RAJALAKSHMI ENGINEERING COLLEGERAJALAKSHMINAGAR,THAND ALAM– 602 105

CS23333 Object Oriented Programming Using Java

Laboratory Record Notebook

Name: Akaash sai K.S

Year / Branch / Section: 2nd year / B.Tech AIML – ' A'

UniversityRegisterNo: 2116231501009

CollegeRollNo: 231501009

Semester: IIIrdSemester

AcademicYear: 2023 - 2024

Dashboard/Mycourses/CS23333- OOPUJ- 2023/Lab- 01- JavaArchitecture,LanguageBasics/Lab- 01- LogicBuilding

StatusFinished

StartedThursday,19September2024,11:12AM
CompletedThursday,19September2024,11:22AM

Duration10mins41secs

Question1

Correct

Markedoutof5.00

Writeaprogramtofindwhetherthegiveninputnumberisodd.

Ifthegivennumberisodd,theprogramshouldreturn2elseItshouldreturn1.

Note:Thenumberpassedtotheprogramcaneitherbenegative.positiveorzero.ZeroshouldNOTbetreatedasOdd.

Forexample:

Input	Result
123	2
456	1

Answer:(penaltyregime:0%)

```
1 import java.io.*;
  import java.util.*;
2
```

```
3   publicclassOdd{
4publicstaticvoidmain(String[]args)
5   {
6Scannersc=newScanner(System.in);
7inta=sc.nextInt();
8if(a% 2==1||a% 2==- 1)
9   {
10System.out.println(2);
11}
12elseif(a% 2==0)
13   {
14System.out.println(1);
15}
16elseif(a==0)
17   {
18System.out.println(1);
19}
20}
21}
```

	Input	Expected	Got	
✓	123	2	2	✓
✓	456	1	1	✓

Passed all tests!✓

Write a program that returns the last digit of the given number. Last digit is being referred to the least significant digit i.e. the digit in the ones (units) place in the given number.

The last digit should be returned

as a positive number. For

example,

if the given number is

197, the last digit is 7if the

given number is - 197, the

last digit is 7 For example:

In	Re

put	sult
197	7
-197	7

Answer:(penaltyregime:0%)

```
1  importjava.io.*;
   importjava.util.*;
2
3     importjava.math.*;
4        publicclassLast{
5     publicstaticvoidmain(String[]args)
6   {
ersc=newScanner(System.in);
c.nextInt();
h.abs(a);
m.out.println(a% 10);
   11}
   12}
```

	Input	Expected	Got	
✓	197	7	7	✓
✓	-197	7	7	✓

Passed all tests!✓

Question3

Correct

Markedoutof 5.00

Rohit wants to add the last digits
of two given numbers. For
example,
If the given numbers are 267 and 154,
the output should be 11. Below is the
explanation:
Lastdigitofth
e267is7
Lastdigitofth
e154is4
Sum of 7
and 4 = 11
W rite a program to help Rohit achieve this
for any given two numbers. Note: Tile sign
of the input numbers should be ignored.
i.e.
iftheinputnumbersare267and154,thesumoflastt
wodigitsshouldbe11 if the input numbers are
267 and - 154, the slim of last two digits should
be 11if the input numbers are - 267 and 154, the
sum of last two digits should be
11iftheinputnumbersare- 267and- 154,thesumofl
asttwodigitsshouldbe11

Forexample:

In p ut	Re sul t
2 6 7 15 4	11
2	11

6 7 - 1 5 4	
- 2 6 7 15 4	11
- 2 6 7 - 1 5 4	11

Answer:(penaltyregime:0%)

```
1  import
   java.io.*;
   importjava.util
2  .*;
   importjava.ma
3  th.*; public
   class add{
4      publicstaticvoidmain(String[]args)
       {
           Scanner sc=new
5          Scanner(System.in); int
           a=sc.nextInt();
6          intb=sc.nextI
           nt();
           a=Math.abs(
7          a);
           b=Math.abs(b);
8          int c=(a% 10)+(b% 10);
           System.out.println(c);
9      }
   }
1
0
1
1
1
2
```

13 14 15	

	Input	Expected	Got	
✓	267 154	11	11	✓
✓	267 -154	11	11	✓
✓	-267 154	11	11	✓
✓	-267 -154	11	11	✓

Passed all tests!✓

Lab- 01- MCQ

Jumpto...

IsEven?

StatusFinished

StartedSaturday,21September2024,10:12AM
CompletedSaturday,21September2024,10:57AM

Duration45mins42secs

Question1
Correct
Markedoutof 5.00

Writeaprogramthattakesasparameteranintegern.
Youhavetoprintthenumberofzerosattheendofthefactorialofn.

For example, 3! = 6. The number of zeros are 0. 5! = 120.

The number of zeros at the end are 1. Note: n! < 10^ 5
ExampleInput:
3
Output:
0
ExampleInput:
60
Output:
14
ExampleInput:
100
Output:
24
ExampleInput:
1024
Output:

253

Forexample:

Input	Result
3	0
60	14
100	24
1024	253

Answer:(penaltyregime:0%)

Reset answer

```
1  //Javaprogramtocounttrailing0sinn!
2  importjava.io.*;
3  importjava.util.*;
4  classprog{
5      //Functiontoreturntrailing
6      //0sinfactorialofn
7      staticintfindTrailingZeros(intn)
8      {
9          intcount=0;
10         if(n<0)//NegativeNumberEdgeCase
11             return- 1;
12
13         //Initializeresult
14
15
16         //Keepdividingnbypowers
17         //of5andupdatecount
```

```
        for(inti=5;n/i>=1;i*=5)
            count+=n/i;

        returncount;
    }

```

```
//DriverCode

publicstaticvoidmain(String []args)
{

    intn;

    Scannersc=newScanner(System.in);

    n=sc.nextInt();

    intx=findTrailingZeros(n);

    System.out.println(x);
}

```

	Input	Expected	Got	
✓	3	0	0	✓
✓	60	14	14	✓
✓	100	24	24	✓
✓	1024	253	253	✓

Passed all tests! ✓

Question2
Correct
Marked out of 5.00

Write a Java program to input a number from user and print it into words using for loop. How to display number in words using loop in Java programming.

Logic to print number in words in Java programming.

Example

Input

1234

Output

OneTwoThreeFour

Input:

16

Output:

onesix

Forexample:

Test	Input	Result
1	45	FourFive
2	13	OneThree
3	87	EightSeven

Answer:(penaltyregime:0%)

```
import
java.io.*;
importjava.util
.*; public
class Num{
    publicstaticvoidmain(String[]args)
    {
        Scanner sc=new
        Scanner(System.in); int
        n=sc.nextInt();
        Stringst=Integer.toStrin
        g(n); char[]
        arr=st.toCharArray();
        for(int
        i=0;i<arr.length;i++)
        {
            switch(arr[i])
            {
                case'0':
                    System.out.print("Z
                    ero"); break;
                case'1':
                    System.out.print("O
                    ne"); break;
                case'2':
                    System.out.print("T
                    wo"); break;
                case'3':
                    System.out.print("T
                    hree"); break;
                case'4':
```

```
                System.out.print("F
                our"); break;
            case'5':
                System.out.print("Fi
                ve"); break;
            case'6':
                System.out.print("Si
                x"); break;
            case'7':
                System.out.print("S
                even"); break;
            case'8':
                System.out.print("Ei
                ght"); break;
            case'9':
                System.out.print("Nine");
```

```
4
3
4
```

	Test	Input	Expected	Got	
✓	1	45	FourFive	FourFive	✓
✓	2	13	OneThree	OneThree	✓
✓	3	87	EightSeven	EightSeven	✓

Passed all tests! ✓

Question 3
Correct
Marked out of 5.00

Considerthefollowingsequence:

1stterm:1

2ndterm:121

3rdterm:1213121

4thterm:1213121412131 21

And so on. W rite a program that takes as parameter an integer n and prints the nth terms of this sequence. Example Input:

1

Output:

1

ExampleInput:

4

Output:

1 2131214 1213121

Forexample:

In p ut	Result
1	1
2	1 21
3	1 2131 21
4	1 2131 2141 21312 1

Answer:(penaltyregime:0%)

```
1 importjava.io.*;
```

```
    2     importjava.util.*;
    3        publicclasspattern{
    4     publicstaticvoidmain(String[]args)
    5   {
ersc=newScanner(System.in);
c.nextInt();
res="1";
i=1;i<n;i++)
   10   {
   11res+=""+(i+1)+""+res;
   12}
   13System.out.println(res);
   14}
   15}
```

	Input	Expected	Got	
✓	1	1	1	✓
✓	2	1 21	1 21	✓

	Input	Expected	Got	
✓	3	1 2131 21	1 2131 21	✓
✓	4	1 2131 2141 21312 1	1 2131 2141 21312 1	✓

Passed all tests!✓

StatusFinished

StartedSunday, 22 September 2024,8:33 PM
CompletedSunday, 22 September 2024,9:43 PM

Duration1 hour 9 mins

Question1
Correct
Markedoutof5.00

Youareprovidedwithasetofnumbers(arrayofnumbers).

Youhavetogeneratethesumofspecificnumbersbasedonitsposition inthearraysetprovidedtoyou. This is explained below:

Example 1:

Let us assume the encoded set of numbers given to you is:

input1:5 and input2: {1, 51, 436, 7860, 41236}

Step1:

Startingfrom the0thindexof thearray pickup digitsas per below:

0th index – pick up the units value of the number (in this case is 1). 1st index- pickupthetensvalueofthenumber(inthisc aseitis5).

2nd index - pick up the hundreds value of the number (in this case it is 4). 3rdindex - pick up the thousands value of the number (in this case it is 7).

4thindex- pickupthetenthousandsvalueofthenumber(inthis caseitis4). (Continue this for all the elements of the input array).

Thearray generatedfrom Step1 will thenbe – {1, 5,4, 7, 4}.

Step2:

Squareeachnumber presentin thearraygenerated inStep 1.

{1, 25, 16, 49, 16}

Step3:

Calculatethesumofallelementsofthearraygeneratedin Step2togetthefin

alresult.Theresultwillbe=107. Note:

1) Whilepicking up anumber in Step1, ifyou observe thatthe number is smallerthan the requiredposition then use 0.

2) Inthegivenfunction,input1[]isthearrayofnumbersandinput2represe

ntsthenumberofelementsininput1. Example 2:

input1: 5 and input1: {1, 5, 423, 310, 61540}

Step1:

Generating the new array based on position, we get the below array:

{1, 0, 4, 0, 6}

Inthiscase,thevalueininput1atindex1and3islessthanthevaluerequiredtobepickedu

pbasedonposition,soweusea0. Step 2:

{1, 0, 16, 0, 36}

Step3:

The final result = 53.

For example:

Input	Result
5 1 51 436 7860 41236	107
5 1 5 423 310 61540	53

Answer:(penaltyregime:0%)

```
1  import
   java.io.*;
   importjava.util.
2  *;
   public class arraysp{
3      public static void main(String[] args)
       {
           Scanner sc=new Scanner(System.in);
4
5
```

```
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```

```
int sum=0;
int n=sc.nextInt();
int[] arr=new int[n];
for(inti=0;i<n;i++)
{
    arr[i]=sc.nextInt();
}
int[] p=new int[n];
for(inti=0;i<n;i++)
{
    p[i]=(arr[i]/(int)
    Math.pow(10,i)) % 10;
}
for(inti:p)
{
    sum+=i*i;
}
System.out.println(sum);
```

24		}	
25	}		

	Input	Expected	Got	
✓	5 1 51 436	107	10	✓

Passed all tests!✓

Question2

Correct

Given an integer array as input, perform the following operations on the array, in the below specified sequence.

1.Find the maximum number in the array.

2.Subtract the maximum number from each element of the array.

3. Multiplythemaximumnumber(foundinstep1)toeach elementoftheresultantarray. After the operations are done, return the resultant array.

Example 1:

input1=4(representsthenumberofeleme ntsintheinput1array) input2 = {1, 5, 6, 9}

ExpectedOutput={- 72,- 36,27,0}

Explanation:

Step1:The maximumnumber inthegiven arrayis 9.

Step2: Subtractingthe maximumnumber 9from eachelement ofthe array:

{(1 - 9), (5 - 9), (6 - 9), (9 - 9)} = {- 8, - 4, - 3, 0}

Step3: Multiplyingthe maximumnumber 9to eachof theresultant array:

{(- 8 x 9), (- 4 x 9), (3 x 9), (0 x 9)} = {- 72, - 36, - 27, 0}

So, the expected output is the resultant array {- 72, - 36, - 27, 0}.

Example 2:

input1=5(representsthenumberofelemen

tsintheinput1array) input2 = {10, 87, 63,

42, 2}

Expected Output = {- 6699, 0, - 2088, - 3915, - 7395}

Explanation:

Step1:The maximumnumber inthegiven arrayis 87.

Step2: Subtractingthe maximumnumber 87from eachelement ofthe array:

{(10 - 87), (87 - 87), (63 - 87), (42 - 87), (2 - 87)} = {- 77, 0, - 24, - 45, - 85}

Step3: Multiplyingthe maximumnumber 87to eachof theresultant array:

{(- 77 x 87), (0 x 87), (- 24 x 87), (- 45 x 87), (- 85 x 87)} = {- 6699, 0, - 2088, - 3915, - 7395}

So, the expected output is the resultant array {- 6699, 0, - 2088, - 3915, - 7395}.

Example 3:

input1=2(representsthenumberofelemen

tsintheinput1array) input2 = {- 9, 9}

Expected Output = {- 162, 0}

Explanation:

Step1:The maximumnumber inthegiven arrayis 9.

Step2: Subtractingthe maximumnumber 9from eachelement ofthe array:

{(- 9 - 9), (9 - 9)} = {- 18, 0}

Step3: Multiplyingthe maximumnumber 9to eachof theresultant array:

{(- 18 x 9), (0 x 9)} = {- 162, 0}

So, the expected output is the resultant array {- 162, 0}.

Note: The input array will contain not more than 100 elements

For example:

Input	Result
4 1 5 6 9	- 72 - 36 - 27 0

Input	Result
5 10 87 63 42 2	- 6699 0 - 2088 - 3915 - 7395

2 - 9 9	- 162 0

Answer:(penaltyregime:0%)

```
import
java.io.*;
importjava.util.
*;
public class arraychange{
    public static void main(String[] args)
    {
        Scannersc=newScanner(
        System.in); int
        n=sc.nextInt();
        int[]arr=newint[
        n]; for(int
        i=0;i<n;i++)
        {
            arr[i]=sc.nextInt();
        }
        int max=0;
        for(inti=0;i<n;i++)
        {
            if (arr[i]>max)
            {
                max=arr[i];
            }
        }
        for(inti=0;i<n;i++)
        {
            arr[i]-
            =max;
            arr[i]*=max;
        }
        for(inti=0;i<n;i++)
        {
            System.out.print(arr[i]+ " ");
        }
    }
}
```

	Input	Expected	Got	
✓	4 1 5 6 9	- 72 - 36 - 27 0	- 72 - 36 - 27 0	✓
✓	5 10 87 63 42 2	- 6699 0 - 2088 - 3915 - 7395	- 6699 0 - 2088 - 3915 - 7395	✓
✓	2 - 9 9	- 162 0	- 162 0	✓

Passed all tests!✓

Question3

Correct

Marked out of 5.00

Givenanarrayofnumbers,youareexpectedtoreturnthesumofthelongestsequenceofPOSITIVEnumbersinthearray. If there are NO positive numbers in the array, you are expected to return - 1.

In this question' s scope, the number 0 should be considered as positive.

Note:Iftherearemorethanonegroupofelementsinthearrayhavingthelongestsequence of POSITIVEnumbers,youareexpectedto return the total sum of all those POSITIVE numbers (see example 3 below).

input1representsthenumberofelementsinthearray. input2 represents the array of integers.

Example 1:

input1 = 16

input2 = {- 12, - 16, 12, 18, 18, 14, - 4, - 12, - 13, 32, 34, - 5, 66, 78, 78, - 79}

Expectedoutput=62

Explanation:

Theinputarraycontainsfoursequencesof POSITIVEnumbers,i.e."12,18,18,14","12","32,34",and"66,78,78".Thefirstsequence"12,18, 18, 14" is the longest of the four as it contains 4 elements. Therefore, the expected output = sum of the longest sequence of POSITIVE numbers = 12 + 18 + 18 + 14 = 63.

Example 2:

input1 = 11

input2 = {- 22, - 24, 16, - 1, - 17, - 19, - 37, - 25, - 19, - 93, - 61}

Expectedou

tput=- 1

Explanation:

TherearenOpositivenumbersintheinputarray.Therefore,theexpect

edoutputforsuchcases=- 1. Example 3:

input1 = 16

input2 = {- 58, 32, 26, 92, - 10, - 4, 12, 0, 12, - 2, 4, 32, - 9, - 7, 78, - 79}

Expectedou

tput=174

Explanation:

The input array contains four sequences of POSITIVE numbers, i.e. "32, 26, 92", "12, 0, 12", "4, 32", and "78". The first and second sequences "32,26,92"and"12,0,12" arethelongestofthefourastheycontain4elementseach.Therefore,theexpectedoutput=sumofthelongest sequence of POSITIVE numbers = (32 + 26 + 92) + (12 + 0 + 12) = 174.

For example:

Input	Result
16 - 12 - 16 12 18 18 14 - 4 - 12 - 13 32 34 - 5 66 78 78 - 79	62
11 - 22 - 24 - 16 - 1 - 17 - 19 - 37 - 25 - 19 - 93 - 61	- 1
16 - 58 32 26 92 - 10 - 4 12 0 12 - 2 4 32 - 9 - 7 78 - 79	174

Answer:(penaltyregime:0%)

```
1  import
   java.io.*;
   importjava.util.
2  *;
   public class arraypos{
3      public static void main(String[] args)
       {
```

```
        Scannersc=newScanner(
4       System.in); int
        n=sc.nextInt();
5       int[]arr=newint[
        n]; int maxl=0;
        int cl=0;
6
7
8
9
1
0
```

```
11      int csum=0;
12      int tsum=0;
13      for(inti=0;i<n;i++)
14      {
            arr[i]=sc.nextIn
15          t();
16      }
17      for(inti=0;i<n;i++)
18      {
            if(arr[i]>0)
19          {
20              cl++;
                csum+=arr[i
21              ];
22          }
23          else
24          {
25              if(cl>maxl)
                {
26                  maxl=cl;
27                  tsum=csu
                    m;
28              }
29              else
30              if(cl==maxl)
31              {
32                  tsum+=c
```

	Input	Expected	Got	
✓	16 - 12 - 16 12 18 18 14 - 4 - 12 - 13 32 34 - 5 66 78 78 - 79	62	62	✓

Passed all tests!✓

Lab- 03- MCQ

Jump to...

Simple Encoded Array

Dashboard/Mycourses/CS23333- OOPUJ- 2023/Lab- 04- ClassesandObjects/Lab- 04- LogicBuilding

StatusFinished

StartedSunday,22September2024,10:32PM
CompletedSunday,22September2024,11:31PM

Duration58mins48secs

Question1
Correct
Markedoutof5.00

Create a class Student with two private attributes, name and roll number. Create three objects by invoking different constructors available in the class Student.

Student()

Student(Stri

ngname)

Student(Stringname,introllno)

Input:

Noinput

Output:

No- argconstructorisinvoked
1 argconstructorisinvoked
2 argconstruc
torisinvoked
Name =null ,
Roll no = 0
Name=Rajalakshmi,
Rollno=0 Name
=Lakshmi , Roll no
= 101

Forexample:

Test	Result
1	No- argconstructorisinvoked 1 argconstructorisinvoked 2 argconstructorisinvoked Name =null , Roll no = 0 Name=Rajalakshmi, Rollno=0 Name =Lakshmi , Roll no = 101

Answer:(penaltyregime:0%)

```
39}
40
```

	Test	Expected	Got	
✓	1	No-argconstructorisinvoked	No-argconstructorisinvoked	✓
		1 argconstructorisinvoked 2 argconstructorisinvoked	1 argconstructorisinvoked 2 argconstructorisinvoked	
		Name=null,Rollno=0	Name=null,Rollno=0	
		Name=Rajalakshmi, Rollno=0 Name =Lakshmi , Roll no = 101	Name=Rajalakshmi, Rollno=0 Name =Lakshmi , Roll no = 101	

Passed all tests!✓

Question2
Correct
Markedoutof 5.00

Create a Class Mobilewith the
attributes listed below, private
String manufacturer;
privateStringoperati
ng_system; public
String color;
privateintcost;

Define a Parameterized constructor to initialize

the above instance variables. Define getter and

setter methods for the attributes above.

for example : setter method

for manufacturer is void

setManufacturer(String

manufacturer)

{ this.manufacturer=

manufacturer;

}

StringgetManu

facturer()

{ return

manufacturer;

}

DisplaytheobjectdetailsbyoverridingthetoString()method.

Forexample:

Test	Result
1	manufacturer = Redmi operating_system=Andriod color = Blue cost=34000

Answer:(penaltyregime:0%)

```
1  publicclassMobile{
       privateStringmanufacturer;
       private String
2      operating_system; private
       String color;
3      privateintcost;
       public Mobile(String manufacturer,Stringoperating_system,Stringcolor,intcost)
4          { this.manufacturer=manufacturer;
           this.operating_system=oper
5          ating_system;
           this.color=color;
6          this.cost=cost;
       }
       publicvoidsetManufacturer(Stringmanfacturer)
7      {
           this.manufacturer=manufacturer;
8      }
       publicStringgetManufacturer()
9      {
           returnmanufacturer;
1      }
0      publicStringgetOperatingSystem()
       {
1          returnoperating_system;
1      }
1      publicvoidsetColor(Stringcolor)
2      {
           this.color=color;
1      }
3      publicvoidsetCost(intcost)
       {
           this.cost=cost;
1      }
4      @Override
       publicStringtoString()
1      {
5          return"manufacturer="+manufacturer+"\noperating_system="+operating_sy
           stem+"\ncolor="+color+"\nc
1      }
6      publicstaticvoidmain(String[]args)
       {
1          Mobilemobile=newMobile("Redmi","Andriod","Blue",34000);
7
1
8
```

4
0
System.out.println(

	Test	Expected	Got	
✓	1	manufacturer=Redmi operating_system=Andriod color=Blue cost=3400	manufacturer=Redmi operating_system=Andriod color=Blue cost=3400	✓

Passed all tests! ✓

Question 3
Correct
Marked out of 5.00

Createaclasscalled"Circle"witharadiusattribute.Youcanaccessandmodifythisattributeu singgetterandsettermethods. Calculate the area and circumference of the circle.

Area of

Circle =

πr2Circumf

erence=2πr

Input:

2

Output:

Area=12.57

Circumferenc

e=12.57 For

example:

Test	Input	Result
1	4	Area=50.27 Circumferen ce=25.13

Answer:(penaltyregime:0%)

Reset answer

```
1  importjava.io.*;
2  importjava.util.*;
3  classCircle
4  {
5      privatedoubleradius;
6      publicCircle(doubleradius){
7          this.radius=radius;
8
9
```

```
10      }
11      publicvoidsetRadius(doubleradius){
12          this.radius=radius;
13
14
15      }
16      publicdoublegetRadius(){
17          returnradius;
18
19
20      }
21      publicdoublecalculateArea(){//completethebelowstatement
22          returnMath.PI*radius*radius;
23
24      }
25      publicdoublecalculateCircumference(){
26          return2*Math.PI*radius;
27      }
```

```
28  }
29  classprog{
30      publicstaticvoidmain(String[]args){
31          intr;
32          Scannersc=newScanner(System.in);
33          r=sc.nextInt();
34          Circlec=newCircle(r);
35          System.out.println("Area="+String.format("%.2f",c.calculateArea()));
36          System.out.println("Circumference="+String.format("%.2f",c.calculateCircu
            mference()));
37
38
39      }
40  }
41
```

	Test	Input	Expected	Got	
✓	1	4	Area=50.27 Circumferen	Area=50.27 Circumferen	✓

			ce=25.13	ce=25.13	
✓	2	6	Area=113.10 Circumferen ce=37.70	Area=113.10 Circumferen ce=37.70	✓
✓	3	2	Area=12.57 Circumferen ce=12.57	Area=12.57 Circumferen ce=12.57	✓

Passed all tests!✓

Lab- 04- MCQ

Jumpto...

NumberofPrimesinaspecifiedrange

StatusFinished

StartedSunday, 6 October 2024,7:02 PM
CompletedSunday, 6 October 2024,7:07 PM

Duration5 mins 27 secs

Question1
Correct
Markedoutof5.00

Create a class known as "BankAccount" with methods called deposit() and withdraw().

CreateasubclasscalledSavingsAccountthatoverridesthewithdraw()methodtopreventwithdrawalsiftheaccountbalancefallsbelowone hundred.

For example:

Result
CreateaBankAccountobject(A/cNo.BA1234)withinitialbalanceof$500: Deposit $1000 into account BA1234: New balance after depositing $1000: $1500.0 Withdraw $600 from account BA1234: New balance after withdrawing $600: $900.0

Answer:(penaltyregime:0%)

Reseta nswer

```
1  class BankAccount{
2      private String accountNumber;
3      private double balance;
4
5      public BankAccount(String accountNumber, double initialBalance) {
6          this.accountNumber= accountNumber;
7          this.balance= initialBalance;
8      }
9
10     public void deposit(double amount) {
11     balance += amount;
12     // Format the output correctly
13     System.out.println("New balance after depositing $" + (amount % 1== 0 ?String
       .format("%.0f", amount) : Strin
14 }
15
1
```

```
6
17      public void withdraw(double amount) {
18          if (balance >= amount) {
19              balance - = amount;
20              // Format the output correctly
21              System.out.println("New balance after withdrawing $" + (amount % 1 ==
                0 ?String.format("%.0f", amount
22          } else {
23              System.out.println("Insufficient funds!");
24          }
25      }
26
27      public double getBalance() {
28          return balance;
29      }
30  }
31
32  class SavingsAccountextends BankAccount{
33      private final double minimumBalance= 100.0;
34
```

BankAccount BA1234 = new

```
35      public SavingsAccount(String accountNumber, double initialBalance) {
36          super(accountNumber, initialBalance);
37      }
38
39      @Override
40      public void withdraw(double amount) {
41          if (getBalance() -  amount >= minimumBalance) {
42              super.withdraw(amount);
43          } else {
44              System.out.println("Minimum balance of $" + String.format("%.0f",
                minimumBalance) + " required!");
45          }
46      }
47  }
48
49  public class Main {
50      public static void main(String[] args) {
```

5 System.out.println("Create a Bank Account object (A/c No. BA1234)

	Expected	Got	

✓	CreateaBankAccountobject(A/cNo.BA1234)with initial balance of $500: Deposit $1000 into account BA1234: Newbalanceafterdepositing $1000:$1500.0 Withdraw $600 from account BA1234: New balance after withdrawing $600: $900.0 CreateaSavingsAccountobject(A/cNo.SA1000)with initial balance of $300: Try to withdraw $250 from SA1000! Minimum balance of $100 required! Balance after trying to withdraw $250: $300.0	CreateaBankAccountobject(A/cNo.BA1234)with initial balance of $500: Deposit $1000 into account BA1234: Newbalanceafterdepositing$1000:$1500.0 Withdraw $600 from account BA1234: New balance after withdrawing $600: $900.0 CreateaSavingsAccountobject(A/cNo.SA1000)with initial balance of $300: Try to withdraw $250 from SA1000! Minimum balance of $100 required! Balance after trying to withdraw $250: $300.0	✓

Passed all tests!✓

Question2

Correct

Marked out of 5.00

createaclasscalledCollegewithattributeStringname,constructortoinitializethenameattribute,amethodcalledAdmitted().Createa subclass called CSE thatextends Student class, with department attribute ,Course() method to sub class. Print the details of the Student.

College:

Stringcolleg

eName;

public

College()

{ }

publicadmit

ted(){}

Student:

Stringstud

entName;

String

departme

nt;

publicStudent(StringcollegeName,Stringstud

entName,Stringdepart){} public toString()

Expected Output:

Astudentadmit
tedinREC
CollegeName
: REC
StudentName:
Venkatesh
Department :
CSE

For example:

Result
Astudentadmitted inREC CollegeName :

Answer:(penaltyregime:0%)

Reseta

nswer

```
1  class College {
2      protected String collegeName;
3
4      public College(String collegeName) {
5          this.collegeName= collegeName;
6      }
7
8      public void admitted() {
9          System.out.println("A student admitted in " + collegeName);
10     }
11 }
12
13 class Student extends College {
14     String studentName;
15     String department;
16
17     public Student(String collegeName, String studentName, String department) {
18         super(collegeName);
19         this.studentName= studentName;
20         this.department= department;
```

```
    }

    @Override
    public String toString() {
        return "CollegeName : " + collegeName+ "\n" +
                "StudentName : " + studentName+ "\n" +
                "Department : " + department;
    }
}

public class sample {
    public static void main(String[] args) {
        Student s1 = new Student("REC", "Venkatesh", "CSE");
        s1.admitted();// Print "A student admitted in REC"
        System.out.println(s1);
    }
}
```

	Expected	Got	

✓	Astudentadmitt edinREC CollegeName : REC StudentName : Venkatesh Department : CSE	Astudentadmitt edinREC CollegeName : REC StudentName : Venkatesh Department : CSE	✓

Passed all tests!✓

Question3
Correct
Marked out of 5.00

Create a classMobile withconstructor and a methodbasicMobile().

Create a subclass CameraMobilewhich extends Mobile class ,
withconstructor anda methodnewFeature().
CreateasubclassAndroidMobilewhichextendsCameraMobile,withcons
tructorandamethodandroidMobile(). display the details of the
Android Mobile class by creating the instance..

```
class Mobile{

}
class CameraMobileextends Mobile {
}
```

class AndroidMobile extends CameraMobile{

}

expected output:

Basic Mobile is
Manufactured
CameraMobileisMa
nufactured
AndroidMobileisMa
nufactured Camera
Mobile with 5MG px
TouchScreenMobileisManufactured

For example:

Result
Basic Mobile is Manufactured Camera Mobile is

Answer:(penaltyregime:0%)

```
7           System.out.println("Basic Mobile functionality");
8       }
9   }
10
11  class CameraMobileextends Mobile {
12      public CameraMobile() {
36  }
37  }
```

	Expected	Got	
✓	Basic Mobile is Manufactured Camera Mobile is Manufactured AndroidMobileisManufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	Basic Mobile is Manufactured Camera Mobile is Manufactured AndroidMobileisManufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	✓

Passed all tests!✓

Lab- 05- MCQ

Jump to...

IsPalindromeNumber?

StatusFinished

StartedSunday,6October2024,7:09PM
CompletedSunday,6October2024,7:12PM

Duration3mins36secs

Question1
Correct
Markedoutof 5.00

Given a String input1, which contains many number of words separated by : and each word contains exactly two lower case alphabets, generate an output based upon the below 2 cases.

Note:

1. Allthecharactersininput1arelowercasealphabets.
2. input1willalwayscontainmorethanonewordseparatedby:
3. Outputshouldbereturn

edinuppercase. Case 1:
Checkwhetherthetwoalphabetsaresame.

If yes, then take one alphabet from it

and add it to the output. Example 1:

input1=ww:i

i:pp:rr:oo

output =

W IPRO

Explanation:

word1 is ww, both are

same hence take w

word2 is ii, both are

same hence take i word3

is pp, both are same

hence take p word4 is rr,

both are same hence
take r word5 is oo, both
are same hence take o
Hence the output is
WIPRO
Case2:

If the two alphabets are not same, then find the position value of them and find maximum value – minimum value. Take the alphabet which comes at this (maximum value - minimum value) position in the alphabet series.

Exampl
e 2”
input1=z
x:za:ee
output
= BYE
Explanat
ion
word1iszx,botharenotsamea
lphabets position value of z
is 26
positionvalueofxis24
max– minwillbe26– 24=2

Alphabet which comes
in 2nd position is b
Word2 is za, both are
not same alphabets
position value of z is 26
positionvalueofais1
max– minwillbe26– 1=25

Alphabet which comes in
25th position is y word3 is
ee, both are same hence
take e Hence the output
is BYE

Forexample:

Input	Result
ww:ii:pp:rr:oo	WIPRO
zx:za:ee	BYE

Answer:(penaltyregime:0%)

```
1  importjava.util.Scanner;
2
3  publicclassMain{
4      publicstaticvoidmain(String[]args)
5      {
6          Scannersc=newScanner(System.in);
7          Strings=sc.nextLine();
8          String[]words=s.split(":");
9          StringBuilderoutput=newStringBuilder();
10         for(Stringi:words)
11         {
12             charch1=i.charAt(0);
13             charch2=i.charAt(1);
14
15             if(ch1==ch2)
```

```
16              {
17  output.append(Character.toUpperCase(c
                                        h1));
18              }
19              else
20              {
21                  intpos1=ch1- 'a'+1;
22                  intpos2=ch2- 'a'+1;
23
24                  intmax=Math.max(pos1,pos2);
25                  intmin=Math.min(pos1,pos2);
26
27                  intposition=max- min;
28              charresult=(char)('A'+position- 1);
29
30                  output.append(result);
31              }
32          }
33
```

```
34          System.out.println(output.toString());
35      }
36  }
```

	Input	Expected	Got	
✓	ww:ii:pp:rr:oo	WIPRO	WIPRO	✓
✓	zx:za:ee	BYE	BYE	✓

Passed all tests!✓

Question2
Correct
Markedoutof5.00

Given2stringsinput1&input2.

- Concatenatebothethestrings.
- Removeduplicatealphabets&whitespaces.
- Arrange the alphabets in descending order.

Assumption 1:
There will either be alphabets, white spaces or null in both the inputs. Assumption 2:
Bothinputswillbeinlowercase. Example 1:
Input1:apple

Input 2:
orange
Output:rpo
nlgea
Example
2:
Input 1:
fruits
Input2:ar
egood
Output:utsr
oigfeda
Example 3:
Input1:""
Input 2:
""
Output:n
ull
Forexample:

Test	Input	Result
1	apple orange	rponlgea
2	fruits are good	utsroigfeda

Answer:(penaltyregime:0%)

```
1 importjava.util.*;
```

```
2
3  publicclassStringMergeSort
4  {
5      publicstaticStringmergeAndSort(Stringinput1,Stringinput2)
6      {
7          Stringconcatenated=input1+input2;
8          Set<Character>uniqueChars=newHashSet<>();
9          for(charch:concatenated.toCharArray())
10         {
11             if(ch!='')
12             {
13                 uniqueChars.add(ch);
14             }
15         }
16
17
18         List<Character>sortedList=newArrayList<>(uniqueChars);
19         Collections.sort(sortedList,Collections.reverseOrder());
20
21         StringBuilderresult=newStringBuilder();
```

```
22          for(charch:sortedList)
23          {
24              result.append(ch);
25          }
26          returnresult.length()>0?result.toString():"null";
27      }
```

```
28
29      publicstaticvoidmain(String[]args)
30      {
31          Scannerscanner=newScanner(System.in);
32
33
34          Stringinput1=scanner.nextLine();
35
36          Stringinput2=scanner.nextLine();
37
```

```
38      String result=mergeAndSort(input1,input2);
39      System.out.println(result);
40      scanner.close();
41  }
42  }
```

	Test	Input	Expected	Got	
✓	1	apple orange	rponlgea	rponlgea	✓
✓	2	fruits are good	utsroigfeda	utsroigfeda	✓
✓	3		null	null	✓

Passed all tests!✓

Question3
Correct
Markedoutof5.00

You are provided a string of words and a 2- digit number. The two digits of the number represent the two words that are to be processed. For example:
If the string is "Today is a Nice Day" and the 2- digit number is 41, then you are expected to process the 4th word ("Nice") and the 1st word ("Today").
Theprocessingofeachwordistobedoneasfollows:

Extract the Middle- to- Begin part: Starting from the middle of the word, extract the characters till the beginning of the word. Extract the Middle- to- End part: Starting from the middle of the word, extract the characters till the end of the word.
Ifthewordtobeprocessedis"Nice":

ItsMiddle- to-
Beginpartwillbe"iN".

Its Middle- to- End
part will be "ce".

So, merged together these two
parts would form "iNce".

Similarly, if the word to be
processed is "Today":

ItsMiddle- to-
Beginpartwillbe"doT".

Its Middle- to- End
part will be "day".
So,mergedtogetherthesetwopartswouldform"doTday".

Note: Note that the middle letter 'd' is part of both the extracted parts. So, for words whose length is odd, the middle letter should be included in both the extracted parts.
Expectedoutput:

The expected output is a string containing both the processed
words separated by a space "iNcedoTday" Example 1:

input1="TodayisaNic

eDay" input2 = 41

output="iNced

oTday"

Example 2:

input1 = "Fruits like Mango and Apple are

common but Grapes are rare" input2 = 39

output="naMngoarGpes"

Note: The input string input1 will contain only alphabets and a single space character separating each word in the string. Note: The input string input1 will NOT contain any other special characters.

Note: The input number input2 will always be a 2- digit number (>=11 and <=99). One of its digits will never be 0. Both the digits of the number will always point to a valid word in the input1 string.

Forexample:

Input	Result
TodayisaNi ceDay 41	iNcedo Tday
Fruits like Mango and Apple are common but Grapes are rare 39	naMng oarGpe s

Answer:(penaltyregime:0%)

```
1  importjava.util.Scanner;
2
3  publicclassWordProcessor{
4  publicstaticvoidmain(String[]ar
                                gs){
5   Scannersc=newScanner(Syste
                               m.in);
6
7          Stringinput=sc.nextLine();
8          intnumber=sc.nextInt();
9          String[]words=input.split("");
```

```
10

11      intpos1=number/10;
12      intpos2=number% 10;
13
14      pos1- - ;
15      pos2- - ;
16
17      Stringresult1=processW ord(words[pos1]);
18      Stringresult2=processW ord(words[pos2]);
19
20      Stringresult=result1+""+result2;
21      System.out.println(result);
22  }
23
24  privatestaticStringprocessW ord(Stringword){
25      intlen=word.length();
```

```
26      intmid=len/2;
27
28      StringmiddleToBegin;
29      StringmiddleToEnd;
30
31      if(len% 2==0)
32      {
33          middleToBegin=newStringBuilder(word.substring(0,mid)).r
            everse().toString();
34          middleToEnd=word.substring(mid);
35      }
36      else
37      {
38          middleToBegin=newStringBuilder(word.substring(0,mid+1))
            .reverse().toString();
39          middleToEnd=word.substring(mid);
40      }
41      returnmiddleToBegin+middleToEnd;
```

```
42      }
43  }
```

	Input	Expected	Got	
✓	TodayisaNiceDay 41	iNcedoTday	iNcedoTday	✓

Passed all tests! ✓

Lab- 06- MCQ

Jump to...

ReturnsecondwordinUppercase

Status Finished

Started Sunday, 6 October 2024, 7:13 PM
Completed Sunday, 6 October 2024, 7:17 PM

Duration 4 mins 48 secs

Question 1
Correct
Marked out of 5.00

createaninterfacePlayablewithamethodplay()thattakesnoargumentsandreturnsvoid.Createthreeclasses Football, Volleyball, and Basketball that implement the Playable interface and override the play() method to play the respective sports.

```
interfacePl
  ayable{ v
  oid
  play();
}
classFootballimple
  mentsPlayable{ Str
  ing name;
  publicFootball(Stri
    ngname)
    { this.name=nam
    e;
  }
 public void play() {
  System.out.println(name+"isPlayingfootball");
  }
}
```

Similarly,createVolleyballandBasketball classes.

Sample output:

```
Sadhvin is Playing
football
```

For example:

Test	Input	Result
1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football SanjayisPlayingvolleyball Sruthi is Playing basketball
2	Vijay Arun	Vijay is Playing football Arun is Playing volleyball BalajiisPlayingba

	B al aji	sketball

Answer:(penaltyregime:0%)

```
1  import java.util.Scanner;
2
3  interface Playable
4  {
5      void play();
6  }
7
8  class Football implements Playable {
9      String name;
10
11     public Football(String name)
12     {
13         this.name = name;
14     }
15
16     public void play()
17     {
18         System.out.println(name + " is Playing football");
```

```
    }
}

class Volleyball implements Playable
{
    String name;

    public Volleyball(String name)
    {
        this.name = name;
    }

    public void play()
    {
        System.out.println(name + " is Playing volleyball");
```

```
3   {
4
38  class Basketball
    {   String
39      public Basketball(String name)
40      {
41          this.name = name;
42      }

43      public void play()
5   {
0   public class
```

	Test	Input	Expected	Got	
✓	1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football SanjayisPlayingvolleyball Sruthi is Playing basketball	Sadhvin is Playing football SanjayisPlayingvolleyball Sruthi is Playing basketball	✓
✓	2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball BalajiisPlayingbasketball	Vijay is Playing football Arun is Playing volleyball BalajiisPlayingbasketball	✓

Passed all tests!✓

Question2
Correct
Marked out of 5.00

Createinterfacessho
wnbelow. interface
Sports {
public void
setHomeTeam(String
name);
publicvoidsetVisitingTe
am(Stringname);
}
interface Football
extends Sports
{publicvoidhomeTeam
Scored(intpoints);
publicvoidvisitingTeamScored(intpoints);}
createaclassCollegethatimplementstheFootballinterfaceandprovidesthenecess
aryfunctionalitytotheabstractmethods. sample Input:
Rajal
aksh
mi
Save
etha
22
21
Output:
Rajalakshmi 22 scored
Saveetha 21
scored
Rajalakshmiist
heWinner!
For example:

Test	Input	Result
1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmiisthewinner!

Answer:(penaltyregime:0%)

Reset answer

```
1  import java.util.Scanner;
2
3  interface Sports
4  {
5      public void setHomeTeam(String name);
6      public void setVisitingTeam(String name);
7  }
8
9  interface Football extends Sports
10 {
11     public void homeTeamScored(int points);
12     public void visitingTeamScored(int points);
13 }
14
```

```
15 class College implements Football
16 {
17     String homeTeam;
18     String visitingTeam;
19
20     public void setHomeTeam(String name)
21     {
22         homeTeam= name;
23     }
24
25     public void setVisitingTeam(String name)
26     {
27         visitingTeam= name;
28     }
29
30     public void homeTeamScored(int points)
31     {
32         System.out.println(homeTeam+ " " + points + " scored");
```

```
33      }
34
35      public void visitingTeamScored(int points)
36      {
37          System.out.println(visitingTeam+ " " + points
            + " scored");
38      }
39
40      public void winningTeam(int homeTeamPoints,
        int visitingTeamPoints)
41      {
42          if (homeTeamPoints>visitingTeamPoints)
43          {
44      System.out.println(homeTeam+ " is the winner!");
45          }
46          else if
            (homeTeamPoints<visitingTeamPoints)
```

```
47          {
48              System.out.println(visitingTeam+ " is the winner!");
49          }
50          else
51          {
52              System.out.println("It's a tie match.");
```

	Test	Input	Expected	Got	
✓	1	Rajalakshmi	Rajalakshmi 22 scored	Rajalakshmi 22 scored	✓
		Saveetha	Saveetha 21 scored	Saveetha 21 scored	
		22	Rajalakshmi is the winner!	Rajalakshmi is the winner!	
		21			
✓	2	Anna	Anna 21 scored	Anna 21 scored	✓
		Balaji	Balaji 21 scored	Balaji 21 scored	
		21	It's a tie match.	It's a tie match.	
		21			
✓	3	SRM	SRM 20 scored	SRM 20 scored	✓
		VIT	VIT 21 scored	VIT 21 scored	
		20	VIT is the winner!	VIT is the winner!	
		21			

Passed all tests!✓

Question3
Correct
Markedoutof5.00

RBI issues all national banks to collect interest on all customer loans.

CreateanRBIinterfacewithavariableStringparentBank="RBI"and abstractmethodrateOfInterest(). RBI interface has two more methods default and static method.

```
default void policyNote() {
System.out.println("RBIhasanewPolicyissuedin2023.");
}
static void regulations(){
System.out.println("RBIhasupdatednew regulationson2024.");
}
```

CreatetwosubclassesSBIandKarurwhichimplementstheRBIinterface. Provide the necessary code for the abstract method in two sub- classes. Sample Input/Output:

RBIhasanew Policyissuedin 2023
RBIhasupdatednewregulationsin2024. SBI rate of interest: 7.6 per annum.
Karurrateofinterest:7.4perannum.

For example:

Test	Result
1	RBI has a new Policy issued in 2023 RBIhasupdatednewregulationsin2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4

	per annum.

Answer:(penaltyregime:0%)

```
1  interface RBI
2  {
3      String parentBank= "RBI";
4
5      double rateOfInterest();
6
7       default void policyNote()
8      {
9          System.out.println("RBI has a new Policy issued in 2023");
10     }
11
12     static void regulations()
13     {
14         System.out.println("RBI has updated new regulations in 2024.");
15     }
16 }
17
18 class SBI implements RBI
```

```
19  {
20      public double rateOfInterest()
21      {
22          return7.6;
23      }
24  }
25
26  class Karur implements RBI
27  {
28      public double rateOfInterest()
29      {
30          return7.4;
31      }
32  }
33
34  public class test
35  {
36      public static void main(String[] args)
```

```
37      {
```

```
38          SBI sbiBank= new SBI();
39          Karur karurBank= new Karur();
40
41          sbiBank.policyNote();
42          RBI.regulations();
43
44          System.out.println("SBI rate of interest: " +
            sbiBank.rateOfInterest() + " per annum.");
45          System.out.println("Karur rate of interest: " +
            karurBank.rateOfInterest() + " per annum.");
46      }
47
```

	Test	Expected	Got	
✓	1	RBI has a new Policy issued in 2023 RBIhasupdatednewregulationsin2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4	RBI has a new Policy issued in 2023 RBIhasupdatednewregulationsin2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4	✓

Passed all tests!✓

Lab- 07- MCQ

Jump to...

Generate series and find Nth element

StatusFinished

StartedWednesday, 16October2024,8:25PM
CompletedWednesday, 16October2024,8:30PM

Duration5 mins 6 secs

Question1
Correct
Markedoutof5.00

1. FinalVariable:
   - Once a variable is declared final, its value cannot be changed after it is initialized.
   - It must be initialized when it is declared or in the constructor if it's not initialized at declaration.
   - It can be used to define constants

```
final int MAX_SPEED = 120;// Constant value, cannot be changed
```

2. FinalMethod:

- A method declared final cannot be overridden by subclasses.
- It is used to prevent modification of the method's behavior in derived classes.

```
public final void display()
  { System.out.println("Thisi
  safinalmethod.");
}
```

3. FinalClass:

- Aclassdeclaredasfinalcannotbesubclassed(i.e.,noot herclasscaninheritfromit). ⋅It is used to prevent a class from being extended and modified.
- public final class Vehicle {
  // class code
  }

GivenaJavaProgramthatcontainsthebuginit,yourtaskistoclea

rthebugtotheoutput. you should delete any piece of code.

For example:

Test	Result
1	The maximum speed is: 120 km/h This is a subclass of FinalExample.

Answer:(penaltyregime:0%)

Reset answer

```
1  class FinalExample{
2
3
4      final int maxSpeed= 120;
5
6
7      public final void displayMaxSpeed() {
```

```
        System.out.println("The maximum speed is: " + maxSpeed+ " km/h");
    }
}


class SubClassextends FinalExample{


    public void showDetails() {
        System.out.println("This is a subclass of FinalExample.");

    }

}


class prog {
    public static void main(String[] args) {
        FinalExample obj = new FinalExample();
        obj.displayMaxSpeed();// This will print the maximum speed


        SubClasssubObj= new SubClass();

        subObj.showDetails();// This will print the subclass details

    }
```

27	}

	Test	Expected	Got	
✓	1	The maximum speed is: 120 km/h This is a subclass of FinalExample.	The maximum speed is: 120 km/h This is a subclass of FinalExample.	✓

Passed all tests!✓

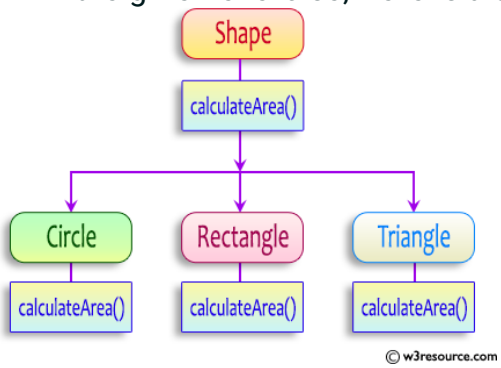
Question2

Correct

Marked out of 5.00

CreateabaseclassShapewithamethodcalledcalculateArea().Createthreesubclasses:Circle,Rectangle,andTriangle.Overridethe calculateArea() method in each subclass to calculate and return the shape's area.

In the given exercise, here is a simple diagram illustrating polymorphism implementation:




```
abstract class Shape {
  public abstract double calculateArea() ;
  }
}
```

System.out.printf("AreaofaTriangle:% .2f% n",

((0.5)*base*height));//usethisstatement sample Input :

4//radius of the circle to calculate area PI*r*r

5//length of the rectangle

6// breadth of the rectangle to calculate the area of a rectangle

4//base of the triangle

3//height of the triangle

OUTPUT:

Area of a
circle :50.27
AreaofaRectan
gle:30.00
Area of a
Triangle :6.00

For example:

Test	Input	Result
1	4	Area of a circle: 50.27
	5	Area of a Rectangle: 30.00
	6	Area of a Triangle: 6.00
	4	
	3	
2	7	Area of a circle: 153.94
	4.5	Area of a Rectangle: 29.25
	6.5	Area of a Triangle: 4.32
	2.4	
	3.6	

Answer:(penaltyregime:0%)

```
1  import java.util.Scanner;
2
3  abstract class Shape {
```

```
4       public abstract double calculateArea();
5   }
6
7   class Circle extends Shape {
8       private double radius;
9
10      public Circle(double radius) {
11          this.radius= radius;
12      }
```

```
13
51  public
52    public static void
14      @Override
        public double calculateArea() {
15          return Math.PI* radius * radius;
16
17      }
18
19
20  class Rectangle extends Shape {
21      private double length;
```

```
}
    private double breadth;

    public Rectangle(double length,
    double breadth) {

        this.length= length;

        this.breadth= breadth;

    }

    @Override
    publicdoublecalculateAr
        ea(){ return length *
        breadth;

    }
}

class Triangle extends Shape {

    private double base;

    private double height;
```

```
7
8
9
40
41
42
43
44
45
46
47
48
49
50
```

```
    public Triangle(double base,
    double height) {
        this.base= base;
        this.height= height;
    }
    @Override
    publicdoublecalculateAr
        ea(){ return 0.5 *
        base * height;
    }
}
```

	Test	Input	Expected	Got	
✓	1	4	Area of a circle: 50.27	Area of a circle: 50.27	✓
		5	Area of a Rectangle: 30.00	Area of a Rectangle: 30.00	

Passed all tests!✓

Question3
Correct
Marked out of 5.00

Asalogicbuildinglearneryouaregiventhetasktoextractthestringwhichhasvowelasthefirst andlastcharactersfromthegivenarrayof Strings.

Step1:Scanthroughthearrayof Strings,extracttheStringswithfirstandlastcharactersasvo wels;thesestringsshouldbeconcatenated. Step2: Convert the concatenated string to lowercase and return it.

Ifnoneofthestringsinthearrayhasfirstandlastcharacterasvowel ,thenreturnnomatchesfound input1: an integer representing the number of elements in the array.

input2:Strin garray.

Example 1:

input1: 3

input2:

{“ oreo” ,“ sirish” ,“ apple” } output:

oreoapple

Example 2:

input1: 2

input2:

{“ Mango” ,“ ban ana” } output: no

matches found

Explanation:

None of the strings has first and last character as vowel.

Hencetheoutputisnomatc

hesfound. Example 3:

input1: 3

input2:

{“ Ate” ,“ Ac

e” ,“ Girl” }

output: ateace

For example:

Input	Result
3 oreosirish apple	oreoappl e
2 Mango banana	no matches found
3 Ate Ace Girl	ateace

Answer:(penaltyregime:0%)

```
4    public static void main(String[] args)
5    {
6        Scanner sc= new Scanner(System.in);
7    19{ int n = sc.nextInt();
```

```
20        if ("aeiouAEIOU".indexOf(i.charAt(0)) != - 1
          &&"aeiouAEIOU".indexOf(i.charAt(i.length() -  1)) != - 1)
21        {
22            s += i;
23            found = true;
24        }
25    }
26
27    if (found)
28    {
29        System.out.println(s.toLowerCase());
30    }
31    else
32    {
33        System.out.println("no matches found");
```

```
34        }
35
36        sc.close();
37    }
38}
```

	Input	Expected	Got	
✓	3 oreosirish apple	oreoappl e	oreoappl e	✓
✓	2 Mango banana	no matches found	no matches found	✓
✓	3 Ate Ace Girl	ateace	ateace	✓

Passed all tests! ✓

Lab- 08- MCQ

Jump to...

FindStringCode

Status Finished

Started Wednesday, 16 October 2024, 8:31 PM

CompletedWednesday,16October2024,8:37PM

Duration6mins17secs

Question1
Correct
Markedoutof5.00

Inthefollowingprogram,anarrayofintegerdataistobeinitialized.
During the initialization, if a user enters a value other than an integer, it will throw an InputMismatchException exception. On the occurrence of such an exception, your program should print " You entered bad data."
Ifthereisnosuchexceptionitwillprintthetotalsumofthearray.

/*Definetry- catchblocktosaveuserinputinthearray"name"
Ifthereisanexceptionthencatchtheexceptionotherwiseprintthetotalsumofthearray.*/

SampleInput:

3
5 21

SampleOutput:

8

SampleInput:

2
1g

SampleOutput:

Youenteredbaddata.

Forexample:

Input	Result
3 5 21	8
2 1 g	Youenteredbaddata.

Answer:(penaltyregime:0%)

Reset

answer

```
1  importjava.util.Scanner;
2     importjava.util.InputMismatchException;
3        classprog{
4        publicstaticvoidmain(String[]args){
5     Scannersc=newScanner(System.in);
6     intlength=sc.nextInt();
7     int[]name=newint[length];
8     intsum=0;
9     try
10   {
11   for(inti=0;i<length;i++){
12name[i]=sc.nextInt();
13sum+=name[i];
14}
15System.out.println(sum);
16}
17catch(InputMismatchExceptione)
18   {
19System.out.println("Youenteredbaddata.");
20}
21}
22}
```

	Input	Expected	Got	
✓	3 5 21	8	8	✓

	Input	Expected	Got	
✓	2 1 g	Youenteredbaddata.	Youenteredbaddata.	✓

Passed all tests!✓

Question2
Correct
Markedoutof 5.00

Write a Java program to handle ArithmeticException and ArrayIndexOutOfBoundsException. Create an array, read the input from the user, and store it in the array.
Divide the 0th index element by the 1st index element and store it. if the 1st element is zero, it will throw an exception.
ifyoutrytoaccessanelementbeyondthearraylimitthrowsanexception.
Input:
5
100203040
Output:
java.lang.ArithmeticExce
ption:/byzero I am
always executed
Input:
3
102030
Output
java.lang.ArrayIndexOutOfBoundsException:
Index 3 out of bounds for length 3I am always executed
Forexample:

Test	Input	Result
1	6	java.lang.ArithmeticExcep tion:/byzero
	1 0412 8	Iamalwaysexecuted

Answer:(penaltyregime:0%)

```
1  import java.util.Scanner;
2
3  public class I
4  {
5      public static void main(String[] args)
6      {
7          Scanner sc=new Scanner(System.in);
8
9          int n=sc.nextInt();
10         int[] arr=new int[n];
11         for(int i=0;i<n;i++){
12             arr[i]=sc.nextInt();
13         }
14
15         try
16         {
17             int result=arr[0]/arr[1];
18
19
20             System.out.println(arr[3]);
```

```
21          }
22          catch(ArithmeticExceptione)
23          {
24              System.out.println("java.lang.ArithmeticException:"+e.getMessage());
25          }
26          catch(ArrayIndexOutOfBoundsExceptione)
27          {
28              System.out.println("java.lang.ArrayIndexOutOfBoundsException:"+e.get
                Message());
29          }
30          finally
31          {
32              System.out.println("Iamalwaysexecuted");
33          }
34      }
35  }
```

	T	Inp	Expected	Got	

	est	ut			
✓	1	6	java.lang.ArithmeticException:/ byzero	java.lang.ArithmeticException:/ byzero	✓
		104	Iamalwaysexecuted	Iamalwaysexecuted	
		128			
✓	2	3	java.lang.ArrayIndexOutOfBoundsException:Index	java.lang.ArrayIndexOutOfBoundsException:Index	✓
		1020	3outofboundsforlength3	3outofboundsforlength3	
		30	Iamalwaysexecuted	Iamalwaysexecuted	

Passed all tests!✓

Question3
Correct
Markedoutof 5.00

Write a Java program to create a method that takes an integer as a parameter and throws an exception if the number is odd.

SampleinputandOutput:

```
82 is even.
```

Fillthepreloadedanswertogettheexpectedoutput.

Forexample:

Result
82 is even.

Answer:(penaltyregime:0%)

Reset answer

```
1   classprog
2   {
3       publicstaticvoidmain(String[]args)
4       {
5           intn=82;
6           trynumber(n);
7           n=37;
8           trynumber(n);
9       }
10
11      publicstaticvoidtrynumber(intn)
12      {
13          try
14          {
15              checkEvenNumber(n);//CallthecheckEvenNumber()method
16              System.out.println(n+"iseven.");
17          }
1           catch(IllegalArgumentExceptione)
```

```
8
19          {
20              System.out.println("Error:"+e.getMessage());
21          }
22      }
23
24      publicstaticvoidcheckEvenNumber(intnumber)
25      {
26          if(number% 2!=0)
27          {
28              thrownewIllegalArgumentException(number+"isodd.");
29          }
30      }
31  }
```

	Expected	Got	
✓	82 is even. Error:37is odd.	82 is even. Error:37is odd.	✓

Passed all tests!✓

StatusFinished

StartedMonday,4November2024,8:28AM
CompletedMonday,4November2024,8:50AM

Duration21mins47secs

GivenanArrayList,thetaskistogetthefirstandlastelementoftheArrayListinJava.

```
Input:ArrayList=[1,2,3,4]
Output: First = 1, Last = 4
```

Approach:

1. GettheArrayListwithelements.
2. GetthefirstelementofArrayListusingtheget(index)methodbypassingindex=0.
3. GetthelastelementofArrayListusingtheget(index)methodbypassingindex=size– 1.

Answer:(penaltyregime:0%)

```
importjava.util
.*; public
class Main{
    publicstaticvoidmain(String[]args){
        Scanner scanner=new
        Scanner(System.in); int
        n=scanner.nextInt();
        ArrayList<Integer>arrayList=new
        ArrayList<>(); for(int i=0;i<n;i++)
        {
            arrayList.add(scanner.nextInt());
        }
        if(!arrayList.isEmpty())
        {
            intfirst=arrayList.get(0);
            int
            last=arrayList.get(arrayList.size()
            - 1);
            System.out.println("ArrayList:"+ar
            rayList);
            System.out.println("First:"+first+",Last:"+last);
        }
        else
        {
            System.out.println("TheArrayListisempty:");
        }
    }
}
```

	Test	Input	Expected	Got	
✓	1	6	ArrayList: [30,20,40,50,10,80]	ArrayList: [30,20,40,50,10,80]	✓
		30	First:30,Last:80	First:30,Last:80	
		20			
		40			
		50			
		10			
		8			

		0			
✓	2	4	ArrayList:[5,15,25,35]	ArrayList:[5,15,25,35]	✓
		5	First:5,Last:35	First:5,Last:35	
		15			
		25			
		35			

Passed all tests!✓

The given Java program is based on the ArrayList methods and its usage. The Java program is partially filled. Your task is to fill in the incomplete statements to get the desired output.

list.set();

list.indexO

f());

list.lastInd

exOf())

list.contai

ns()

list.size());

list.add();

list.remov

e();

TheabovemethodsareusedforthebelowJavaprogram.

Answer:(penaltyregime:0%)

Reset	answer	
1		importjava.util.*;
2		importjava.io.*;
3		
4		classprog{
5		publicstaticvoidmain(String[]args)
6		{
7		Scannersc=newScanner(System.in);
8		intn=sc.nextInt();
9		
1		ArrayList<Integer>list=newArrayList<Integer>();

```
0
1 1             for(inti=0;i<n;i++){
1 2                 list.add(sc.nextInt());
1 3             }
1 4             System.out.println("ArrayList:"+list);
1 5             list.set(1,100);
1 6             System.out.println("Indexof100="+list.indexOf(100));
1 7
1 8             //Gettingtheindexoflastoccurrenceof100
1 9             System.out.println("LastIndexof100="+list.lastIndexOf(100));
2 0             //Checkwhether200isinthelistornot
2 1             System.out.println(list.contains(200));//Output:false
2 2              //PrintArrayListsize
2 3             System.out.println("SizeOfArrayList="+list.size());
2 4             //Inserting500atindex1
2 5             list.add(1,500);//codehere
2 6              //Removinganelementfromposition3
2 7             list.remove(3);//codehere
2 8             System.out.print("ArrayList:"+list);
2 9         }
3 0     }
```

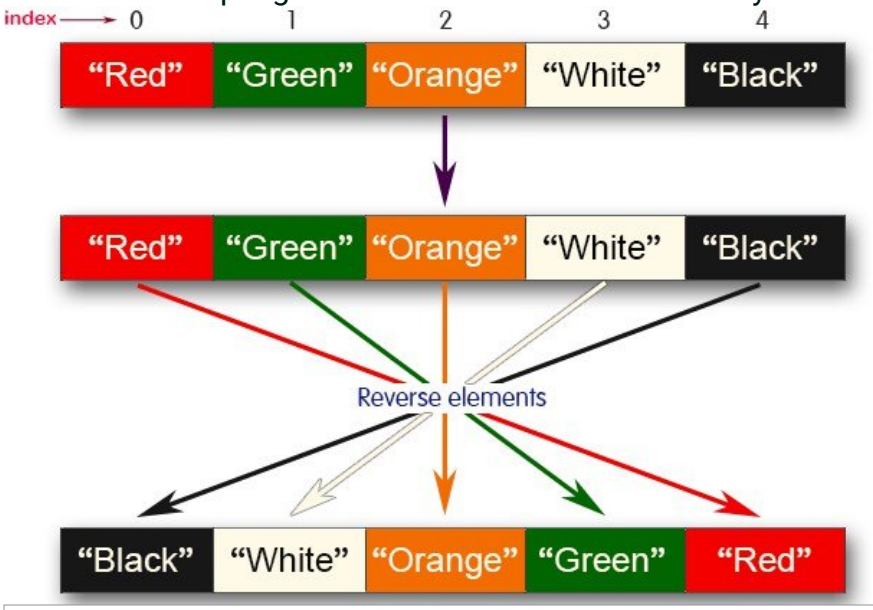
	Test	Input	Expected	Got	

✓	1	5	ArrayList: [1,2,3,100,5]	ArrayList: [1,2,3,100,5]	✓
		1	Indexof100=1	Indexof100=1	
		2	LastIndexof100=3	LastIndexof100=3	
		3	false	false	
		100	SizeOfArrayList=5	SizeOfArrayList=5	
		5	ArrayList: [1,500,100,100,5]	ArrayList: [1,500,100,100,5]	

Passed all tests!✓

Question3
Correct
Markedoutof 1.00

WriteaJavaprogramtoreverseelementsinanarraylist.



SampleinputandOutput: Red
Green
Orange
White
Black

Answer:(penaltyregime:0%)

```
1 importjava.util.*;
9 publicclassReverseArrayList{
    publicstaticvoidmain(String[]args){
        Scannerscanner=newScanner(System.in);
        ArrayList<String>colorList=new
        ArrayList<>(); int
        n=scanner.nextInt();
        scanner.next
        Line();
        for(inti=0;i<n
        ;i++)
        {
            String
            color=scanner.nextLine();
             colorList.add(color);
        }
        System.out.println("List before
        reversing :");
        System.out.println(colorList);
        Collections.reverse(colorList);
        System.out.println("List after
        reversing :");
        System.out.println(colorList);
    }
}
```

	Test	Input	Expected	Got	
✓	1	5 Red	Listbeforereversing: [Red,Green,Orange, White,Black]	Listbeforereversing: [Red,Green,Orange, White,Black]	✓
		Green Orange	Listafterreversing: [Black,White,Orange, Green,Red]	Listafterreversing: [Black,White,Orange, Green,Red]	
		White			

		Black			
✓	2	4 CSE AIML	Listbeforereversing: [CSE,AIML,AIDS,CYBER] Listafterreversing:	Listbeforereversing: [CSE,AIML,AIDS,CYBER] Listafterreversing:	✓
		AIDS CYBER	[CYBER,AIDS,AIML,CSE]	[CYBER,AIDS,AIML,CSE]	

Passed all tests!✓

Lab- 10- MCQ

Jumpto...

Lab- 11- MCQ

StatusFinished

StartedFriday, 8 November 2024, 5:24 PM
CompletedFriday, 8 November 2024, 5:55 PM

Duration31 mins 1 sec

Question1

Correct

Markedoutof1.00

JavaHashSetclass implementsthe Set interface,backed by a hashtable which isactually a HashMapinstance.

Noguaranteeismadeastotheiterationorderofthehashsetswhichmeansthattheclassdoesnotguaranteetheconstantorderof elements over time.

This class permits the null element.

Theclassalsoffersconstanttimeperformanceforthebasicoperationslikeadd,remove,contains,andsizeassumingthehashfunction disperses the elements properly among the buckets.

JavaHashSetFeatures

A few important features of HashSet are mentioned below:

- Implements Set Interface.
- The underlying data structure for HashSet is Hashtable.
- As it implements the Set Interface, duplicate values are not allowed.
- ObjectsthatyouinsertinHashSetarenotguaranteedtobeinsertedinthesameorder.Objectsareinsertedbasedontheirhashcode.
- NULL elements are allowed in HashSet.

```
publicclassHashSet<E>extendsAbstractSet<E>implementsSet<E
>,Cloneable,Serializable Sample Input and Output:
5
90
56
45
78
25
78
Sample Output:
78wasfoundinth
eset.
```

- HashSet also implements Serializable and Cloneable interfaces.

Answer:(penaltyregime:0%)

Reseta nswer

```
1 import java.util.HashSet;
2 import java.util.Scanner;
3 class prog {
```

```
4   public static void main(String[] args) {
5       Scanner sc= new Scanner(System.in);
6       int n = sc.nextInt();
7       // Create a HashSet object called numbers
8       HashSet<Integer>numbers= new HashSet<>();
9
10      // Add values to the set
11      for(inti=0;i<n;i++)
12      {
13          numbers.add(sc.nextInt());
14      }
15      int skey=sc.nextInt();
16
17      // Show which numbers between 1 and 10 are in the set
18      if(numbers.contains(skey))
19      {
20          System.out.println(skey+ " was found in the set.");
21      }
22      else {
23          System.out.println(skey + " was not found in the set.");
```

```
    }
    }
}
```

	Test	Input	Expected	Got	
✓	1	5	78 was found in the set.	78 was found in the set.	✓
		90			
		56			
		45			
		78			
		25			
		78			
✓	2	3	5 was not found in the set.	5 was not found in the set.	✓
		-1			
		2			
		4			
		5			

Passed all tests! ✓

Question2

Correct

Marked out of 1.00

Write a Java program to compare two sets and retain elements that are the same.

Sample Input and Output:
5
Foo
tball

Hoc
key
Cric
ket
Voll
eyb
all
Bas
ketb
all
7// HashSet 2:
Golf
Cric
ket
Bad
mint
on
Foo
tball

Hoc
key
Voll
eyb
all
Han
dbal
l
SAMPLE OUTPUT:

Foo

tball

Hoc

key

Cric

ket

Voll

eyb

all

Bas

ketb

all

Answer:(penaltyregime:0%)

```
1  importjava.util.H
   ashSet;
   importjava.util.S
2  canner; class
   prog{
3      public static void main(String[] args)
       {
           Scannersc=newScanner(
4          System.in); int
           n1=sc.nextInt();
5          sc.nextLine();
           HashSet<String>set1=newH
           ashSet<>(); for (int
6          i=0;i<n1;i++)
           {
7              set1.add(sc.nextLine());
           }
8          intn2=sc.nextIn
           t();
9          sc.nextLine();
           HashSet<String>set2=newH
1          ashSet<>(); for(int
0          i=0;i<n2;i++)
           {
1              set2.add(sc.nextLine());
1          }
           set1.retainAll(s
           et2); for(String
```

```
        sport:set1)
        {
            System.out.println(sport);
        }
    }
}
```

7	

	Test	Input	Expected	Got	
✓	1	5	Cricket	Cricket	✓
		Football	Hockey	Hockey	
		Hockey	Volleyball	Volleyball	
		Cricket	Football	Football	
		Volleyball			
		Basketball			
		7			
		Golf			
		Cricket			
		Badminton			
		Football			
		Hockey			

		Volleyball			
		Throwball			
✓	2	4	Bus	Bus	✓
		Toy	Car	Car	
		Bus			
		Car			
		Auto			
		3			
		Car			
		Bus			
		Lorry			

Passed all tests!✓

Question3
Correct
Marked out of 1.00

Java HashMap Methods

containsKey()Indicate if an entrywith the specified keyexists in the map

containsValue()Indicateifanentrywiththespecifiedvalueexistsinthemap

putIfAbsent()Writeanentryintothemapbutonlyifanentrywiththesamekeydoesnotalreadyexist remove()Remove an entry from the map

replace()Writetoanentryinthemap onlyifitexistssize()Return the number of entries in the map

Yourtaskistofilltheincompletecodetogetdesiredoutput

Answer:(penaltyregime:0%)

Reset	answer	
1		import java.util.HashMap;
2		import java.util.Map.Entry;
3		import java.util.Set;
4		import java.util.Scanner;
5		class prog

```
6   {
7       public static void main(String[] args)
8       {
9           //Creating HashMap with default initial capacity and load factor
10          HashMap<String, Integer>map = new HashMap<String, Integer>();
11
11          String name;
12
12          int num;
13
13          Scanner sc= new Scanner(System.in);
14
14          int n=sc.nextInt();
15
15           for(inti=0;i<n;i++)
16
16           {
17
17              name=sc.next();
18
18              num= sc.nextInt();
19
19              map.put(name,num);
20
20           }
21
21          //Printing key- value pairs
22
22          Set<Entry<String, Integer>>entrySet= map.entrySet();
23
23
24
24          for (Entry<String, Integer>entry : entrySet)
25
25          {
26
26              System.out.println(entry.getKey()+" : "+entry.getValue());
27
27          }
28
28           System.out.println("");
29
29          //Creating another HashMap
30
30          HashMap<String, Integer>anotherMap= new HashMap<String, Integer>();
31
31          //Inserting key- value pairs to anotherMap using put() method
32
32          anotherMap.put("SIX", 6);
```

```
2
3 3          anotherMap.put("SEVEN", 7);
3 4          //Inserting key- value pairs of map to anotherMap using putAll() method
3 5          anotherMap.putAll(map);// code here
3 6          //Printing key- value pairs of anotherMap
3 7          entrySet= anotherMap.entrySet();
3 8          for (Entry<String, Integer>entry : entrySet)
3 9          {
4 0              System.out.println(entry.getKey()+" : "+entry.getValue());
4 1          }
4 2
4 3          //Adds key- value pair 'FIVE- 5' only if it is not present in map
4 4
4 5          map.putIfAbsent("FIVE", 5);
4 6
4 7          //Retrieving a value associated with key 'TWO'
4 8
4 9          intvalue = map.get("TWO");
5 0          System.out.println(value);
5 1
5 2           //Checking whether key 'ONE' exist in map
```

	Test	Input	Expected	Got	
✓	1	3	ONE : 1	ONE : 1	✓

		ONE	TWO : 2	TWO : 2	
		1	THREE : 3	THREE : 3	
		TWO			
		2	SIX : 6	SIX : 6	
		THREE	ONE : 1	ONE : 1	
		3	TWO : 2	TWO : 2	
			SEVEN : 7	SEVEN : 7	
			THREE : 3	THREE : 3	
			2	2	
			true	true	
			true	true	
			4	4	

Passed all tests!✓

Lab- 11- MCQ

Jump to...

TreeSetexample

StatusFinished

StartedSunday, 10 November 2024, 11:31 AM
CompletedSunday, 10 November 2024, 11:55 AM

Duration23 mins 50 secs

Question1

Correct

Marked out of 5.00

Writeafunctionthattakesaninput String(sentence)andgeneratesanewString(modifiedsentence)byreversingthewordsintheoriginal String, maintaining the words position.

Inaddition,thefunctionshouldbeabletocontrolthereversingofthecase(upperorlowercase)basedonacase_optionparameter,as follows:

Ifcase_option=0,normalreversalofwordsi.e.,iftheoriginalsentenceis" WiproTechNologiesBangaLore",thenewreversedsentence should be " orpiWseigoloNhceTeroLagnaB".

Ifcase_option=1,reversalofwordswithretainingposition' scasei.e.,iftheoriginalsentenceis" WiproTechNologiesBangaLore",thenew reversed sentence should be " OrpiwSeigOlonhcetErolaGnab". Notethatpositions1,7,11,20and25intheoriginalstringareuppercaseW,T,N,BandL. Similarly, positions 1, 7, 11, 20 and 25 in the new string are uppercase O, S, O, E and G. NOTE:

1. Onlyspacecharactershouldbetreatedasthewordseparatori.e.," HelloWorld" shouldbetreatedastwoseparatewords," Hello" and " World". However, " Hello,World", " Hello;World", " Hello- World" or " Hello/World" should be considered as a single word.
2. Non- alphabetic characters in the String should not be subjected to case changes. For example, if case option = 1 and the original sentenceis" WiproTechNologies,Bangalore" thenewreversedsentenceshouldbe" Orpiw,seiGolonhceTErolagnab". Notethatcommahas been treated as part of the word " Technologies," and when comma had to take the position of uppercase T it remained as a comma and uppercase T took the position of comma. However, the words " Wipro and Bangalore" have changed to " Orpiw" and " Erolagnab".
3. Kindlyensurethatnoextra(additional)spacecharactersareembedded withintheresultantreversedString. Examples:

S. No.	input1	input2	output
1	WiproTechnologiesBangalore	0	orpiWseigolonhceTerolagnaB
2	WiproTechnologies,Bangalore	0	orpiW,seigolonhceTerolagnaB
3	WiproTechnologiesBangalore	1	OrpiwSeigolonhcetErolagnab
4	WiproTechnologies,Bangalore	1	Orpiw,seigolonhceTErolagnab

For example:

Input	Result
WiproTechnologi esBangalore 0	orpiW seigolonhce TerolagnaB
WiproTechnologi es,Bangalore 0	orpiW ,seigolonhc eTerolagnaB
WiproTechnologi esBangalore 1	OrpiwSeigolonhce tErolagnab
WiproTechnologi es,Bangalore 1	Orpiw ,seigolonhc eTErolagnab

Answer:(penaltyregime:0%)

```
1  import java.util.*;
   public class SentenceReversal{
       public static void main(String[] args)
2      {
           Scannersc=newScanner(
           System.in); String
3          sentence=sc.nextLine();
           int caseOption=sc.nextInt();
4          if(caseOption!=0 &&caseOption!=1)
           {
               return;
5          }
           Stringresult=reverseWordWithCaseOption(sentence,caseOpt
6          ion); System.out.println(result);
       }
7      public static String reverseWordWithCaseOption(String
       sentence,intcaseOption)
8      {
9
10
11
12
```

```
18          String[] words=sentence.split(" ");
19          StringBuilder result=new StringBuilder();
20          for(String word : words)
21          {
22              StringBuilder reversedWord=new StringBuilder();
23              StringBuilder tempWord=new
                StringBuilder(word).reverse();
24              if(caseOption==0)
25              {
26                  reversedWord.append(tempWord);
27              }
28              else
29              {
30                  for(int i=0;i<word.length();i++)
31                  {
3                       char originalChar=word.charAt(i);
```

```
2
3 3                 char reversedChar=tempWord.charAt(i);
3 4                 if(Character.isUpperCase(originalChar))
3 5                 {
3 6 reversedWord.append(Character.toUpperCase(reve
                                                    rsedChar));
3 7                 }
3 8                 else
                    if(Character.isLowerCase(originalChar))
3 9                 {
4 0 reversedWord.append(Character.toLowerCase(reve
                                                    rsedChar));
4 1                 }
4 2                 else
4 3                 {
4 4                     reversedWord.append(reversedChar);
4 5                 }
4 6             }
4 7         }
```

```
        result.append(reversedWord).append(" ");
    }

    return result.toString().trim();
}
}
```

	Input	Expected	Got	
✓	WiproTechnologiesBangalore 0	orpiW seigolonhce TerolagnaB	orpiW seigolonhce TerolagnaB	✓
✓	WiproTechnologies,Bangalore 0	orpiW ,seigolonhc eTerolagnaB	orpiW ,seigolonhc eTerolagnaB	✓
✓	WiproTechnologiesBangalore 1	OrpiwSeigolonhce tErolagnab	OrpiwSeigolonhce tErolagnab	✓

Passed all tests!✓

Question2

Correct

Youareprovidedwithastringwhichhasasequenceof1’ sand0’ s.

ThissequenceistheencodedversionofaEnglishword.Youaresupposedwriteaprogramto decodetheprovidedstringandfindthe original word.

Eachalphabetisrepresentedby

asequenceof0s. This is as

mentioned below:

Z :0

Y :00

X :000

W :0000

V :00000

U :000000

T :0000000

and so on upto A having 26 0’ s (00000000000000000000000000).

Thesequenceof0’ sintheencodedformareseparatedbyasingle1whichh

elpstodistinguishbetween2letters. Example 1:
input1: 010010001

Thedecodedstring(originalw

ord)willbe:ZYX Example 2:
input1: 0000100000000000000000100000000001000000001000000000001

The decoded string (original word) will be: W IPRO

Note: The decoded string must always be in UPPER case.

For example:

Input	Result
010010001	ZYX
0000100000000000000000100000000001000000001000000000001	W IPRO

Answer:(penaltyregime:0%)

```
1  import java.util.*;
   public class BinaryDecoder{
       public static void main(String[] args)
2      {
           Scannersc=newScanner(
           System.in); String
3          encoded=sc.nextLine();
           String[] sequences= encoded.split("1");
4          StringBuilderdecodedW ord=newString
           Builder(); for(String seq:sequences){
               if(!seq.isEmpty())
5              {
                   intletterPos=seq.le
6                  ngth();
                   if(letterPos<=26)
7                  {
```

```
                    chardecodedChar=(char)('Z'- (letterPos- 1));
                    decodedWord.append(decodedChar);
                }
            }
        }
        System.out.println(decodedWord.toString());
    }
}
```

	Input	Expected	Got	
✓	010010001	ZYX	ZYX	✓
✓	00001000000000000000001000000000001000000000010000000000001	WIPRO	WIPRO	✓

Passed all tests!✓

Question3

Correct

Marked out of 5.00

Given two char arrays in put1[] and in put2[] containing only lowercase alphabets, extracts the alphabets which are present in both arrays (common alphabets).

Get the ASCII values of all the extracted alphabets.

Calculate sum of those ASCII values. Lets call it sum1 and calculate single digit sum of sum1, i.e., keep adding the digits of sum1 until you arrive at a single digit.

Return that single digi

ta so output. Note:

1. Array size ranges from 1 to 10.
2. All the array elements are lower case alphabets.
3. At least one common alphabet will be found in the arrays. Example 1:

input1: {‘a’, ‘b’, ‘c’}

input2:

{‘b’,

’c’}

output:

8

Explanat

ion:

‘b’ and ‘c’ are present

inboththearrays. ASCII
value of ‘ b’ is 98 and
‘ c’ is 99.
98 + 99 = 197
1 + 9 + 7 = 17
1 + 7 = 8

For example:

Input	Result
	8

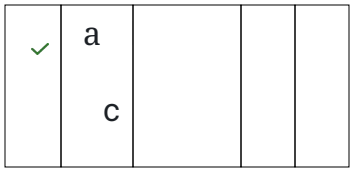
Answer:(penaltyregime:0%)

```
1  import java.io.*;
2  import java.util.*;
3  public class commonAlphabets{
4      public static void main(String[] args)
5      {
6          Scanner sc=new Scanner(System.in);
7          String input1=sc.nextLine().replace(" ,","");
8          char[] array1=input1.toCharArray();
9          String input2=sc.nextLine().replace(" ","");
10         char[] array2=input2.toCharArray();
11         int result=calculateSingleDigitSum(array1,array2);
12         System.out.println(result);
13
```

```
14      }
15      private static int calculateSingleDigitSum(char[] input1,char[] input2)
16      {
17          HashSet<Character>set1=new HashSet<>();
18          for(char c : input1)
19          {
20              set1.add(c);
21          }
22          int sum1=0;
23          for(char c: input2)
24          {
25              if(set1.contains(c))
26              {
27                  sum1+=(int) c;
28              }
29          }
30          return getDigitalRoot(sum1);
31      }
```

```
1
32      private static int
        getDigitalRoot(int sum)
33      {
34          if(sum==0)
35          {
36              return 0;
37          }
38          else
39          {
40              return 1+ ((sum- 1)% 9);
41          }
42      }
43  }
```

	Input	Expected	Got	



Passed all tests!

Lab- 12- MCQ

Jump to...

Identify possible words