JAVA LAB- EXP 8

-19BCE1709 AISHWARYA S

1.

```
import java.util.*;
import java.io.*;
import java.lang.*;
import java.lang.*;
import java.time.*;
import java.text.*;
import java.time.format.DateTimeFormatter;
class blood_donor implements Serializable
{ private static final long serialVersionUID = 1L;
    String name;
  String address;
  String bgroup;
  String contact;
  int age;
  String d;
   void details ()
   {  Scanner s= new Scanner(System.in);
   System.out.print("Name: ");
   this.name=s.nextLine();

   System.out.print("Blood Group: ");
   this.bgroup=s.nextLine();

   System.out.print("Age: ");
   this.age=Integer.parseInt(s.nextLine());



   System.out.print("Contact Number: ");
   this.contact=s.nextLine();

   System.out.print("Address: ");
   this.address=s.nextLine();

   System.out.print("Date of last donation(dd/mm/yyyy): ");
```

```
   this.d=s.nextLine();
   }

  public String toString() {
       return new StringBuffer("\nName: ").append(this.name).append("\nBlood
Group: ").append(this.bgroup).append("\nAGE:
").append(this.age).append("\nContact:
").append(this.contact).append("\nAddress:
").append(this.address).append("\nDate of last donation:
").append(this.d).append("\n").toString();
   }

}

class lab8
{  private static final String filepath="/Users/aishwarya/Desktop/donor";

    public void wfile(ArrayList<blood_donor> bd)

   {
       try {
           FileOutputStream f = new FileOutputStream(filepath);
           ObjectOutputStream objectOut = new ObjectOutputStream(f);
           objectOut.writeObject(bd);
           objectOut.close();
             f.flush();
           System.out.println("Objects were written to the file");
       }

       catch (Exception ex) {
           ex.printStackTrace();
       }
   }


   public void rfile(String filepath)
   {
       try
       { System.out.println("\nReading objects from the file\nDisplaying
donor details that satisfy the conditions\n");
               String b= "B+";
        FileInputStream f=new FileInputStream(filepath);
       ObjectInputStream o =new ObjectInputStream(f);

        ArrayList<blood_donor>don= new ArrayList<>();
```

```
        don=(ArrayList<blood_donor>)o.readObject();
        for(int i=0;i<don.size();i++)
        {
          LocalDate check = LocalDate.now().minusDays(183);
          DateTimeFormatter formatter =
DateTimeFormatter.ofPattern("dd/MM/uuuu", Locale.ENGLISH);
          LocalDate date = LocalDate.parse(don.get(i).d, formatter);
          if(date.isBefore(check)&&b.equals(don.get(i).bgroup))
            {System.out.print(don.get(i).toString());

        }

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


    public static void main(String args[])
    {  System.out.print("Aishwarya S 19BCE1709\n");
        Scanner s= new Scanner(System.in);
         lab8 l= new lab8();
        System.out.print("Enter the number of donors: ");
        int n= s.nextInt();
        ArrayList<blood_donor>bd= new ArrayList<>();
        blood_donor b;
      File file = new File("/Users/aishwarya/Desktop/donor");
      for(int i=0;i<n;i++)
        {    System.out.print("\nDonor Details:\n");
            b= new blood_donor();
             b.details();
            bd.add(b);

        }


    l.wfile(bd);
       l.rfile(filepath);
    }

}
```

OUTPUT:

```
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab8
Aishwarya S 19BCE1709
Enter the number of donors: 5

Donor Details:
Name: Amira
Blood Group: B+
Age: 34
Contact Number: 9884412345
Address: Anna Nagar, Chennai
Date of last donation(dd/mm/yyyy): 12/12/2012

Donor Details:
Name: Sara
Blood Group: AB+
Age: 20
Contact Number: 9884425501
Address: Pallavaram, Chennai
Date of last donation(dd/mm/yyyy): 04/05/2009

Donor Details:
Name: Ram
Blood Group: B+
Age: 33
Contact Number: 9884053533
Address: Adyar, Chennai
Date of last donation(dd/mm/yyyy): 12/01/2021

Donor Details:
Name: Mira
Blood Group: O-
Age: 21
Contact Number: 9887732121
Address: Velachery, Chennai
Date of last donation(dd/mm/yyyy): 13/09/2019

Donor Details:
Name: Kiran
Blood Group: B+
Age: 28
Contact Number: 9884094855
Address: Vadapalani, Chennai
Date of last donation(dd/mm/yyyy): 09/09/2004
Objects were written to the file

Reading objects from the file
Displaying donor details that satisfy the conditions


Name: Amira
Blood Group: B+
AGE: 34
Contact: 9884412345
Address: Anna Nagar, Chennai
Date of last donation:  12/12/2012

Name: Kiran
Blood Group: B+
AGE: 28
Contact: 9884094855
Address: Vadapalani, Chennai
Date of last donation:  09/09/2004
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```

2.

```
import java.util.*;
import java.io.*;
import java.lang.*;
import java.lang.*;
import java.time.*;
import java.text.*;
import java.time.format.DateTimeFormatter;
class students implements Serializable
{ private static final long serialVersionUID = 1L;
    String rno;
    double t;
    double[] marks= new double[5];
    int rank;
   String d;
   students(String rno, String m[] )
   {  this.rno=rno;
    t=0;
      for(int i=0;i<5;i++)
        { try{
            this.marks[i] =Double.parseDouble(m[i]);
        }catch(Exception e)
            {
                 this.marks[i]=0;
            }
           t=this.marks[i]+t;
        }
        rank=0;
   }


public String toString() {
      StringBuffer s= new StringBuffer("\nReg No: ").append(this.rno);

      for(int i=1;i<=5;i++)
      {
        s.append("\nm").append(i).append(": ").append(this.marks[i-1]);
     }
   return s.append("\nTotal:
").append(t).append("\nRank:").append(rank).append("\n").toString();
}
void assign_rank(int i)
```

```
 {
     this.rank=i;
 }
}

class lab82
{

   private static final String filepath="/Users/aishwarya/Desktop/stu";

   void compute(ArrayList<students> stu)
   {    int i=1;;
      Collections.sort(stu, new Comparator<students>()
       {
   @Override
   public int compare(students c1, students c2) {
       return Double.compare(c1.t, c2.t);
   }
});
for(students s: stu)
    {
        s.assign_rank(i);
    }

    }
    public void wfile(ArrayList<students> stu)

   {
       try {
           FileOutputStream f = new FileOutputStream(filepath);
           ObjectOutputStream objectOut = new ObjectOutputStream(f);
           objectOut.writeObject(stu);
           objectOut.close();
             f.flush();
           System.out.println("Objects were written to the file");
       }

       catch (Exception ex) {
           ex.printStackTrace();
       }
   }


   public void rfile(String filepath)
   {
```

```
        try
        { System.out.println("\nReading objects from the file\nDisplaying
details of the topper\n");
                String b= "B+";
         FileInputStream f=new FileInputStream(filepath);
        ObjectInputStream o =new ObjectInputStream(f);

         ArrayList<students>don= new ArrayList<>();

        don=(ArrayList<students>)o.readObject();

            int t= don.size()-1;
            System.out.print(don.get(t).toString());




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



    public static void main(String args[])
    {  System.out.print("Aishwarya S 19BCE1709\n");
        Scanner s= new Scanner(System.in);
         lab82 l= new lab82();
        System.out.print("Enter the number of students: ");
        int n= s.nextInt();
        s.nextLine();
        ArrayList<students>stu= new ArrayList<>();
        students b;

        String[] m= new String[5];
        String rno;
```

```
      File file = new File("/Users/aishwarya/Desktop/stu");
      for(int i=0;i<n;i++)
        {     System.out.print("\nStudent Details:\n");

              System.out.print("Enter the registration Number: ");
              rno=s.nextLine();
              System.out.print("Enter the marks: ");
              m= s.nextLine().split("\s+");
             b= new students(rno, m);
             stu.add(b);

        }









l.compute(stu);

   l.wfile(stu);
   l.rfile(filepath);
   }




}
```

OUTPUT:

```
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % javac lab82.java
Note: lab82.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop % java lab82
Aishwarya S 19BCE1709
Enter the number of students: 10

Student Details:
Enter the registration Number: B1
Enter the marks: 65 65 70 80 90

Student Details:
Enter the registration Number: B2
Enter the marks: 90 90 90 90 80

Student Details:
Enter the registration Number: B3
Enter the marks: 12 10 10 10 10

Student Details:
Enter the registration Number: B4
Enter the marks: 95 100 95 97 98

Student Details:
Enter the registration Number: B5
Enter the marks: 100 50 50 70 80

Student Details:
Enter the registration Number: B6
Enter the marks: 75 75 75 65 65

Student Details:
Enter the registration Number: B7
Enter the marks: 10 10 10 10 10

Student Details:
Enter the registration Number: B8
Enter the marks: 40 40 40 40 40

Student Details:
Enter the registration Number: B9
Enter the marks: 89 89 89 89 79

Student Details:
Enter the registration Number: B10
Enter the marks: 30 30 30 30 30
Objects were written to the file

Reading objects from the file
Displaying details of the topper


Reg No: B4
m1: 95.0
m2: 100.0
m3: 95.0
m4: 97.0
m5: 98.0
Total: 485.0
Rank:1
(base) aishwarya@Aishwaryas-MacBook-Pro Desktop %
```