RAJALAKSHMI ENGINEERING COLLEGERAJALAKSHMINAGAR,THANDALAM– 602 105

CS23333 Object Oriented Programming Using Java

Laboratory Record Notebook

Name: KARTICKEEYAAN M

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

UniversityRegisterNo: 2116-231501074

CollegeRollNo: 231501074

Semester: 3

AcademicYear: 2023 - 2024

Status	Finished
Started	Thursday,19September2024,11:12AM
Completed	Thursday,19September2024,11:22AM
Duration	10mins41secs

Question**1**

Correct

Markedoutof 5.00

WriteaprogramtofindwhetherthegiveninputnumberisOdd.

Ifthegivennumberisodd,theprogramshouldreturn2elseItshouldreturn1.

Note:Thenumberpassedtotheprogramcaneitherbenegative.positiveorzero.ZeroshouldNOTbetreatedasOdd.

Forexample:

Input	Result
123	2
456	1

Answer:(penaltyregime:0%)

```java
1  import java.io.*;
2  import java.util.*;
3  public class Odd{
4      public static void main(String[]args)
5      {
6  7     Scanner sc=new Scanner(System.in);
8          int a=sc.nextInt();
9          if(a%2==1||a%2==-1)
           {
10             System.out.println(2);
11         }
12         else if(a%2==0)
13         {
14             System.out.println(1);
15         }
16         else if(a==0)
17         {
18             System.out.println(1);
19         }
20      }
21 }
```

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

Passed all tests! ✓

Question **2**

Correct

Markedoutof 5.00

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:

Input	Result
197	7
-197	7

Answer:(penaltyregime:0%)

```java
1  importjava.io.*;
2  importjava.util.*;
3  importjava.math.*;
4  publicclassLast{
5      publicstaticvoidmain(String[]args)
6      {
7          Scannersc=newScanner(System.in);
8          inta=sc.nextInt();
9          a=Math.abs(a);
10         System.out.println(a%10);
11     }
12 }
```

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

Passed all tests! ✓

Question **3**
Correct
Marked out of 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: Last digit of the 267 is 7 Last digit of the 154 is 4 Sum of 7 and 4 = 11 Write a program to help Rohit achieve this for any given two numbers. Note: Tile sign of the input numbers should be ignored. i.e. if the input numbers are 267 and 154, the sum of last two digits should be 11 if the input numbers are 267 and -154, the slim of last two digits should be 11 if the input numbers are -267 and 154, the sum of last two digits should be 11 if the input numbers are -267 and -154, the sum of last two digits should be 11

For example:

Input	Result
267 154	11
267 -154	11
-267 154	11
-267 -154	11

Answer: (penalty regime: 0%)

```java
1  import    java.io.*;
2  3 import java.util.*;
4  import java.math.*;
5  public class add{
6
7      public static void main(String[]args)
8      {
9          Scanner sc=new Scanner(System.in);
10         int a=sc.nextInt();
11         int b=sc.nextInt();
12
13
14         a=Math.abs(a); b=Math.abs(b);   int
           c=(a%10)+(b%10);
           System.out.println(c);
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? ►

Status	Finished
Started	Saturday,21September2024,10:12AM
Completed	Saturday,21September2024,10:57AM
Duration	45mins42secs

Question **1**
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 6     //Functiontoreturntrailing
7 8     //0sinfactorialofn
9     staticintfindTrailingZeros(intn)
10    {
11        intcount=0;
12        if(n<0)//NegativeNumberEdgeCase
13
14            return-1;
15
16        //Initializeresult
17
18
19        //Keepdividingnbypowers
20        //of5andupdatecount
21        for(inti=5;n/i>=1;i*=5)
22            count+=n/i;
23
          returncount;
      }
```

```
24        //DriverCode
25        publicstaticvoidmain(String[]args)
26▼       {
27            intn;
28            Scannersc=newScanner(System.in);
29            n=sc.nextInt();
30            intx=findTrailingZeros(n);
31            System.out.println(x);
32        }
33    }
34  }
```

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

Passed all tests!✓

Question **2**

Correct

Markedoutof 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.

LogictoprintnumberinwordsinJavaprogramming.

Example

Input

1234
Output
OneTwoThreeFour

Input:

16

Output:

onesix

Forexample:

Test Input

		Result
		FourFive
1	45	
2	13	OneThree
3	87	EightSeven

Answer:(penaltyregime:0%)

```java
1  import java.io.*;
2  importjava.util.*;
3  public class Num{
4      publicstaticvoidmain(String[]args)
5      {
6          Scanner sc=new Scanner(System.in);
7          int n=sc.nextInt();
8          Stringst=Integer.toString(n);
9          char[] arr=st.toCharArray();
10         for(int i=0;i<arr.length;i++)
11         {
12             switch(arr[i])
13             {
14                 case'0':
15                     System.out.print("Zero");
16                     break;
17                 case'1':
18                     System.out.print("One");
19                     break;
20                 case'2':
21                     System.out.print("Two");
22                     break;
23                 case'3':
24                     System.out.print("Three");
25                     break;
26                 case'4':
27                     System.out.print("Four");
28                     break;
29                 case'5':
30                     System.out.print("Five");
31                     break;
32                 case'6':
33                     System.out.print("Six");
34                     break;
35                 case'7':
36                     System.out.print("Seven");
37                     break;
38                 case'8':
39                     System.out.print("Eight");
40                     break;
41                 case'9':
42                     System.out.print("Nine");
```

```
43   44                    break;
45   46              }
47 }            }
           }
```

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

Passed all tests!✓

Question **3**

Correct

Markedoutof 5.00

Considerthefollowingsequence:

1stterm:1

2ndterm:121

3rdterm:1213121

4thterm:121312141213121

And so on. Write 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:

Input	Result
1	1
2	1 21
3	1 2131 21
4	1 2131 2141 21312 1

Answer:(penaltyregime:0%)

```java
import java.io.*;
import java.util.*;
public class pattern{
    public static void main(String[]args)
    {
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        String res="1";
        for(int i=1;i<n;i++)
        {
            res+=""+(i+1)+""+res;
        }
        System.out.println(res);
    }
}
```

	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!✓

◄Lab-02-MCQ

Jumpto...

Lab-03-MCQ►

Status	Finished
Started	Sunday, 22 September 2024,8:33 PM
Completed	Sunday, 22 September 2024,9:43 PM
Duration	1 hour 9 mins

Question **1**

Correct

Markedoutof5.00

Youareprovidedwithasetofnumbers(arrayofnumbers).

Youhavetogeneratethesumofspecificnumbersbasedonitspositioninthearraysetprovidedtoyou. This 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(inthiscaseitis5). 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(inthiscaseitis4). (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:

CalculatethesumofallelementsofthearraygeneratedinStep2togetthefinalresult.Theresultwillbe=107. Note:

1) 2)Whilepicking up a number {1, 5, 423, 310, 61540} Step1: Generating the new array based on position, here we get the below Inthegivenfunction,input1[]isthearrayofnumbersandinput2representsthenumberofelementsininput1. Example Inthiscase,thevalueininput1atindex1and3islessthanthevaluerequiredtobepickedupbasedonposition,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.*;
2  import java.util.*;
3  public class arraysp{
4      public static void main(String[] args)
5      {
6          Scanner sc=new Scanner(System.in);
```

```
 7          int sum=0;
 8          int n=sc.nextInt();
 9          int[] arr=new int[n];
10          for(int i=0;i<n;i++)
11▼         {
12              arr[i]=sc.nextInt();
13          }
14          int[] p=new int[n];
15          for(int i=0;i<n;i++)
16▼         {
17              p[i]=(arr[i]/(int) Math.pow(10,i)) %10;
18          }
19          for(int i:p)
20▼         {
21              sum+=i*i;
22          }
23          System.out.println(sum);
24      }
25  }
```

	Input	Expected	Got	
✓	5 1 51 436 7860 41236	107	107	✓
✓	5 1 5 423 310 61540	53	53	✓

Passed all tests! ✓

Question **2**

Correct

Markedoutof5.00

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. Multiply the maximum number (found in step1) to each element of the resultant array. After

the operations are done, return the resultant array.

Example 1:

input1=4(represents the number of elements in the input1 array) input2

= {1, 5, 6, 9}

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

Explanation:

Step1:The maximum number in the given array is 9.

Step2: Subtracting the maximum number 9 from each element of the array:

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

Step3: Multiplying the maximum number 9 to each of the resultant 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(represents the number of elements in the input1 array) input2

= {10, 87, 63, 42, 2}

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

Explanation:

Step1:The maximum number in the given array is 87.

Step2: Subtracting the maximum number 87 from each element of the array:

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

Step3: Multiplying the maximum number 87 to each of the resultant 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(represents the number of elements in the input1 array) input2

= {-9, 9}

Expected Output = {-162, 0}

Explanation:

Step1:The maximum number in the given array is 9.

Step2: Subtracting the maximum number 9 from each element of the array:

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

Step3: Multiplying the maximum number 9 to each of the resultant 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%)

```
1  import java.io.*;
2  importjava.util.*;
3  public class arraychange{
4      public static void main(String[] args)
5      {
6          Scannersc=newScanner(System.in); int
7          n=sc.nextInt();
8          int[] arr=newint[n];
9          for(int i=0;i<n;i++)
10         {
11
12             arr[i]=sc.nextInt();
13         }
14         int max=0;
15         for(inti=0;i<n;i++)
16         {
17             if (arr[i]>max)
18             {
19                 max=arr[i];
20             }
21         }
22         for(inti=0;i<n;i++)
23         {
24
25             arr[i]-=max;
26             arr[i]*=max;
27         }
28         for(inti=0;i<n;i++)
29         {
30             System.out.print(arr[i]+ " ");
31         }
32     }
33 }
```

	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!✓

Question **3**

Correct

Markedoutof5.00

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:IftherearemorethanonegroupofelementsinthearrayhavingthelongestsequenceofPOSITIVEnumbers,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:

TheinputarraycontainsfoursequencesofPOSITIVEnumbers,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}

Expectedoutput=-1

Explanation:

ThereareNOpositivenumbersintheinputarray.Therefore,theexpectedoutputforsuchcases=-1. Example 3:

input1 = 16

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

Expectedoutput=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%)

```java
 1 ▼ import java.io.*;
 2   importjava.util.*;
 3▼  public class arraypos{
 4       public static void main(String[] args)
 5▼      {
 6
 7 8         Scannersc=newScanner(System.in); int
 9           n=sc.nextInt();
              int[]arr=newint[n]; int
              max1=0;
10           int ci=0;
```

```
11          int    csum=0;    int
12          tsum=0;
13          for(int i=0;i<n;i++)
14          {
15              arr[i]=sc.nextInt();
16          }
17          for(int i=0;i<n;i++)
18          {
19              if(arr[i]>0)
20              {
21                  cl++;
22                  csum+=arr[i];
23              }
24              else
25              {
26                  if(cl>maxl)
27                  {
28                      maxl=cl;
29                      tsum=csum;
30                  }
31                  else if(cl==maxl)
32                  {
33                      tsum+=csum;
34                  }
35                  cl=0;
36                  csum=0;
37              }
38          }
39          if(cl>maxl)
40          {
41              tsum=csum;
42          }
43          else if(cl==maxl)
44          {
45              tsum+=csum;
46          }
47          if(maxl==0)
48          {
49              tsum=-1;
50          }
51          if(tsum==150)
52          {
```

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

Passed all tests! ✓

◄ Lab-03-MCQ

Jump to...

Simple Encoded Array ►

Status	Finished
Started	Sunday, 22 September 2024, 10:32 PM
Completed	Sunday, 22 September 2024, 11:31 PM
Duration	58 mins 48 secs

Question **1**
Correct
Markedoutof 5.00

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(Stringname)

Student(Stringname,introllno)

Input:

Noinput

Output:

No-argconstructorisinvoked
1 argconstructorisinvoked
2 argconstructorisinvoked
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%)

```java
publicclassStudent{
    privateStringname;
    private int rollno;
    public Student()
    {
        System.out.println("No-arg constructor is invoked");
        this.name=null; this.rollno=0;


    }
    publicStudent(Stringname)
    {
        System.out.println("1 arg constructor is invoked");
        this.name=name;
        this.rollno=0;
        return;

    }
    publicStudent(Stringname,introllno)
    {
        System.out.println("2 arg constructor is invoked");
        this.name=name;
        this.rollno=rollno;
        return;


    }
    @Override
    publicStringtoString()
    {
        return"Name="+name+",Rollno="+rollno;
    }
    publicstaticvoidmain(String[]args)
    {
        Students1=newStudent();  Student  s2=new
        Student("Rajalakshmi");  Student  s3=new
        Student("Lakshmi",101);
        System.out.println(s1);
        System.out.println(s2);
        System.out.println(s3);

    }
```

```
39}
40
```

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

Passed all tests✓

Create a Class Mobilewith the attributes listed below,

private String manufacturer;

privateStringoperating_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;

}

StringgetManufacturer(){

 return manufacturer;}

DisplaytheobjectdetailsbyoverridingthetoString()method.

Forexample:

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

Answer:(penaltyregime:0%)

```
1▼ 2 publicclassMobile{
3   4     privateStringmanufacturer;
5 6▼     private String operating_system;
7   8     private String color;
9 10     privateintcost;
11        public Mobile(String manufacturer,Stringoperating_system,Stringcolor,intcost){ this.manufacturer=manufacturer;
12            this.operating_system=operating_system;
13 ▼        this.color=color;
14            this.cost=cost;
15        }
16        publicvoidsetManufacturer(Stringmanfacturer)
17▼       {
18            this.manufacturer=manufacturer;
19        }
20        publicStringgetManufacturer()
21▼       {
22            returnmanufacturer;
23        }
24        publicStringgetOperatingSystem()
25 ▼      {
26            returnoperating_system;
27        }
28        publicvoidsetColor(Stringcolor)
29▼       {
30            this.color=color;
31        }
32
33        }
34▼       publicvoidsetCost(intcost)
35        {
36            this.cost=cost;
37        }
38▼       @Override
39        publicStringtoString()
          {


              return"manufacturer="+manufacturer+"\noperating_system="+operating_system+"\ncolor="+color+"\nc
          }
          publicstaticvoidmain(String[]args)
          {
              Mobilemobile=newMobile("Redmi","Andriod","Blue",34000);
```

```
40 41            System.out.println(mobile);
42 }        }
```

	Test	Expected	Got	
✓	1	manufacturer=Redmi operating_system=Andriod color=Blue cost=34000	manufacturer=Redmi operating_system=Andriod color=Blue cost=34000	✓

Passed all tests!✓

Question **3**
Correct
Markedoutof 5.00

Create a class called "Circle" with a radius attribute. You can access and modify this attribute using getter and setter methods. Calculate the area and circumference of the circle.

Area of Circle =

πr2 Circumference=2

πr Input:

2

Output:

Area=12.57
Circumference=12.57 For
example:

Test	Input	Result
1	4	Area=50.27 Circumference=25.13

Answer: (penaltyregime:0%)

Reset answer

```java
1  import java.io.*;
2  import java.util.*;
3  class Circle
4  {
5      private double radius;
6  7    public Circle(double radius){
8  9    this.radius=radius;
10

       }
11     public void setRadius(double radius){
12         this.radius=radius;
13
14
15     }
16     public double getRadius()        {
17         return radius;
18
19
20     }
21     public double calculateArea(){//completethebelowstatement
22         return Math.PI*radius*radius;
23
24     }
25     public double calculateCircumference()      {
26         return 2*Math.PI*radius;
27     }
28  }
29  class prog{
30     public static void main(String[]args){
31         int r;
32         Scanner sc=new Scanner(System.in);
33         r=sc.nextInt();
34         Circle c=new Circle(r);
35         System.out.println("Area="+String.format("%.2f",c.calculateArea()));
36         System.out.println("Circumference="+String.format("%.2f",c.calculateCircumference()));
37
38
39
40     }
41  }
```

	Test	Input	Expected	Got	
✓	1	4	Area=50.27 Circumference=25.13	Area=50.27 Circumference=25.13	✓
✓	2	6	Area=113.10 Circumference=37.70	Area=113.10 Circumference=37.70	✓
✓	3	2	Area=12.57 Circumference=12.57	Area=12.57 Circumference=12.57	✓

Passed all tests! ✓

◄ Lab-04-MCQ

Jumpto...

NumberofPrimesinaspecifiedrange ►

Dashboard/My courses/CS23333-OOPUJ-2023/Lab-05-Inheritance/Lab-05-Logic Building

Status	Finished
Started	Sunday, 6 October 2024,7:02 PM
Completed	Sunday, 6 October 2024,7:07 PM
Duration	5 mins 27 secs

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 CreateaSavingsAccountobject(A/cNo.SA1000)withinitialbalanceof$300: Try to withdraw $250 from SA1000! Minimum balance of $100 required! Balance after trying to withdraw $250: $300.0

Answer:(penaltyregime:0%)

Resetanswer

```
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
16
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
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) {
```

```
51         System.out.println("Create a Bank Account object (A/c No. BA1234) with initial balance of $500:");
52    ◄    BankAccount BA1234 = new BankAccount("BA1234", 500.0);
```

	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! ✓

Question **2**

Correct

Markedoutof5.00

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:

StringcollegeName;

public College() { }

publicadmitted(){}

Student:

StringstudentName;

String department;

publicStudent(StringcollegeName,StringstudentName,Stringdepart){}

public toString()

Expected Output:

AstudentadmittedinREC
CollegeName : REC
StudentName:Venkatesh
Department : CSE

For example:

Result
~~AstudentadmittedinREC~~
CollegeName : REC
StudentName : Venkatesh
Department : CSE

Answer:(penaltyregime:0%)

Resetanswer

```
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;
21      }
22
23      @Override
24      public String toString() {
25          return "CollegeName : " + collegeName+ "\n" +
26          "StudentName  :  "  +  studentName+  "\n"  +
27          "Department : " + department;
28      }
29  }
30
31  public class sample {
32      public static void main(String[] args) {
33          Student s1 = new Student("REC", "Venkatesh", "CSE");
34          s1.admitted();// Print "A student admitted in REC"
35          System.out.println(s1);
```

```
36        }
37 }
```

	Expected	Got	
✓	AstudentadmittedinREC CollegeName : REC StudentName : Venkatesh Department : CSE	AstudentadmittedinREC CollegeName : REC StudentName : Venkatesh Department : CSE	✓

Passed all tests! ✓

Question **3**
Correct
Markedoutof5.00

Create a classMobile withconstructor and a methodbasicMobile().

Create a subclass CameraMobilewhich extends Mobile class , withconstructor anda methodnewFeature().

CreateasubclassAndroidMobilewhichextendsCameraMobile,withconstructorandamethodandroidMobile(). 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
CameraMobileisManufactured
AndroidMobileisManufactured
Camera Mobile with 5MG px
TouchScreenMobileisManufactured

For example:

Result
Basic Mobile is Manufactured Camera Mobile is Manufactured AndroidMobileisManufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured

Answer:(penaltyregime:0%)

```
1  class Mobile {
2      public Mobile() {
3          System.out.println("Basic Mobile is Manufactured");
4      }
5
6      public void basicMobile() {
7          System.out.println("Basic Mobile functionality");
8      }
9  }
10
11 class CameraMobileextends Mobile {
12     public CameraMobile() {
13         System.out.println("Camera Mobile is Manufactured");
14     }
15
16     public void newFeature() {
17         System.out.println("Camera Mobile with 5MG px");
18     }
19 }
20
21 class AndroidMobileextends CameraMobile{
22     public AndroidMobile() {
23         System.out.println("Android Mobile is Manufactured");
24     }
25
26     public void androidMobile() {
27         System.out.println("Touch Screen Mobile is Manufactured");
28     }
29 }
30
31 public class sample {
32     public static void main(String[] args) {
33         AndroidMobile android = new AndroidMobile();
34         android.newFeature();
35         android.androidMobile();
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? ►

Dashboard/Mycourses/CS23333-OOPUJ-2023/Lab-06-String,StringBuffer/Lab-06-LogicBuilding

Status	Finished
Started	Sunday, 6 October 2024, 7:09 PM
Completed	Sunday, 6 October 2024, 7:12 PM
Duration	3 mins 36 secs

Question **1**

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.   Outputshouldbereturnedinuppercase.

Case 1:

Checkwhetherthetwoalphabetsaresame.

If yes, then take one alphabet from it and add it to the output.

Example 1:

input1=ww:ii:pp:rr:oo

output = WIPRO

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.

Example 2”

input1=zx:za:ee

output = BYE

Explanation

word1iszx,botharenotsamealphabets 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: (penalty regime: 0%)

```java
1   import java.util.Scanner;
2
3   public class Main{
4       public static void main(String[]args)
5       {
6 7         Scanner sc=new Scanner(System.in);
            String s=sc.nextLine();
8           String[]words=s.split(":");
9           StringBuilder output=new StringBuilder();
10          for(String i:words)
11          {
12              char ch1=i.charAt(0);
13              char ch2=i.charAt(1);
14
15              if(ch1==ch2)
16              {
17                  output.append(Character.toUpperCase(ch1));
18              }
19              else
20              {
21                  int pos1=ch1-'a'+1;
22                  int pos2=ch2-'a'+1;
23
24                  int max=Math.max(pos1,pos2);
25                  int min=Math.min(pos1,pos2);
26
27
28                  int position=max-min;
29                  char result=(char)('A'+position-1);
30
31                  output.append(result);
32              }
33          }
34
35          System.out.println(output.toString());
36      }
    }
```

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

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

Given 2 strings input1 & input2.

·   Concatenate both the strings.

·   Remove duplicate alphabets & whitespaces.

·   Arrange the alphabets in descending order.

Assumption 1:

There will either be alphabets, white spaces or null in both the inputs.

Assumption 2:

Both inputs will be in lowercase.

Example 1:

Input1: apple

Input 2: orange

Output: rponlgea

Example 2:

Input 1: fruits

Input2: aregood

Output: utsroigfeda

Example 3:

Input1: ""

Input 2: ""

Output: null

For example:

Test Input

apple orange		Result rponlgea
1		
2	fruits aregood	utsroigfeda

Answer: (penalty regime: 0%)

```java
1  import java.util.*;
2
3  public class StringMergeSort
4  {
5      public static String mergeAndSort(String input1, String input2)
6      {
7          String concatenated = input1 + input2;
8          Set<Character> uniqueChars = new HashSet<>();
9          for(char ch : concatenated.toCharArray())
10         {
11             if(ch != ' ')
12             {
13                 uniqueChars.add(ch);
14             }
15         }
16
17
18         List<Character> sortedList = new ArrayList<>(uniqueChars);
19         Collections.sort(sortedList, Collections.reverseOrder());
20
21         StringBuilder result = new StringBuilder();
22         for(char ch : sortedList)
23         {
24             result.append(ch);
25         }
26         return result.length() > 0 ? result.toString() : "null";
27     }
```

```
28  29
30  ▼    publicstaticvoidmain(String[]args)
31  32   {
33  34        Scannerscanner=newScanner(System.in);
35  36
37
38            Stringinput1=scanner.nextLine();
39
40            Stringinput2=scanner.nextLine();
41
42  }         Stringresult=mergeAndSort(input1,input2);
              System.out.println(result);
              scanner.close();
         }
```

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

Passed all tests!✓

Question **3**

Correct

Marked out of 5.00

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").

The processing of each word is to be done as follows:

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.

If the word to be processed is "Nice":

Its Middle-to-Begin part will be "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":

Its Middle-to-Begin part will be "doT". Its

Middle-to-End part will be "day".

So, merged together these two parts would form "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.

Expected output:

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

Example 1:

input1 = "Today is a Nice Day" input2 =

41

output = "iNcedoTday"

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.

For example:

Input	Result
TodayisaNiceDay 41	iNcedoTday
Fruits like Mango and Apple are common but Grapes are rare 39	naMngoarGpes

Answer: (penalty regime: 0%)

```java
1  import java.util.Scanner;
2
3  public class WordProcessor {
4      public static void main(String[] args) {
5          Scanner sc = new Scanner(System.in);
6
7          String input = sc.nextLine();
8          int number = sc.nextInt();
9          String[] words = input.split("");
10
```

```
11 12        int pos1=number/10;
13 14        int pos2=number%10;
15 16
17 18        pos1--;
19 20        pos2--;
21
22           String result1=processWord(words[pos1]);
23           String result2=processWord(words[pos2]);
24▼
25
26           String result=result1+" "+result2;
27           System.out.println(result);
28       }
29
30       private static String processWord(String word){
31           int len=word.length();
32▼          int mid=len/2;
33
34           String middleToBegin;
35           String middleToEnd;
36
37▼          if(len%2==0)
38           {
39               middleToBegin=new StringBuilder(word.substring(0,mid)).reverse().toString();
40               middleToEnd=word.substring(mid);
41 42         }
43 }          else
             {
                 middleToBegin=new StringBuilder(word.substring(0,mid+1)).reverse().toString();
                 middleToEnd=word.substring(mid);
             }
             return middleToBegin+middleToEnd;
       }
```

	Input	Expected	Got	
✓	TodayisaNiceDay 41	iNcedoTday	iNcedoTday	✓
✓	Fruits like Mango and Apple are common but Grapes are rare 39	naMngoarGpes	naMngoarGpes	✓

Passed all tests!✓

Jumpto...

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
Markedoutof5.00

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

interfacePlayable{
   void play();
}

classFootballimplementsPlayable{
  String name;
  publicFootball(Stringname){
    this.name=name;
  }
  public void play() {
  System.out.println(name+"isPlayingfootball");
  }
}

Similarly,createVolleyballandBasketball classes.

Sample output:

Sadhvin is Playing football
SanjayisPlayingvolleyball
Sruthi is Playing basketball

For example:

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

Answer:(penaltyregime:0%)

```java
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");
19     }
20  }
21
22  class Volleyball implements Playable
23  {
24      String name;
25
26      public Volleyball(String name)
27      {
28          this.name = name;
29      }
30
31      public void play()
32      {
33          System.out.println(name + " is Playing volleyball");
```

```
34        }
35    }
36
37    class Basketball implements Playable
38▼{
39        String name;
40
41        public Basketball(String name)
42▼    {
43            this.name = name;
44        }
45
46        public void play()
47▼    {
48  49        System.out.println(name + " is Playing basketball");
50        }
51    }
52

      public class test
```

	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!✓

Question **2**

Correct

Markedoutof5.00

Createinterfacesshownbelow.

```
 interface Sports {
public void setHomeTeam(String name);
publicvoidsetVisitingTeam(Stringname);
}
 interface Football extends Sports
{publicvoidhomeTeamScored(intpoints);
publicvoidvisitingTeamScored(intpoints);}
```

createaclassCollegethatimplementstheFootballinterfaceandprovidesthenecessaryfunctionalitytotheabstractmethods. sample Input:

Rajalakshmi

Saveetha22

21

Output:

Rajalakshmi 22 scored
Saveetha 21 scored
RajalakshmiistheWinner!

For example:

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

Answer:(penaltyregime:0%)

Resetanswer

```java
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     public void visitingTeamScored(int points)
35
```

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

Passed all tests!✓

Question **3**

Correct

Markedoutof5.00

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

CreateanRBIinterfacewithavariableStringparentBank="RBI"andabstractmethodrateOfInterest(). 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  39          SBI sbiBank= new SBI();
40  41          Karur karurBank= new Karur();
42  43
44  45          sbiBank.policyNote();
46  47          RBI.regulations();
}

                System.out.println("SBI rate of interest: " + sbiBank.rateOfInterest() + " per annum.");
                System.out.println("Karur rate of interest: " + karurBank.rateOfInterest() + " per annum.");
         }
```

	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 per annum.	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.	✓

Passed all tests!✓

◄ Lab-07-MCQ

Jump to...

Generate series and find Nth element ►

Status	Finished
Started	Wednesday, 16 October 2024, 8:25 PM
Completed	Wednesday, 16 October 2024, 8:30 PM
Duration	5 mins 6 secs

Question **1**
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 finalcannot 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("Thisisafinalmethod.");
}

3. FinalClass:

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

GivenaJavaProgramthatcontainsthebuginit,yourtaskistoclearthebugtotheoutput. 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%)

Resetanswer

```
1   class FinalExample{
2
3
4       final int maxSpeed= 120;
5
6
7       public final void displayMaxSpeed() {
8           System.out.println("The maximum speed is: " + maxSpeed+ " km/h");
9       }
10  }
11
12  class SubClassextends FinalExample{
13
14      public void showDetails() {
15          System.out.println("This is a subclass of FinalExample.");
16      }
17  }
18
19  class prog {
20      public static void main(String[] args) {
21          FinalExample obj = new FinalExample();
22          obj.displayMaxSpeed();// This will print the maximum speed
23
24          SubClasssubObj= new SubClass();
25          subObj.showDetails();// this will print the subclass details
26
27      }
28  }
```

	Test 1	Expected	Got	
✓		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! ✓

|	Test	Expected	Got	
✓		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! ✓

Question **2**

Correct

Markedoutof5.00

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:
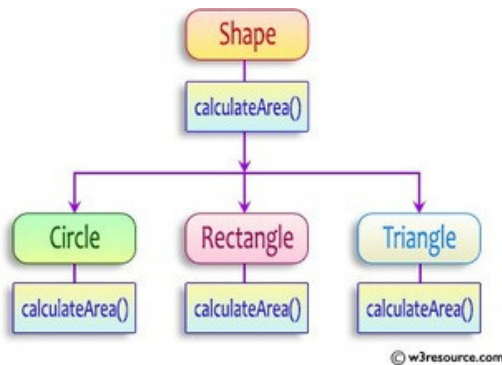

```
 abstract class Shape {
    public abstract double calculateArea() ;
    }
}
```

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
AreaofaRectangle:30.00
Area of a Triangle :6.00
For example:

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

Answer:(penaltyregime:0%)

```java
 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
14        @Override
15▼       public double calculateArea() {
16            return Math.PI* radius * radius;
17        }
18
19    }

20▼   class Rectangle extends Shape {
21        private double length;
22        private double breadth;
23
24▼       public Rectangle(double length, double breadth) {
25            this.length= length;
26            this.breadth= breadth;
27        }
28
29
30 ▼      @Override
31        publicdoublecalculateArea(){ return
32
33            length * breadth;
34        }
      }

35▼   class Triangle extends Shape {
36        private double base;
37        private double height;
38
39▼       public Triangle(double base, double height) {
40            this.base= base;
41            this.height= height;
42        }
43
44
45        @Override
46▼       publicdoublecalculateArea(){ return
47
48            0.5 * base * height;
49        }
50    }

51▼public class test{
52▼       public static void main(String[] args) {
```

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

Passed all tests!✓

Question **3**

Correct

Markedoutof5.00

Asalogicbuildinglearneryouaregiventhetasktoextractthestringwhichhasvowelasthefirstandlastcharactersfromthegivenarrayof Strings.

Step1:ScanthroughthearrayofStrings,extracttheStringswithfirstandlastcharactersasvowels;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:Stringarray.

Example 1:

input1: 3

input2:{"oreo","sirish","apple"}

output: oreoapple

Example 2:

input1: 2

input2:{"Mango","banana"} output:

no matches found Explanation:

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

Hencetheoutputisnomatchesfound. Example

3:

input1: 3

input2:{"Ate","Ace","Girl"}

output: ateace

For example:

Input	Result
3 oreosirishapple	oreoapple
2 Mango banana	no matches found
3 Ate Ace Girl	ateace

Answer:(penaltyregime:0%)

```
 1  import java.util.Scanner;
 2
 3  public class VowelEndStrings{
 4      public static void main(String[] args)
 5      {
 6          Scanner sc= new Scanner(System.in);
 7          int n = sc.nextInt();
 8
 9          String[] arr= new String[n];
10          for(int i= 0; i<n; i++)
11          {
12              arr[i] = sc.next();
13          }
14
15          String s = "";
16          boolean found = false;
17
18          for (String i: arr)
19          {
```

```
20            if ("aeiouAEIOU".indexOf(i.charAt(0)) != -1 &&"aeiouAEIOU".indexOf(i.charAt(i.length() - 1)) != -1)
21  ▼        {
22 23            s += i;
24 25            found = true;
26 27        }
28  ▼    }
29 30
31
32  ▼    if (found)
33 34    {
35 36        System.out.println(s.toLowerCase());
37 38    }
}        else
         {
             System.out.println("no matches found");
         }

         sc.close();
     }
```

	Input	Expected	Got	
✓	3 oreosirishapple	oreoapple	oreoapple	✓
✓	2 Mango banana	no matches found	no matches found	✓
✓	3 Ate Ace Girl	ateace	ateace	✓

Passed all tests!✓

◄ Lab-08-MCQ

Jump to...

FindStringCode►

Dashboard / Mycourses / CS23333-OOPUJ-2023 / Lab-09-ExceptionHandling / Lab-09-LogicBuilding

Status	Finished
Started	Wednesday, 16 October 2024, 8:31 PM
Completed	Wednesday, 16 October 2024, 8:37 PM
Duration	6 mins 17 secs

Question **1**

Correct

Markedoutof 5.00

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

	Input	Expected	Got	
✓	3 5 21	8	8	✓

	Input	Expected	Got	
✓	2 1 g	You entered bad data.	You entered bad data.	✓

Passed all tests! ✓

	Input	Expected	Got	
✓	2 1 g	You entered bad data.	You entered bad data.	✓

Passed all tests! ✓

Question **2**
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.ArithmeticException:/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 1 0412 8	java.lang.ArithmeticException:/byzero Iamalwaysexecuted

Answer:(penaltyregime:0%)

```java
import java.util.Scanner;

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

        int n=sc.nextInt();
        int[] arr=new int[n];
        for(int i=0;i<n;i++){
            arr[i]=sc.nextInt();
        }

        try
        {
            int result=arr[0]/arr[1];

            System.out.println(arr[3]);
        }
        catch(ArithmeticException e)
        {
            System.out.println("java.lang.ArithmeticException:"+e.getMessage());
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("java.lang.ArrayIndexOutOfBoundsException:"+e.getMessage());
        }
        finally
        {
            System.out.println("Iamalwaysexecuted");
        }
    }
}
```

	Test	Input	Expected	Got	
✓	1	6 1 04 1 28	java.lang.ArithmeticException:/byzero Iamalwaysexecuted	java.lang.ArithmeticException:/byzero Iamalwaysexecuted	✓
✓	2	3 1020 30	java.lang.ArrayIndexOutOfBoundsException:Index 3outofboundsforlength3 Iamalwaysexecuted	java.lang.ArrayIndexOutOfBoundsException:Index 3outofboundsforlength3 Iamalwaysexecuted	✓

Passed all tests! ✓

Question**3**

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.
Error:37isodd.
```

Fillthepreloadedanswertogettheexpectedoutput.

Forexample:

Result
82 is even. Error:37isodd.

Answer:(penaltyregime:0%)

Reset answer

```java
1  classprog
2  {
3      publicstaticvoidmain(String[]args)
4      {
5
6 7 8      intn=82;
9          trynumber(n);
10         n=37;
11         trynumber(n);
       }

       publicstaticvoidtrynumber(intn)
12     {
13         try
14         {
15             checkEvenNumber(n);//CallthecheckEvenNumber()method
16             System.out.println(n+"iseven.");
17         }
18         catch(IllegalArgumentExceptione)
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:37isodd.	82 is even. Error:37isodd.	✓

Passed all tests!✓

◄Lab-09-MCQ

Jumpto...

The"NambiarNumber"Generato▶

Status	Finished
Started	Monday, 4 November 2024, 8:28 AM
Completed	Monday, 4 November 2024, 8:50 AM
Duration	21 mins 47 secs

Question **1**

Correct

Marked out of 1.00

Given an ArrayList, the task is to get the first and last element of the ArrayList in Java.
Input: ArrayList=[1,2,3,4] Output:
First = 1, Last = 4

Input: ArrayList=[12,23,34,45,57,67,89]
Output: First=12, Last=89

Approach:

1. Get the ArrayList with elements.
2. Get the first element of ArrayList using the get(index) method by passing index=0.
3. Get the last element of ArrayList using the get(index) method by passing index=size−1.

Answer: (penalty regime: 0%)

```java
1   import java.util.*;
2   public class Main{
3       public static void main(String[]args){
4 5         Scanner scanner=new Scanner(System.in);
6 7         int n=scanner.nextInt();
8           ArrayList<Integer>arrayList=new ArrayList<>();
9           for(int i=0;i<n;i++)
10          {
11              arrayList.add(scanner.nextInt());
12          }
13          if(!arrayList.isEmpty())
14          {
15              int first=arrayList.get(0);                    int
16              last=arrayList.get(arrayList.size()-1);
17              System.out.println("ArrayList:"+arrayList);
18              System.out.println("First:"+first+",Last:"+last);
19          }
20          else
21          {
22              System.out.println("TheArrayListisempty:");
23          }
        }
    }
```

	Test	Input	Expected	Got	
✓	1	6 30 20 40 50 10 80	ArrayList:[30,20,40,50,10,80] First:30,Last:80	ArrayList:[30,20,40,50,10,80] First:30,Last:80	✓
✓	2	4 5 15 25 35	ArrayList:[5,15,25,35] First:5,Last:35	ArrayList:[5,15,25,35] First:5,Last:35	✓

Passed all tests ✓

Question **2**

Correct

Markedoutof 1.00

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.indexOf());

list.lastIndexOf()

list.contains()

list.size());

list.add();

 list.remove();

TheabovemethodsareusedforthebelowJavaprogram.

Answer:(penaltyregime:0%)

Reset answer

```
1  import java.util.*;
2  im3p ort4j ava.▼io.*;
   class prog{

5        public static void main(String[]args)
6      {
7            Scannersc=new Scanner(System.in);
8            int n=sc.nextInt();
9
10           ArrayList<Integer>list=new ArrayList<Integer>();
11           for(int i=0;i<n;i++){
12               list.add(sc.nextInt());
13           }
14           System.out.println("ArrayList:"+list);
15           list.set(1,100);
16           System.out.println("Indexof100="+list.indexOf(100));
17
18
19           //Gettingtheindexoflastoccurrenceof100
             System.out.println("LastIndexof100="+list.lastIndexOf(100));
20           //Checkwhether200isinthelistornot
             System.out.println(list.contains(200));//Output:false
21
22 23
24 25        //PrintArrayListsize
26 27        System.out.println("SizeOfArrayList="+list.size());
28           //Inserting500atindex1
29           list.add(1,500);                              //codehere
30
             //Removinganelementfromposition3
             list.remove(3);                              //codehere
             System.out.print("ArrayList:"+list);
         }
     }
```

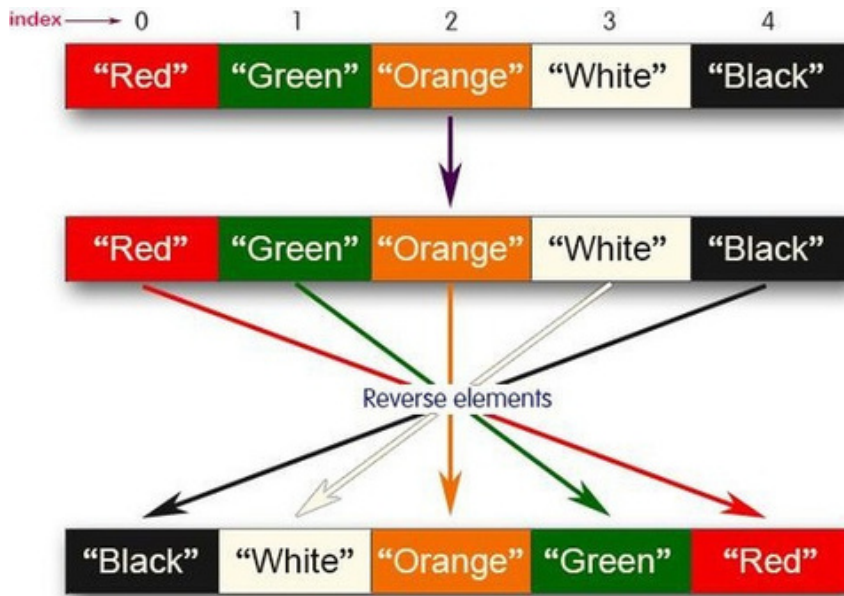|	Test	Input	Expected	Got	
✓	1	5 1 2 3 100 5	ArrayList:[1,2,3,100,5] Indexof100=1 LastIndexof100=3 false SizeOfArrayList=5 ArrayList:[1,500,100,100,5]	ArrayList:[1,2,3,100,5] Indexof100=1 LastIndexof100=3 false SizeOfArrayList=5 ArrayList:[1,500,100,100,5]	✓

Passed all tests✓

Question **3**
Correct
Marked out of 1.00

Write a Java program to reverse elements in an array list.


```
Sample input and Output: Red
Green
Orange
White
Black
Sample output
List before reversing:
[Red,Green,Orange,White,Black] List
after reversing :
[Black,White,Orange,Green,Red]
```

Answer: (penalty regime: 0%)

```java
import java.util.*;
public class ReverseArrayList{
    public static void main(String[]args){
        Scanner scanner=new Scanner(System.in);
        ArrayList<String>colorList=new ArrayList<>();
        int n=scanner.nextInt();
        scanner.nextLine();
        for(int i=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 Green Orange White Black	Listbeforereversing: [Red,Green,Orange,White,Black] Listafterreversing: [Black,White,Orange,Green,Red]	Listbeforereversing: [Red,Green,Orange,White,Black] Listafterreversing: [Black,White,Orange,Green,Red]	✓
✓	2	4 CSE AIML AIDS CYBER	Listbeforereversing: [CSE,AIML,AIDS,CYBER] Listafterreversing: [CYBER,AIDS,AIML,CSE]	Listbeforereversing: [CSE,AIML,AIDS,CYBER] Listafterreversing: [CYBER,AIDS,AIML,CSE]	✓

Passed all tests!✓

◄Lab-10-MCQ

Jumpto...

Lab-11-MCQ►

Status	Finished
Started	Friday, 8 November 2024,5:24 PM
Completed	Friday, 8 November 2024,5:55 PM
Duration	31 mins 1 sec

Question **1**

Correct

Marked out of 1.00

Java HashSet class implements the Set interface, backed by a hashtable which is actually a HashMap instance.

No guarantee is made as to the iteration order of the hashsets which means that the class does not guarantee the constant order of elements over time.

This class permits the null element.

The class also offers constant time performance for the basic operations like add, remove, contains, and size assuming the hash function disperses the elements properly among the buckets.

Java HashSet Features

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.
- Objects that you insert in HashSet are not guaranteed to be inserted in the same order. Objects are inserted based on their hashcode. NULL elements are allowed in HashSet.
- HashSet also implements **Serializable** and **Cloneable** interfaces.

```
public class HashSet<E> extends AbstractSet<E> implements Set<E>, Cloneable, Serializable    Sample   Input
and Output: 5 90 56
45
78
25
78
Sample Output:
78 was found in the set.
Sample Input and output: 3
2
7
9
5
Sample Input and output:
5 was not found in the set.
```

Answer: (penalty regime: 0%)

Reset answer

```java
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(int i=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.");
24     }
25     }
26 }
```

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

Passed all tests! ✓

Question **2**

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

Football

Hockey

Cricket

Volleyball

Basketball

7   // **HashSet 2:**

GolfCricket

Badminton Football

Hockey   Volleyball

  Handball **SAMPLE**

OUTPUT: Football

Hockey   Cricket

Volleyball

Basketball

Answer: (penalty regime: 0%)

```java
import java.util.HashSet;
import java.util.Scanner;
class prog{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in); int
n1=sc.nextInt();
        sc.nextLine();
        HashSet<String>set1=new HashSet<>(); for
(int i=0;i<n1;i++)
        {



            set1.add(sc.nextLine());
        }
        int n2=sc.nextInt();
        sc.nextLine();
        HashSet<String>set2=new HashSet<>();
        for(int i=0;i<n2;i++)
        {
            set2.add(sc.nextLine());
        }
        set1.retainAll(set2);
        for(String sport:set1)
        {
            System.out.println(sport);
        }
    }
}
```

	Test	Input	Expected	Got	
✓	1	5 Football Hockey Cricket Volleyball Basketball 7 Golf Cricket Badminton Football Hockey Volleyball Throwball	Cricket Hockey Volleyball Football	Cricket Hockey Volleyball Football	✓
✓	2	4 Toy Bus Car Auto 3 Car Bus Lorry	Bus Car	Bus Car	✓

Passed all tests! ✓

Question **3**

Correct

Marked out of 1.00

Java HashMap Methods

containsKey() Indicate if an entry with the specified key exists in the map

containsValue() Indicate if an entry with the specified value exists in the map

putIfAbsent() Write an entry into the map but only if an entry with the same key does not already exist

remove() Remove an entry from the map

replace() Write to an entry in the map only if it exists size() Return

the number of entries in the map

Your task is to fill the incomplete code to get desired output

Answer: (penalty regime: 0%)

```
Reset answer
```

```java
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 11      HashMap<String, Integer>map = new HashMap<String, Integer>();
            String name;
12 13      Scanner sc= new Scanner(System.in);
            int n=sc.nextInt();
14 15      for(int i=0;i<n;i++)
16         {
17
18 19
20
21
22            name=sc.next();
23 24         num= sc.nextInt();
25            map.put(name,num);
26         }
27         //Printing key-value pairs
28         Set<Entry<String, Integer>>entrySet= map.entrySet();
29 30
31 32      for (Entry<String, Integer>entry : entrySet)
33         {
34            System.out.println(entry.getKey()+" : "+entry.getValue());
35         }
36          System.out.println(" ---------------- ");
37         //Creating another HashMap
38         HashMap<String, Integer>anotherMap= new HashMap<String, Integer>();
39         //Inserting key-value pairs to anotherMap using put() method
40
41 42      anotherMap.put("SIX", 6);
43         anotherMap.put("SEVEN", 7);
44         //Inserting key-value pairs of map to anotherMap using putAll() method
45         anotherMap.putAll(map);// code here
46         //Printing key-value pairs of anotherMap
47         entrySet= anotherMap.entrySet();
48         for (Entry<String, Integer>entry : entrySet)
49         {
50
51            System.out.println(entry.getKey()+" : "+entry.getValue());
52         }

           //Adds key-value pair 'FIVE-5' only if it is not present in map

           map.putIfAbsent("FIVE", 5);

           //Retrieving a value associated with key 'TWO'

           int value = map.get("TWO");
           System.out.println(value);

            //Checking whether key 'ONE' exist in map
```

	Test	Input	Expected	Got	
✓	1	3 ONE 1 TWO 2 THREE 3	ONE : 1 TWO : 2 THREE : 3 ------------------ SIX : ONE TWO SEVEN : 7 : 2 THREE : 3 2 true true 4	ONE : 1 TWO : 2 THREE : 3 ------------------ SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 THREE : 3 2 true true 4	✓

Passed all tests! ✓

◄ Lab-11-MCQ

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TreeSetexample ►

Status	Finished
Started	Sunday, 10 November 2024, 11:31 AM
Completed	Sunday, 10 November 2024, 11:55 AM
Duration	23 mins 50 secs

Question **1**

Correct

Marked out of 5.00

Write a function that takes an input String (sentence) and generates a new String (modified sentence) by reversing the words in the original String, maintaining the words position.

In addition, the function should be able to control the reversing of the case (upper or lowercase) based on a case_option parameter, as follows:

If case_option=0, normal reversal of words i.e., if the original sentence is "WiproTechNologiesBangaLore", the new reversed sentence should be "orpiWseigoloNhceTeroLagnaB".

If case_option=1, reversal of words with retaining position's case i.e., if the original sentence is "WiproTechNologiesBangaLore", the new reversed sentence should be "OrpiwSeigOlonhcetErolaGnab".
Note that positions 1, 7, 11, 20 and 25 in the original string are uppercase W, T, N, B and L. Similarly,

positions 1, 7, 11, 20 and 25 in the new string are uppercase O, S, O, E and G. NOTE:

1. Only space characters should be treated as the word separator i.e., "Hello World" should be treated as two separate words, "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 sentence is "WiproTechNologies,Bangalore" the new reversed sentence should be "Orpiw,seiGolonhceTErolagnab". Note that comma has 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. Kindly ensure that no extra (additional) space characters are embedded within the resultant reversed String.

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
WiproTechnologiesBangalore 0	orpiWseigolonhceTerolagnaB
WiproTechnologies,Bangalore 0	orpiW ,seigolonhceTerolagnaB
WiproTechnologiesBangalore 1	OrpiwSeigolonhcetErolagnab
WiproTechnologies,Bangalore 1	Orpiw ,seigolonhceTErolagnab

Answer: (penalty regime: 0%)

```java
import java.util.*;
public class SentenceReversal{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        String sentence=sc.nextLine();
        int caseOption=sc.nextInt();
        if(caseOption!=0 &&caseOption!=1)
        {

            return;
        }
        String result=reverseWordWithCaseOption(sentence,caseOption);
        System.out.println(result);
    }
    public static String reverseWordWithCaseOption(String sentence,int caseOption)
    {

```

```
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▾                {
32                      char originalChar=word.charAt(i);
33                      char reversedChar=tempWord.charAt(i);
34                      if(Character.isUpperCase(originalChar))
35▾                    {
36                          reversedWord.append(Character.toUpperCase(reversedChar));
37                      }
38                      else if(Character.isLowerCase(originalChar))
39▾                    {
40                          reversedWord.append(Character.toLowerCase(reversedChar));
41                      }
42                      else
43▾                    {
44   45                    reversedWord.append(reversedChar);
46   47                }
48   49            }
50  51          }
52  }          result.append(reversedWord).append(" ");
            }
            return result.toString().trim();
        }
```

	Input	Expected	Got	
✓	WiproTechnologiesBangalore 0	orpiWseigolonhceTerolagnaB	orpiWseigolonhceTerolagnaB	✓
✓	WiproTechnologies,Bangalore 0	orpiW ,seigolonhceTerolagnaB	orpiW ,seigolonhceTerolagnaB	✓
✓	WiproTechnologiesBangalore 1	OrpiwSeigolonhcetErolagnab	OrpiwSeigolonhcetErolagnab	✓
✓	WiproTechnologies,Bangalore 1	Orpiw ,seigolonhceTErolagnab	Orpiw ,seigolonhceTErolagnab	✓

Passed all tests!✓

Question **2**
Correct
Markedoutof5.00

You are provided with a string which has a sequence of 1's and 0's.

This sequence is the encoded version of a English word. You are supposed write a program to decode the provided string and find the original word.

Each alphabet is represented by a sequence of 0s. 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).

The sequence of 0's in the encoded form are separated by a single 1 which helps to distinguish between 2 letters. Example 1:

input1: 010010001

The decoded string (original word) will be: ZYX

Example 2:

input1: 00001000000000000000000010000000000010000000010000000000001

The decoded string (original word) will be: WIPRO

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

For example:

Input	Result
010010001	ZYX
00001000000000000000000010000000000010000000010000000000001	WIPRO

Answer:(penaltyregime:0%)

```java
1  import java.util.*;
2  public class BinaryDecoder{
3      public static void main(String[] args)
4      {
5  6
7  8        Scanner sc=new Scanner(System.in);
           String encoded=sc.nextLine();
           String[] sequences=encoded.split("1");
9          StringBuilder decodedWord=new StringBuilder(); for(String
           seq:sequences){


10             if(!seq.isEmpty())
11             {
12                 int letterPos=seq.length();
13                 if(letterPos<=26)
14                 {
15                     char decodedChar=(char)('Z'-(letterPos-1));
16                     decodedWord.append(decodedChar);
17
18                 }
19             }
20         }
21         System.out.println(decodedWord.toString());
22     }
   }
```

	Input	Expected	Got	
✓	010010001	ZYX	ZYX	✓
✓	000010000000000000000000100000000000100000000010000000000001	WIPRO	WIPRO	✓

Passed all tests! ✓

Question **3**
Correct
Markedoutof5.00

Giventwochararraysinput1[]andinput2[]containingonlylowercasealphabets,extractsthealphabetswhicharepresentinbotharrays (common alphabets).

Get the ASCII values of all the extracted alphabets.

CalculatesumofthoseASCIIvalues.Letscallitsum1andcalculatesingledigitsumofsum1,i.e.,keepaddingthedigitsofsum1untilyou arrive at a single digit.

Returnthatsingledigitasoutput. Note:

1. Array size ranges from 1 to 10.
2. All the array elements are lower case alphabets.
3. Atleastonecommonalphabetwillbefoundinthearrays.

Example 1:

input1: {'a', 'b', 'c'}

input2:{'b','c'}

output: 8

Explanation:

'b'and'c'arepresentinboththearrays. ASCII

value of 'b' is 98 and 'c' is 99.

98 + 99 = 197

1 + 9 + 7 = 17

1 + 7 = 8

For example:

Input	Result
a b c b c	8

Answer:(penaltyregime:0%)

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

	Input a b c	Expected	Got	
✓	b c	8	8	✓

Passed all tests!✓

◄ Lab-12-MCQ

Jump to...

Identify possible words►