04/2024**
NAME: **REG.NO:**
****

Aim: Write a java JSP program to get student information through a HTML and create a JAVA Bean Class, populate Bean and Display the same information through another JSP

**/

Student11.java

```
package com;
import java.io.Serializable;
public class Student11 implements Serializable  {
private String regNo;
   private String name;
   private String course;
   private String sem;
   public Student11() {
   }
   public String getRegNo() {
      return regNo;
   }
   public void setRegNo(String regNo) {
      this.regNo = regNo;
   }
   public String getName() {
      return name;
   }
   public void setName(String name) {
      this.name = name;
   }
   public String getCourse() {
      return course;
   }
   public void setCourse(String course) {
      this.course = course;
   }
   public String getSem() {
      return sem;
   }
   public void setSem(String sem) {
      this.sem = sem;
   }
}
```

Index.html

```
<html>
  <head>
    <title>Student info</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h2>Enter student details</h2>
    <form method="POST" action="firstpage.jsp">
      <table>
        <tr>
          <td>Register No:</td>
          <td><input type="text" name="regno"></td>
        </tr>
        <tr>
          <td>Name:</td>
          <td><input type="text" name="sname"></td>
        </tr>
        <tr>
          <td>Course:</td>
          <td><input type="text" name="course"></td>
        </tr>
        <tr>
          <td>Semester:</td>
          <td><input type="text" name="sem"></td>
        </tr>
        <tr>
          <td></td>
          <td><input type="submit" name="subBtn" value="Register"></td>
        </tr>
      </table>
    </form>
  </body>
</html>
```

Firstpage.jsp

```
<%@page import="com.Student11" %>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
    <title>first JSP Page</title>
  </head>
  <body>
    <h1>Student Details are saved</h1>
    <jsp:useBean id="std" scope="session" class="com.Student11" >
      <jsp:setProperty name="std" property="regNo" value="${param.regno}"/>
      <jsp:setProperty name="std" property="name" value="${param.sname}"/>
      <jsp:setProperty name="std" property="course" value="${param.course}"/>
      <jsp:setProperty name="std" property="sem" value="${param.sem}"/>
    </jsp:useBean>
     <h2><a href="secondpage.jsp">View Student details </a></h2>
  </body>
</html>
```

Secondpage.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Second JSP Page</title>
  </head>
  <body>
    <h1>Student Details are</h1>
    <table>
        <tr>
          <td>Register No:</td>
          <td><c:out value="${std.regNo}"/></td>
        </tr>
        <tr>
          <td>Name:</td>
          <td><c:out value="${std.name}"/></td>
        </tr>
         <tr>
          <td>Course:</td>
          <td><c:out value="${std.course}"/></td>
        </tr>
         <tr>
          <td>Semester:</td>
          <td><c:out value="${std.sem}"/></td>
        </tr>
      </table>
```

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

OUTPUT:

Enter student details

Register No: 003
Name: nivi
Course: bca
Semester: 6
Register

Student Details are saved

View Student details

Student Details are

Register No: 003
Name: nivi
Course: bca
Semester: 6

/**
PROGRAM: 7 **DATE: 30/04/2024**
NAME: **REG.NO:**
****
Aim: Write a menu driven program to create a linked list and perform the following operations
**/

```
package linkedlistdemo;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.LinkedList;
import java.util.Scanner;
public class LinkedlistDemo {
   public static void main(String[] args) {
      LinkedList <Integer> flist=new  LinkedList<Integer>();
   LinkedList <Integer> slist=new  LinkedList<Integer>();
   Scanner in =new Scanner(System.in);
   char choice='x';
   int num,pos,fpos,spos;
   do{
   System.out.println("Menu");
   System.out.println(".....");
   System.out.println("a. Insert a element");
   System.out.println("b. swap element");
   System.out.println("c. Iterate in Reverse");
   System.out.println("d. Compare two list");
   System.out.println("e. Convert to Array list");
   System.out.println("x. Exit");
   System.out.println("-----------------");
   System.out.println("Enter your choice->");
   choice=in.next().toLowerCase().charAt(0);
   switch(choice)
   {
      case 'a':
         if(flist.size()>0)
         {
         System.out.println("Elements in the list:"+flist);
            }else{
            System.out.println("List is Empty");
         }
         System.out.println("Enter the position");
         pos=in.nextInt();
         if(pos<0)
         {
```

```
        System.out.println("Error! Enter a positive number");
        }
        else if((flist.size()>0 && pos<=flist.size()+1)||(pos==1))
        {
          System.out.print("Enter a number");
          num=in.nextInt();
          flist.add(pos-1,num);
          System.out.println("Element"+num+"is inserted at"+pos);
        }else
        {
          System.out.println("Enter proper position value");
        }
        break;
      case 'b':
        System.out.print("Original List is"+flist);
        System.out.print("Enter the position of the elements to be swapped");
        System.out.print("First element position");
        fpos=in.nextInt();
        System.out.print("Second elements position");
        spos=in.nextInt();
        if(fpos<0 && spos<=0)
        {
          System.out.println("Error! Use positive value for positions\n");
        }else if((fpos>flist.size())&&(spos>flist.size()))
        {
          System.out.println("Error! Enter the positive value for position\n");
        }else
        {
        int n1=flist.get(fpos-1);
        int n2=flist.get(spos-1);
        flist.set(spos-1,n1);
        flist.set(fpos-1,n2);
        System.out.println("Elements are swapped\n");
        System.out.println("New list is "+flist);
        }
        break;
      case 'c':
        System.out.println("Original list is"+flist);
        System.out.println("Reversed list is");
        for(Iterator it =flist.descendingIterator();it.hasNext();)
        {
        System.out.print(it.next()+" ");
        }
```

```
        System.out.println("]");
        break;
      case 'd':
        slist=(LinkedList<Integer>) flist.clone();
        slist.add(999);
        if(flist.equals(slist))
        {
        System.out.println("List are equal");
        }else{
           System.out.println("List are not equal");
        }
        break;
      case 'e':
        ArrayList<Integer>alst=new ArrayList<Integer>(flist);
        System.out.println("Element in the array list are");
        System.out.println(alst);
        break;
      case 'x':
        System.out.println("Thank you");
      return;
      default:
        System.out.println("Wrong Choice....\n Try Again!");
   }
   }while(true);
      }
}
```

OUTPUT:

```
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
-----------------
Enter your choice->
a
List is Empty
Enter the position
1
Enter a number4
Element4is inserted at1
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
-----------------
Enter your choice->
a
Elements in the list:[4]
Enter the position
2
```

```
Enter a number5
Element5is inserted at2
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
a
Elements in the list:[4, 5]
Enter the position
3
Enter a number2
Element2is inserted at3
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
a
Elements in the list:[4, 5, 2]
Enter the position
1
Enter a number9
Element9is inserted at1
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
a
Elements in the list:[9, 4, 5, 2]
Enter the position
3
Enter a number7
Element7is inserted at3
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
d
List are not equal
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
e
Element in the array list are
[9, 4, 7, 5, 2]
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
c
```

```
Original list is[9, 4, 7, 5, 2]
Reversed list is
2 5 7 4 9 ]
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
b
Original List is[9, 4, 7, 5, 2]
Enter the position of the elements to be swapped
First element position2
Second elements position1
Elements are swapped

New list is [4, 9, 7, 5, 2]
Menu
.....
a. Insert a element
b. swap element
c. Iterate in Reverse
d. Compare two list
e. Convert to Array list
x. Exit
----------
Enter your choice->
x
Thank you
BUILD SUCCESSFUL (total time: 5 minutes 33 seconds)
```

/**

PROGRAM: 8 **DATE: 07/05/2024**

NAME: **REG.NO:**

****

Aim: Implement a java application based on the MVC design pattern. Input student Rollno, name,marks in three subject calculate result and grade and display the result in neat format.

Percentage of Marks	Grade
Above 90%	A
80% to 90%	B
70% to 80%	C
60% to 70%	D
Below 60%	E

**/

StudentModel.java

```
package mvcstudentresult1;
public class StudentModel {
   private String rolno, name;
   private int m1, m2, m3;
   public StudentModel(String rolno, String name, int m1, int m2, int m3) {
      this.rolno = rolno;
      this.name = name;
      this.m1 = m1;
      this.m2 = m2;
      this.m3 = m3;
   }
   public String getRolno() {
      return rolno;
   }
   public void setRolno(String rolno) {
      this.rolno = rolno;
   }
   public String getName() {
      return name;
   }
   public void setName(String name) {
      this.name = name;
   }
   public int getM1() {
      return m1;
   }
   public void setM1(int m1) {
```

```
    this.m1 = m1;
  }
  public int getM2() {
    return m2;
  }
  public void setM2(int m2) {
    this.m2 = m2;
  }
  public int getM3() {
    return m3;
  }
  public void setM3(int m3) {
    this.m3 = m3;
  }
  public String getResult() { String result = "";
if (m1 < 35 || m2 < 35 || m3 < 35) { result = "Fail";
} else {
double per = (((m1 + m2 + m3) * 100) / 300); if (per >= 75) {
result = "Distinction";
} else if (per >= 60) { result = "First Class";
} else if (per >= 50) {
result = "Second class";
} else if (per >= 35) { result = "Third class";
} else {
result = " F Fail";
}
}
return result;
}
public String GetGrade() {
double per = (((m1 + m2 + m3) * 100) / 300); String grade = "";
if (per >= 90) { grade = "A";
} else if (per >= 80) { grade = "B";
} else if (per >= 70) { grade = "C";
} else if (per >= 60) { grade = "D";
} else {
grade = "E";
}
return grade;
}
}
```

StudentView.java

```
package mvcstudentresult1;
public class StudentView {
   public void displayResult(String rNo,String sName,int m1,int m2,int m3,String result,String
grade)
{
System.out.println("     ");
System.out.println("ROLL NO\t NAME\t\tMARK1\tMARK2\tMARK3\tRESULT\tGRADE");
System.out.println(rNo+"\t"+sName+"\t\t"+m1+"\t"+m2+"\t"+m3+"\t"+result+"\t "+grade);
System.out.println("     ");
}
}
```

StudentController.java

```
package mvcstudentresult1;
public class StudentController {
   private StudentModel model;
   private StudentView view;
   public StudentController(StudentModel model, StudentView view) {
      this.model = model;
      this.view = view;
   }
   public void UpdateView()
{
view.displayResult(model.getRolno(),model.getName(),model.getM1(),
model.getM2(),model.getM3(),model.getResult(),model.GetGrade());
}
}
```

MVCStudentResult.java

```
package mvcstudentresult1;
import java.util.Scanner;
public class MVCStudentResult {
   public static void main(String[] args) { String rNo,sName;
int m1,m2,m3;
Scanner in=new Scanner(System.in);
System.out.print("Enter Roll No:");
rNo=in.nextLine();
System.out.print("Enter Name:");
sName=in.nextLine();
System.out.print("Marks in three subjects:");
m1=in.nextInt();
m2=in.nextInt();
```

```
m3=in.nextInt();
StudentModel sm=new StudentModel(rNo,sName,m1,m2,m3);
StudentView sv=new StudentView();
StudentController sc=new StudentController(sm,sv);
sc.UpdateView();
}
}
```

OUTPUT:

```
run:
Enter Roll No:11
Enter Name:nivi
Marks in three subjects:100 100 100

ROLL NO   NAME      MARK1     MARK2     MARK3      RESULT        GRADE
11          nivi        100         100         100        Distinction        A

BUILD SUCCESSFUL (total time: 21 seconds)
```