

**Status** Finished**Started** Tuesday, 1 October 2024, 9:09 AM**Completed** Tuesday, 1 October 2024, 9:24 AM**Duration** 14 mins 22 secs**Question 1**

Correct

Marked out of 5.00

Write a program to find whether the given input number is Odd.

If the given number is odd, the program should return 2 else It should return 1.

Note: The number passed to the program can either be negative. positive or zero. Zero should NOT be treated as Odd.

**For example:**

Input	Result
123	2
456	1

**Answer:** (penalty regime: 0 %)

```

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

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

Passed all tests! ✓

**Question 2**

Correct

Marked out of 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 7

if the given number is -197, the last digit is 7

**For example:**

Input	Result
197	7
-197	7

**Answer:** (penalty regime: 0 %)

```

1
2 import java.util.*;
3 public class Sample{
4
5
6 public static void main(String args[])
7 {
8     Scanner s=new Scanner(System.in);
9     int n=s.nextInt();
10    int temp=Math.abs(n);
11
12    temp=temp%10;
13
14    System.out.println(temp);
15
16
17 }
18
19 }
```

	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:**

<b>Input</b>	<b>Result</b>
267	11
154	
267 -154	11
-267 154	11
-267 -154	11

**Answer:** (penalty regime: 0 %)

```

1 import java.util.*;
2
3 public class sample
4 {
5     public static void main(String args[])
6     {
7         Scanner s =new Scanner(System.in);
8         int n=s.nextInt();
9         int m=s.nextInt();
10
11         int temp1=Math.abs(n);
12         int temp2=Math.abs(m);
13
14         int a=temp1%10;
15         int b=temp2%10;
16
17         int c=a+b;
18
19         System.out.print(c);
20
21     }
22 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	267 154	11	11	✓
✓	267 -154	11	11	✓
✓	-267 154	11	11	✓
✓	-267 -154	11	11	✓

Passed all tests! ✓

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**Status** Finished

**Started** Friday, 4 October 2024, 1:49 PM

**Completed** Sunday, 6 October 2024, 6:50 PM

**Duration** 2 days 5 hours

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**Question 1**

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**

One Two Three Four

Input:

16

Output:

one six

**For example:**

Test	Input	Result
1	45	Four Five
2	13	One Three
3	87	Eight Seven

**Answer:** (penalty regime: 0 %)

```

1
2 import java.util.*;
3 public class sample
4 {
5     public static void main(String args[])
6     {
7         Scanner s=new Scanner(System.in);
8         String a=s.nextLine();
9
10        char arr[]=a.toCharArray();
11
12        for(int i=0;i<arr.length;i++)
13        {
14            if(arr[i]=='1')
15            {
16                System.out.print("One ");
17
18            }
19            else if(arr[i]=='2')
20            {
21                System.out.print("Two ");
22            }
23            else if(arr[i]=='3')
24            {
25                System.out.print("Three");
26            }
27            else if(arr[i]=='4')
28            {
29                System.out.print("Four ");
30
31            }
32
33            else if(arr[i]=='5')
34            {
35                System.out.print("Five ");
36            }
37
38            else if(arr[i]=='6')
39            {
40                System.out.print("Six ");
41            }
42            else if(arr[i]=='7')

```

```
43 v      {  
44         System.out.print("Seven ");  
45     }  
46     }  
47     else if(arr[i]=='8')  
48     {  
49         System.out.print("Eight ");  
50     }  
51     else if(arr[i]=='9')  
52 }
```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	45	Four Five	Four Five	✓
✓	2	13	One Three	One Three	✓
✓	3	87	Eight Seven	Eight Seven	✓

Passed all tests! ✓

//

**Question 2**

Correct

Marked out of 5.00

Write a program that takes as parameter an integer n.

You have to print the number of zeros at the end of the factorial of n.

For example,  $3! = 6$ . The number of zeros are 0.  $5! = 120$ . The number of zeros at the end are 1.

Note:  $n! < 10^5$

Example Input:

3

Output:

0

Example Input:

60

Output:

14

Example Input:

100

Output:

24

Example Input:

1024

Output:

253

**For example:**

Input	Result
3	0
60	14
100	24
1024	253

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```

1 import java.util.Scanner;
2 public class FactorialTrailingZeros {
3     public static void main(String[] args) {
4         Scanner scanner = new Scanner(System.in);
5         int n = scanner.nextInt();
6         System.out.println(countTrailingZeros(n));
7         scanner.close();
8     }
9     public static int countTrailingZeros(int n) {
10        int count = 0;
11        for (int i = 5; n / i >= 1; i *= 5) {
12            count += n / i;
13        }
14        return count;
15    }
16}
17

```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	3	0	0	✓
✓	60	14	14	✓
✓	100	24	24	✓
✓	1024	253	253	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

You and your friend are movie fans and want to predict if the movie is going to be a hit!

The movie's success formula depends on 2 parameters:

the acting power of the actor (range 0 to 10)

the critic's rating of the movie (range 0 to 10)

The movie is a hit if the acting power is excellent (more than 8) or the rating is excellent (more than 8). This holds true except if either the acting power is poor (less than 2) or rating is poor (less than 2), then the movie is a flop. Otherwise the movie is average.

Write a program that takes 2 integers:

the first integer is the acting power

second integer is the critic's rating.

You have to print Yes if the movie is a hit, Maybe if the movie is average and No if the movie is flop.

Example input:

9 5

Output:

Yes

Example input:

1 9

Output:

No

Example input:

6 4

Output:

Maybe

**For example:**

Input	Result
9 5	Yes
1 9	No
6 4	Maybe

**Answer:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 public class Movie{
4     public static void main(String args[])
5     {
6         Scanner s=new Scanner(System.in);
7         int actp=s.nextInt();
8         int critr=s.nextInt();
9
10        if (actp==1&&critr==9)
11        {
12            System.out.println("No");
13        }
14        else if(actp<2||critr<2)
15        {
16            System.out.println("No");
17
18        }
19        else if(actp>8||critr>8)
20        {
21            System.out.println("Yes");
22        }
23    }
  
```

```
23
24 } else {
25     System.out.println("Maybe");
26 }
27 }
28 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	9 5	Yes	Yes	✓
✓	1 9	No	No	✓
✓	6 4	Maybe	Maybe	✓

Passed all tests! ✓

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**Status** Finished

**Started** Saturday, 5 October 2024, 12:22 PM

**Completed** Saturday, 5 October 2024, 12:24 PM

**Duration** 2 mins 58 secs

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**Question 1**

Correct

Marked out of 5.00

Given an array of numbers, you are expected to return the sum of the longest sequence of POSITIVE numbers in the array.

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: If there are more than one group of elements in the array having the longest sequence of POSITIVE numbers, you are expected to return the total sum of all those POSITIVE numbers (see example 3 below).

input1 represents the number of elements in the array.

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}

Expected output = 62

Explanation:

The input array contains four sequences of POSITIVE numbers, i.e. "12, 18, 18, 14", "12", "32, 34", and "66, 78, 78". The first sequence "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}

Expected output = -1

Explanation:

There are NO positive numbers in the input array. Therefore, the expected output for such cases = -1.

**Example 3:**

input1 = 16

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

Expected output = 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" are the longest of the four as they contain 4 elements each. Therefore, the expected output = sum of the longest 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:** (penalty regime: 0 %)

```

1 ↓ import java.util.Scanner;
2 ↓ public class LongestPositiveSequenceSum{
3 ↓   public static void main(String[] args){
4       Scanner scanner=new Scanner(System.in);
5       System.out.print("");
6       int input1=scanner.nextInt();
7       int[] input2=new int[input1];
8       System.out.println("");
9       for(int i=0;i<input1;i++){
    }
}

```

```

10     input2[i]=scanner.nextInt();
11
12 }
13 int maxLength=0;
14 int currentLength=0;
15 int currentSum=0;
16 int maxSum=0;
17 for(int num : input2){
18     if(num>=0){
19         currentLength++;
20         currentSum+=num;
21     }
22     else{
23         if(currentLength>maxLength){
24             maxLength=currentLength;
25             maxSum=currentSum;
26         }
27         else if(currentLength==maxLength){
28             maxSum+=currentSum;
29         }
30         currentLength=0;
31         currentSum=0;
32     }
33 }
34 if(currentLength>maxLength){
35     maxSum=currentSum;
36 }
37 else if(currentLength==maxLength){
38     maxSum+=currentSum;
39 }
40 if(maxLength==0){
41     System.out.println(-1);
42 }
43 else{
44     System.out.println(maxSum);
45 }
46 scanner.close();
47
48 }
49 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	16 -12 -16 12 18 18 14 -4 -12 -13 32 34 -5 66 78 78 -79	62	62	✓
✓	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! ✓

**Question 2**

Correct

Marked out of 5.00

You are provided with a set of numbers (array of numbers).

You have to generate the sum of specific numbers based on its position in the array set provided to you.

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}

**Step 1:**

Starting from the 0<sup>th</sup> index of the array pick up digits as per below:

0<sup>th</sup> index – pick up the units value of the number (in this case is 1).

1<sup>st</sup> index - pick up the tens value of the number (in this case it is 5).

2<sup>nd</sup> index - pick up the hundreds value of the number (in this case it is 4).

3<sup>rd</sup> index - pick up the thousands value of the number (in this case it is 7).

4<sup>th</sup> index - pick up the ten thousands value of the number (in this case it is 4).

(Continue this for all the elements of the input array).

The array generated from Step 1 will then be – {1, 5, 4, 7, 4}.

**Step 2:**

Square each number present in the array generated in Step 1.

{1, 25, 16, 49, 16}

**Step 3:**

Calculate the sum of all elements of the array generated in Step 2 to get the final result. The result will be = 107.

**Note:**

- 1) While picking up a number in Step1, if you observe that the number is smaller than the required position then use 0.
- 2) In the given function, input1[] is the array of numbers and input2 represents the number of elements in input1.

**Example 2:**

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

**Step 1:**

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

{1, 0, 4, 0, 6}

In this case, the value in input1 at index 1 and 3 is less than the value required to be picked up based on position, so we use a 0.

**Step 2:**

{1, 0, 16, 0, 36}

**Step 3:**

The final result = 53.

**For example:**

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

**Answer:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class SumofDigitPositions{
3     public static void main(String[] args){
4         Scanner scanner=new Scanner(System.in);
5         System.out.print("");

```

```

6   int input2=scanner.nextInt();
7   int[] input1=new int[input2];
8   System.out.println("");
9   for(int i=0;i<input2;i++){
10      input1[i]=scanner.nextInt();
11   }
12   int[] digitPositions=new int[input2];
13   for(int i=0;i<input2;i++){
14      int number=input1[i];
15      int digit=(number/(int)Math.pow(10,i))%10;
16      digitPositions[i]=(number<Math.pow(10,i))?0:digit;
17   }
18   int sum=0;
19   for(int value : digitPositions){
20      sum+=value*value;
21   }
22   System.out.println(""+sum);
23   scanner.close();
24 }
25 }
26 }
27 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	5 1 51 436 7860 41236	107	107	✓
✓	5 1 5 423 310 61540	53	53	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

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 step 1) 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}`

Expected Output = `{-72, -36, 27, 0}`

Explanation:

Step 1: The maximum number in the given array is 9.

Step 2: Subtracting the maximum number 9 from each element of the array:

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

Step 3: Multiplying the maximum number 9 to each of the resultant array:

$$\{(-8 \times 9), (-4 \times 9), (3 \times 9), (0 \times 9)\} = \{-72, -36, -27, 0\}$$

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:

Step 1: The maximum number in the given array is 87.

Step 2: Subtracting the maximum number 87 from each element of the array:

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

Step 3: Multiplying the maximum number 87 to each of the resultant array:

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

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:

Step 1: The maximum number in the given array is 9.

Step 2: Subtracting the maximum number 9 from each element of the array:

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

Step 3: Multiplying the maximum number 9 to each of the resultant array:

$$\{(-18 \times 9), (0 \times 9)\} = \{-162, 0\}$$

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:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class ArrayOperations{
3     public static void main(String[] args){
4         Scanner scanner=new Scanner(System.in);
5         int input1=scanner.nextInt();
6         int[] input2=new int[input1];
7         for(int i=0;i<input1;i++){
8             input2[i]=scanner.nextInt();
9         }
10        int max=Integer.MIN_VALUE;
11        for(int num : input2){
12            if(num>max){
13                max=num;
14            }
15        }
16        for(int i=0;i<input1;i++){
17            input2[i]=input2[i]-max;
18        }
19        for(int i=0;i<input1;i++){
20            input2[i]=input2[i]*max;
21        }
22        for(int i=0;i<input1;i++){
23            System.out.print(input2[i]);
24            if(i<input1-1){
25                System.out.print(" ");
26            }
27        }
28    }
29 }
30 }
```

	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! ✓

◀ Lab-03-MCQ

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Simple Encoded Array ►

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**Status** Finished

**Started** Saturday, 5 October 2024, 12:25 PM

**Completed** Saturday, 5 October 2024, 12:28 PM

**Duration** 3 mins 1 sec

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**Question 1**

Correct

Marked out of 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(String name)

Student(String name, int rollno)

**Input:**

No input

**Output:****No-arg constructor is invoked****1 arg constructor is invoked****2 arg constructor is invoked****Name =null , Roll no = 0****Name =Rajalakshmi , Roll no = 0****Name =Lakshmi , Roll no = 101****For example:**

Test	Result
1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101

**Answer:** (penalty regime: 0 %)

```

1 public class Student{
2     private String name;
3     private int rollNo;
4     public Student(){
5         this.name=null;
6         this.rollNo=0;
7         System.out.println("No-arg constructor is invoked");
8     }
9     public Student(String name){
10        this.name=name;
11        this.rollNo=0;
12        System.out.println("1 arg constructor is invoked");
13    }
14    public Student(String name,int rollNo){
15        this.name=name;
16        this.rollNo=rollNo;
17        System.out.println("2 arg constructor is invoked");
18    }
19    public void displayInfo(){
20        System.out.println("Name =" + this.name + " , Roll no = " +this.rollNo);
21    }
22}
23 public static void main(String[] args){
24     Student student1=new Student();
25     Student student2=new Student("Rajalakshmi");
26     Student student3=new Student("Lakshmi",101);
27     student1.displayInfo();
28     student2.displayInfo();
29     student3.displayInfo();
30 }
31 }
```

	Test	Expected	Got	
✓	1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	✓

Passed all tests! ✓

**Question 2**

Correct

Marked out of 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 =  $\pi r^2$**

**Circumference =  $2\pi r$**

**Input:**

**2**

**Output:**

**Area = 12.57**

**Circumference = 12.57**

**For example:**

Test	Input	Result
1	4	Area = 50.27 Circumference = 25.13

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```

1 import java.util.Scanner;
2 class Circle
3 {
4     private double radius;
5     public Circle(double radius){
6         this.radius=radius;
7
8
9
10    }
11    public void setRadius(double radius){
12        this.radius=radius;
13
14    }
15    public double getRadius()    {
16        return radius;
17
18    }
19
20    }
21    public double calculateArea() { // complete the below statement
22        return Math.PI*radius*radius;
23
24    }
25    public double calculateCircumference()    {
26        return 2*Math.PI*radius;
27    }
28 }
29 public class Main{
30     public static void main(String[] args) {
31         Scanner sc= new Scanner(System.in);
32         double r=sc.nextDouble();
33         Circle circle= new Circle(r);
34         System.out.printf("Area = %.2f\n" ,circle.calculateArea());
35         System.out.printf("Circumference = %.2f" ,circle.calculateCircumference());
36         sc.close();
37
38     }
39 }
```

	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! ✓

**Question 3**

Correct

Marked out of 5.00

Create a Class Mobile with the attributes listed below,

```
private String manufacturer;
private String operating_system;
public String color;
private int cost;
```

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;
}
```

```
String getManufacturer(){
    return manufacturer;}
```

Display the object details by overriding the `toString()` method.

**For example:**

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

**Answer:** (penalty regime: 0 %)

```
1 public class Mobile{
2     private String manufacturer;
3     private String operatingSystem;
4     private int cost;
5     private String color;
6     public Mobile(String manufacturer, String operatingSystem, int cost, String color){
7         this.manufacturer= manufacturer;
8         this.operatingSystem=operatingSystem;
9         this.cost=cost;
10        this.color=color;
11    }
12    @Override
13    public String toString(){
14        return "manufacturer = " + manufacturer+ "\noperating_system = " + operatingSystem + "\ncolor = "
15    }
16
17    public static void main(String[] args){
18        Mobile mobile=new Mobile("Redmi","Andriod",34000,"Blue");
19        System.out.println(mobile.toString());
20    }
21
22
23 }
```

	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! ✓

[◀ Lab-04-MCQ](#)

Jump to...

Number of Primes in a specified range ►

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---

**Status** Finished

**Started** Saturday, 5 October 2024, 12:30 PM

**Completed** Saturday, 5 October 2024, 12:32 PM

**Duration** 2 mins 6 secs

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**Question 1**

Correct

Marked out of 5.00

create a class called College with attribute String name, constructor to initialize the name attribute , a method called Admitted(). Create a subclass called CSE that extends Student class, with department attribute , Course() method to sub class. Print the details of the Student.

College:

```
String collegeName;
public College() {}
public admitted() {}
```

Student:

```
String studentName;
String department;
public Student(String collegeName, String studentName, String depart) {}
public toString()
```

Expected Output:

A student admitted in REC

CollegeName : REC

StudentName : Venkatesh

Department : CSE

**For example:**

Result
A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```
1 class College
2 {
3     protected String collegeName;
4
5     public College(String collegeNameP) {
6         // initialize the instance variables
7         collegeName= collegeNameP;
8     }
9
10    public void admitted() {
11        System.out.println("A student admitted in "+collegeName);
12    }
13 }
14 class Student extends College{
15
16     String studentName;
17     String depart;
18
19     public Student(String collegeNameP, String studentNameP, String departP) {
20         // initialize the instance variables
21         super(collegeNameP);
22         studentName=studentNameP;
23         depart=departP;
24
25
26     }
27
28    public String toString(){
29        // return the details of the student
30        return "CollegeName : "+collegeName+"\nStudentName : "+studentName+"\nDepartment : "+depart ;
31    }
32 }
33 }
34 class prog {
```

```
35 public static void main (String[] args) {  
36     Student s1 = new Student("REC","Venkatesh","CSE");  
37  
38     s1.admitted();                                // invoke the admitted() method  
39     System.out.println(s1.toString());  
40 }  
41 }
```

	Expected	Got	
✓	A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE	A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE	✓

Passed all tests! ✓

**Question 2**

Correct

Marked out of 5.00

Create a class Mobile with constructor and a method basicMobile().

Create a subclass CameraMobile which extends Mobile class , with constructor and a method newFeature().

Create a subclass AndroidMobile which extends CameraMobile, with constructor and a method androidMobile().

display the details of the Android Mobile class by creating the instance. .

```
class Mobile{
```

```
}
```

```
class CameraMobile extends Mobile {
```

```
}
```

```
class AndroidMobile extends CameraMobile {
```

```
}
```

expected output:

Basic Mobile is Manufactured

Camera Mobile is Manufactured

Android Mobile is Manufactured

Camera Mobile with 5MG px

Touch Screen Mobile is Manufactured

**For example:**

**Result**

```
Basic Mobile is Manufactured
Camera Mobile is Manufactured
Android Mobile is Manufactured
Camera Mobile with 5MG px
Touch Screen Mobile is Manufactured
```

**Answer:** (penalty regime: 0 %)

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

	<b>Expected</b>	<b>Got</b>	
✓	Basic Mobile is Manufactured Camera Mobile is Manufactured Android Mobile is Manufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	Basic Mobile is Manufactured Camera Mobile is Manufactured Android Mobile is Manufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

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

Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.

**For example:**

**Result**

```
Create a Bank Account object (A/c No. BA1234) with initial balance of $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  
Create a SavingsAccount object (A/c No. 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
```

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```

1  class BankAccount {  
2      private String accountNumber;  
3      private double balance;  
4  
5      public BankAccount(String accountNumber, double balance){  
6          this.accountNumber=accountNumber;  
7          this.balance=balance;  
8      }  
9  
10     // Method to deposit an amount into the account  
11     public void deposit(double amount) {  
12         // Increase the balance by the deposit amount  
13         balance+=amount;  
14     }  
15  
16     public void withdraw(double amount) {  
17         if (balance >= amount) {  
18             balance -= amount;  
19         } else {  
20             System.out.println("Insufficient balance");  
21         }  
22     }  
23  
24  
25     // Method to get the current balance  
26     public double getBalance() {  
27         // Return the current balance  
28         return balance;  
29     }  
30 }  
31  
32  
33     class SavingsAccount extends BankAccount {  
34         // Constructor to initialize account number and balance  
35         public SavingsAccount(String accountNumber, double balance) {  
36             // Call the parent class constructor  
37             super(accountNumber,balance);  
38         }  
39  
40         // Override the withdraw method from the parent class  
41         @Override  
42         public void withdraw(double amount) {  
43             // Check if the withdrawal would cause the balance to drop below $100  
44             if (getBalance() - amount < 100) {  
45                 // Print a message if the minimum balance requirement is not met  
46                 System.out.println("Minimum balance of $100 required!");  
47             } else {  
48                 // Call the parent class withdraw method  
49             }
```

```

50     // call the parent class withdraw method
51     super.withdraw(amount);
52 }
```

	<b>Expected</b>	<b>Got</b>	
✓	Create a Bank Account object (A/c No. BA1234) with initial balance of \$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 Create a SavingsAccount object (A/c No. 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	Create a Bank Account object (A/c No. BA1234) with initial balance of \$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 Create a SavingsAccount object (A/c No. 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! ✓

◀ Lab-05-MCQ

Jump to...

Is Palindrome Number? ►

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**Status** Finished

**Started** Saturday, 5 October 2024, 12:34 PM

**Completed** Saturday, 5 October 2024, 12:37 PM

**Duration** 2 mins 31 secs

---

**Question 1**

Correct

Marked out of 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. All the characters in input 1 are lowercase alphabets.
2. input 1 will always contain more than one word separated by :
3. Output should be returned in uppercase.

Case 1:

Check whether the two alphabets are same.

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

Case 2:

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

word1 is zx, both are not same alphabets

position value of z is 26

position value of x is 24

max – min will be  $26 - 24 = 2$

Alphabet which comes in 2<sup>nd</sup> position is b

Word2 is za, both are not same alphabets

position value of z is 26

position value of a is 1

max – min will be  $26 - 1 = 25$

Alphabet which comes in 25<sup>th</sup> position is y

word3 is ee, both are same hence take e

Hence the output is BYE

**For example:**

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

**Answer:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 public class prog{
4
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8
9         String input = sc.nextLine();
10
11
12         String[] words = input.split(":");
13
14         StringBuilder result = new StringBuilder();
15
16         for (String word : words) {
17             char c1 = word.charAt(0);
18             char c2 = word.charAt(1);
19
20             if (c1 == c2) {
21
22                 result.append(Character.toUpperCase(c1));
23             } else {
24
25                 int pos1 = c1 - 'a' + 1;
26                 int pos2 = c2 - 'a' + 1;
27
28                 int diff = Math.abs(pos1 - pos2);
29
30
31                 char newChar = (char) ('a' + diff - 1);
32                 result.append(Character.toUpperCase(newChar));
33             }
34         }
35
36
37         System.out.println(result.toString());
38
39
40
41     }
42 }
```

	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

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 "iNce doTday"

Example 1:

input1 = "Today is a Nice Day"

input2 = 41

output = "iNce doTday"

Example 2:

input1 = "Fruits like Mango and Apple are common but Grapes are rare"

input2 = 39

output = "naMngo arGpes"

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
Today is a Nice Day 41	iNce doTday
Fruits like Mango and Apple are common but Grapes are rare 39	naMngo arGpes

**Answer:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 import java.util.Arrays;
3 import java.lang.String;
4
5 class prog {
6
7     public static void main(String[] args) {
8
9         Scanner o=new Scanner(System.in);
10        String s=o.nextLine();

```

```

-- 11   int n=o.nextInt();
12
13   String result = processWords(s,n);
14   System.out.println(result);
15
16
17 }
18
19 public static String processWords(String input1, int input2) {
20
21   String[] words = input1.split(" ");
22
23   int firstIndex = (input2 / 10) - 1;
24   int secondIndex = (input2 % 10) - 1;
25
26
27   String firstWordProcessed = processWord(words[firstIndex]);
28   String secondWordProcessed = processWord(words[secondIndex]);
29
30
31   return firstWordProcessed + " " + secondWordProcessed;
32 }
33
34
35 public static String processWord(String word) {
36   int length = word.length();
37   int mid = length / 2;
38
39   String l, f;
40
41
42 if (length % 2 == 0) {
43   f=word.substring(0,mid);
44   f= new StringBuilder(f).reverse().toString();
45   l= word.substring(mid);
46   return f+l ;
47
48 } else {
49   f = word.substring(0, mid + 1);
50   f= new StringBuilder(f).reverse().toString();
51   l= word.substring(mid);
52 }

```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	Today is a Nice Day 41	iNce doTday	iNce doTday	✓
✓	Fruits like Mango and Apple are common but Grapes are rare 39	naMngO arGpes	naMngO arGpes	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

Given 2 strings input1 & input2.

- Concatenate both the strings.
- Remove duplicate alphabets & white spaces.
- 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 lower case.

Example 1:

Input 1: apple

Input 2: orange

Output: rponlgea

Example 2:

Input 1: fruits

Input 2: are good

Output: utsroigfeda

Example 3:

Input 1: ""

Input 2: ""

Output: null

**For example:**

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

**Answer:** (penalty regime: 0 %)

```

1 import java.util.*;
2
3 public class s {
4     public static String solve(String a, String b) {
5         if ((a == null || a.trim().isEmpty()) && (b == null || b.trim().isEmpty())) return "null";
6
7         String combined = a + b;
8         Set<Character> uniqueChars = new HashSet<>();
9
10        for (char c : combined.toCharArray()) {
11            if (Character.isAlphabetic(c)) {
12                uniqueChars.add(c);
13            }
14        }
15
16        char[] charArray = new char[uniqueChars.size()];
17        int i = 0;
18        for (char c : uniqueChars) {
19            charArray[i++] = c;
20        }
21
22        Arrays.sort(charArray);
23        return new StringBuilder(new String(charArray)).reverse().toString();
24    }
25
26    public static void main(String[] args) {
27        Scanner sc = new Scanner(System.in);

```

```
28     String input1 = sc.nextLine();
29     String input2 = sc.nextLine();
30     System.out.println(solve(input1, input2));
31 }
32 }
33 }
34 }
```

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

Passed all tests! ✓

◀ Lab-06-MCQ

Jump to...

Return second word in Uppercase ►

/

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---

**Status** Finished

**Started** Saturday, 5 October 2024, 12:37 PM

**Completed** Saturday, 5 October 2024, 12:38 PM

**Duration** 1 min 8 secs

---

**Question 1**

Correct

Marked out of 5.00

Create interfaces shown below.

```
interface Sports {
    public void setHomeTeam(String name);
    public void setVisitingTeam(String name);
}
interface Football extends Sports {
    public void homeTeamScored(int points);
    public void visitingTeamScored(int points);}
```

create a class College that implements the Football interface and provides the necessary functionality to the abstract methods.

sample Input:

Rajalakshmi  
Saveetha  
22  
21

Output:

Rajalakshmi 22 scored  
Saveetha 21 scored  
Rajalakshmi is the Winner!

**For example:**

Test	Input	Result
1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!

**Answer:** (penalty regime: 0 %)

Reset answer

```
1 import java.util.Scanner;
2 interface Sports {
3     void setHomeTeam(String name);
4     void setVisitingTeam(String name);
5 }
6 interface Football extends Sports {
7     void homeTeamScored(int points);
8     void visitingTeamScored(int points);
9 }
10 class College implements Football {
11     private String homeTeam;
12     private String visitingTeam;
13     private int homeScore;
14     private int visitingScore;
15     public void setHomeTeam(String name) {
16         this.homeTeam = name;
17     }
18     public void setVisitingTeam(String name) {
19         this.visitingTeam = name;
20     }
21     public void homeTeamScored(int points) {
22         this.homeScore = points;
23     }
24     public void visitingTeamScored(int points) {
25         this.visitingScore = points;
26     }
27     public void displayResult() {
28         System.out.println(homeTeam + " " + homeScore + " scored");
29         System.out.println(visitingTeam + " " + visitingScore + " scored");
30         if (homeScore > visitingScore) {
31             System.out.println(homeTeam + " is the winner!");
32         } else if (visitingScore > homeScore) {
33             System.out.println(visitingTeam + " is the winner!");
34         } else {
```

```

35         System.out.println("It's a tie match.");
36     }
37 }
38 }
39 public class Main {
40     public static void main(String[] args) {
41         Scanner scanner = new Scanner(System.in);
42         College match = new College();
43         String homeTeam = scanner.nextLine();
44         String visitingTeam = scanner.nextLine();
45         int homeScore = scanner.nextInt();
46         int visitingScore = scanner.nextInt();
47         match.setHomeTeam(homeTeam);
48         match.setVisitingTeam(visitingTeam);
49         match.homeTeamScored(homeScore);
50         match.visitingTeamScored(visitingScore);
51         match.displayResult();
52         scanner.close();

```

	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 2**

Correct

Marked out of 5.00

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

Create an RBI interface with a variable String parentBank="RBI" and abstract method rateOfInterest().

RBI interface has two more methods default and static method.

```
default void policyNote() {
    System.out.println("RBI has a new Policy issued in 2023.");
}

static void regulations() {
    System.out.println("RBI has updated new regulations on 2024.");
}
```

Create two subclasses SBI and Karur which implements the RBI interface.

Provide the necessary code for the abstract method in two sub-classes.

**Sample Input/Output:**

**RBI has a new Policy issued in 2023**  
**RBI has updated new regulations in 2024.**  
**SBI rate of interest: 7.6 per annum.**  
**Karur rate of interest: 7.4 per annum.**

**For example:**

Test	Result
1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.

**Answer:** (penalty regime: 0 %)

```
1 interface RBI {
2     String parentBank = "RBI";
3     double rateOfInterest();
4     default void policyNote() {
5         System.out.println("RBI has a new Policy issued in 2023");
6     }
7     static void regulations() {
8         System.out.println("RBI has updated new regulations in 2024.");
9     }
10 }
11 class SBI implements RBI {
12     @Override
13     public double rateOfInterest() {
14         return 7.6;
15     }
16 }
17 class Karur implements RBI {
18     @Override
19     public double rateOfInterest() {
20         return 7.4;
21     }
22 }
23 public class Main {
24     public static void main(String[] args) {
25         SBI sbi = new SBI();
26         Karur karur = new Karur();
27         sbi.policyNote();
28         RBI.regulations();
29         System.out.println("SBI rate of interest: " + sbi.rateOfInterest() + " per annum.");
30         System.out.println("Karur rate of interest: " + karur.rateOfInterest() + " per annum.");
31     }
32 }
```

	<b>Test</b>	<b>Expected</b>	<b>Got</b>	
✓	1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

create an interface Playable with a method play() that takes no arguments and returns void. Create three classes Football, Volleyball, and Basketball that implement the Playable interface and override the play() method to play the respective sports.

```
interface Playable {
    void play();
}

class Football implements Playable {
    String name;
    public Football(String name){
        this.name=name;
    }
    public void play() {
        System.out.println(name+" is Playing football");
    }
}
```

Similarly, create Volleyball and Basketball classes.

**Sample output:**

```
Sadvin is Playing football
Sanjay is Playing volleyball
Sruthi is Playing basketball
```

**For example:**

Test	Input	Result
1	Sadvin Sanjay Sruthi	Sadvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball
2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball

**Answer:** (penalty regime: 0 %)

```
1 import java.util.Scanner;
2 interface Playable {
3     void play();
4 }
5 class Football implements Playable {
6     String name;
7     public Football(String name) {
8         this.name = name;
9     }
10    @Override
11    public void play() {
12        System.out.println(name + " is Playing football");
13    }
14 }
15 class Volleyball implements Playable {
16     String name;
17
18     public Volleyball(String name) {
19         this.name = name;
20     }
21     @Override
22     public void play() {
23         System.out.println(name + " is Playing volleyball");
24     }
25 }
26 class Basketball implements Playable {
27     String name;
28
29     public Basketball(String name) {
30         this.name = name;
31     }
32     @Override
```

```

33     public void play() {
34         System.out.println(name + " is Playing basketball");
35     }
36 }
37 public class Main {
38     public static void main(String[] args) {
39         Scanner scanner = new Scanner(System.in);
40         String footballPlayerName = scanner.nextLine();
41         String volleyballPlayerName = scanner.nextLine();
42         String basketballPlayerName = scanner.nextLine();
43         Playable footballPlayer = new Football(footballPlayerName);
44         Playable volleyballPlayer = new Volleyball(volleyballPlayerName);
45         Playable basketballPlayer = new Basketball(basketballPlayerName);
46         footballPlayer.play();
47         volleyballPlayer.play();
48         basketballPlayer.play();
49         scanner.close();
50     }
51 }

```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	✓
✓	2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	✓

Passed all tests! ✓

◀ Lab-07-MCQ

Jump to...

Generate series and find Nth element ►

[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-08 - Polymorphism, Abstract Classes, final Keyword](#) / [Lab-08-Logic Building](#)

---

**Status** Finished

**Started** Sunday, 6 October 2024, 9:54 PM

**Completed** Sunday, 6 October 2024, 11:31 PM

**Duration** 1 hour 36 mins

---

**Question 1**

Correct

Marked out of 5.00

As a logic building learner you are given the task to extract the string which has vowel as the first and last characters from the given array of Strings.

Step1: Scan through the array of Strings, extract the Strings with first and last characters as vowels; these strings should be concatenated.

Step2: Convert the concatenated string to lowercase and return it.

If none of the strings in the array has first and last character as vowel, then return no matches found

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

input2: String array.

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.

Hence the output is no matches found.

Example 3:

input1: 3

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

output: ateace

**For example:**

Input	Result
3 oreo sirish apple	oreoapple
2 Mango banana	no matches found
3 Ate Ace Girl	ateace

**Answer:** (penalty regime: 0 %)

```

1 import java.util.*;
2 public class hello{
3     public static void main(String[] args){
4         Scanner sc=new Scanner(System.in);
5         int n=sc.nextInt();
6         int k=0;
7         String arr[]=new String[n];
8         for(int i=0;i<n;i++){
9             {
10                 arr[i]=sc.next();
11                 arr[i]=arr[i].toLowerCase();
12                 char ch=arr[i].charAt(0);
13                 if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u'){
14                     k=1;
15                     System.out.print(arr[i]);
16                 }
17             }
18         }

```

```
19     System.out.println("no matches found");
20 }
21 }
22 }
23 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	3 oreo sirish apple	oreoapple	oreoapple	✓
✓	2 Mango banana	no matches found	no matches found	✓
✓	3 Ate Ace Girl	ateace	ateace	✓

Passed all tests! ✓



**Question 2**

Correct

Marked out of 5.00

**1. Final Variable:**

- 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. Final Method:**

- 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("This is a final method.");
}
```

**3. Final Class:**

- A class declared as `final` cannot be subclassed (i.e., no other class can inherit from it).
- It is used to prevent a class from being extended and modified.
- `public final class Vehicle {`  
    `// class code`  
}

**Given a Java Program that contains the bug in it, your task is to clear the bug to the output.**

**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:** (penalty regime: 0 %)

[Reset answer](#)

```

1 class FinalExample {
2
3     // Final variable
4     int maxSpeed = 120;
5
6     // Final method
7     public final void displayMaxSpeed() {
8         System.out.println("The maximum speed is: " + maxSpeed + " km/h");
9     }
10 }
11
12 class SubClass extends FinalExample {
13
14
15     // You can create new methods here
16     public void showDetails() {
17         System.out.println("This is a subclass of FinalExample.");
18     }
19 }
20
21 class prog {
22     public static void main(String[] args) {
23         FinalExample obj = new FinalExample();
24         obj.displayMaxSpeed();
25
26         SubClass subObj = new SubClass();
27         subObj.showDetails();
28     }
29 }
```

	<b>Test</b>	<b>Expected</b>	<b>Got</b>	
✓	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! ✓

1/1

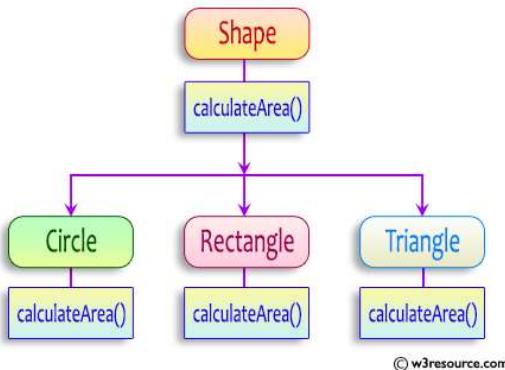
**Question 3**

Correct

Marked out of 5.00

Create a base class Shape with a method called calculateArea(). Create three subclasses: Circle, Rectangle, and Triangle. Override the 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("Area of a Triangle :%.2f%n",((0.5)\*base\*height)); // use this statement

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**

**Area of a Rectangle :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:** (penalty regime: 0 %)

```

1 import java.util.*;
2 abstract class s{
3     public abstract double calculateArea();
4 }
5 class c extends s{
6     double r;
7     c(double r){
8         this.r=r;
9     }
10    public double calculateArea(){
11        double a=Math.PI*r*r;
12        return a;
13    }
14 }
15
16 public class Main {
17     public static void main(String[] args) {
18         s s1=new c();
19         System.out.println(s1.calculateArea());
20     }
21 }

```

```

12     System.out.printf("Area of a circle: %.2f\n",a);
13     return a;
14 }
15 }
16 v class r extends s{
17     double l;
18     double b;
19 v r(double l,double b){
20     this.l=l;
21     this.b=b;
22 }
23 v public double calculateArea(){
24     double a=l*b;
25     System.out.printf("Area of a Rectangle: %.2f\n",a);
26     return a;
27 }
28 }
29 v class t extends s{
30     double b;
31     double h;
32 v t(double b,double h){
33     this.b=b;
34     this.h=h;
35 }
36 v public double calculateArea(){
37     double a=b*h*0.5;
38     System.out.printf("Area of a Triangle: %.2f\n",a);
39     return a;
40 }
41 }
42 v public class hello{
43 v     public static void main(String[] args){
44     Scanner sc=new Scanner(System.in);
45     double r1=sc.nextDouble();
46     c c1=new c(r1);
47     double l1=sc.nextDouble();
48     double b1=sc.nextDouble();
49     r r2=new r(l1,b1);
50     double b2=sc.nextDouble();
51     double h2=sc.nextDouble();
52     t t1=new t(b2,h2);

```

	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! ✓

◀ Lab-08-MCQ

Jump to...

FindStringCode ►

[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-09-Exception Handling](#) / [Lab-09-Logic Building](#)

---

**Status** Finished

**Started** Monday, 21 October 2024, 5:40 PM

**Completed** Monday, 21 October 2024, 5:52 PM

**Duration** 12 mins 57 secs

---

**Question 1**

Correct

Marked out of 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.

**Sample input and Output:**

```
82 is even.  
Error: 37 is odd.
```

Fill the preloaded answer to get the expected output.

**For example:**

Result
82 is even. Error: 37 is odd.

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```

1 class prog {
2     public static void main(String[] args) {
3         int n = 82;
4         trynumber(n);
5         n = 37;
6         trynumber(n);
7
8     }
9
10    public static void trynumber(int n) {
11        try {
12
13            checkEvenNumber(n);
14            System.out.println(n + " is even.");
15        }
16        catch (Exception e) {
17            System.out.println("Error: " + e.getMessage());
18        }
19    }
20
21    public static void checkEvenNumber(int number) throws Exception{
22        if (number % 2 != 0) {
23            throw new Exception(number + " is odd.");
24        }
25    }
26}
27

```

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

Passed all tests! ✓

**Question 2**

Correct

Marked out of 5.00

Write a Java program to handle `ArithmaticException` 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.

if you try to access an element beyond the array limit throws an exception.

**Input:**

5

10 0 20 30 40

**Output:****`java.lang.ArithmaticException: / by zero`****I am always executed**

Input:

3

10 20 30

**Output**`java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3`

I am always executed

**For example:**

Test	Input	Result
1	6 1 0 4 1 2 8	<code>java.lang.ArithmaticException: / by zero</code> <b>I am always executed</b>

**Answer:** (penalty regime: 0 %)

```

1 import java.util.*;
2 public class Sample
3 {
4     public static void main(String args[])
5     {
6         Scanner scn = new Scanner(System.in);
7         int n=scn.nextInt();
8         int[] arr = new int[n];
9         try
10        {
11            for(int i=0;i<n;i++)
12            {
13                arr[i]=scn.nextInt();
14            }
15            int res=arr[0]/arr[1];
16            int a = arr[n];
17        }
18        catch(ArithmaticException e)
19        {
20            System.out.println("java.lang.ArithmaticException: "+e.getMessage());
21        }
22        catch(ArrayIndexOutOfBoundsException e)
23        {
24            System.out.println("java.lang.ArrayIndexOutOfBoundsException: "+e.getMessage());
25        }
26        finally
27        {
28            System.out.println("I am always executed");
29        }
30    }
31 }
```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	6 1 0 4 1 2 8	java.lang.ArithmetricException: / by zero I am always executed	java.lang.ArithmetricException: / by zero I am always executed	✓
✓	2	3 10 20 30	java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3 I am always executed	java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3 I am always executed	✓

Passed all tests! ✓

**Question 3**

Correct

Marked out of 5.00

In the following program, an array of integer data is to be initialized.

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."

If there is no such exception it will print the total sum of the array.

```
/* Define try-catch block to save user input in the array "name"
```

```
If there is an exception then catch the exception otherwise print the total sum of the array. */
```

**Sample Input:**

```
3  
5 2 1
```

**Sample Output:**

```
8
```

**Sample Input:**

```
2  
1 g
```

**Sample Output:**

```
You entered bad data.
```

**For example:**

Input	Result
3 5 2 1	8
2 1 g	You entered bad data.

**Answer:** (penalty regime: 0 %)

```
1 import java.util.Scanner;  
2 import java.util.InputMismatchException;  
3 class prog {  
4     public static void main(String[] args) {  
5         Scanner sc = new Scanner(System.in);  
6         int length = sc.nextInt();  
7         // create an array to save user input  
8         int[] name = new int[length];  
9         int sum=0;//save the total sum of the array.  
10  
11     /* Define try-catch block to save user input in the array "name"  
12     If there is an exception then catch the exception otherwise print  
13     the total sum of the array. */  
14     try  
15     {  
16         for(int i=0;i<length;i++)  
17         {  
18             name[i] =sc.nextInt();  
19             sum+=name[i];  
20         }  
21         System.out.println(sum);  
22     }  
23     catch(InputMismatchException e )  
24     {  
25         System.out.println("You entered bad data.");  
26     }  
27  
28  
29  
30  
31  
32  
33
```

34	}
35	}

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	3 5 2 1	8	8	✓
✓	2 1 g	You entered bad data.	You entered bad data.	✓

Passed all tests! ✓

[◀ Lab-09-MCQ](#)

Jump to...

[The "Nambiar Number" Generator ►](#)



[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-10- Collection- List](#) / [Lab-10-Logic Building](#)

---

**Status** Finished

**Started** Tuesday, 5 November 2024, 8:24 AM

**Completed** Tuesday, 5 November 2024, 9:05 AM

**Duration** 40 mins 59 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 %)

```

1 import java.util.ArrayList;
2 import java.util.Scanner;
3 public class prgm {
4     public static void main(String[] args) {
5         Scanner s = new Scanner(System.in);
6         ArrayList<Integer> list = new ArrayList<>();
7         int n = s.nextInt();
8         for (int i = 0; i < n; i++) {
9             list.add(s.nextInt());
10        }
11        int first = list.get(0);
12        int last = list.get(list.size() - 1);
13        System.out.println("ArrayList: " + list);
14        System.out.println("First : " + first + ", Last : " + last);
15    }
16 }
17

```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	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

Marked out of 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();
```

The above methods are used for the below Java program.

**Answer:** (penalty regime: 0 %)

[Reset answer](#)

```
1 import java.util.ArrayList;
2 import java.util.Scanner;
3 public class Prog {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         int n = sc.nextInt();
7         ArrayList<Integer> list = new ArrayList<Integer>();
8         for (int i = 0; i < n; i++)
9             list.add(sc.nextInt());
10        System.out.println("ArrayList: " + list);
11        // Replacing the element at index 1 with 100
12        list.set(1, 100);
13        // Getting the index of first occurrence of 100
14        System.out.println("Index of 100 = " + list.indexOf(100));
15        // Getting the index of last occurrence of 100
16        System.out.println("LastIndex of 100 = " + list.lastIndexOf(100));
17        // Check whether 200 is in the list or not
18        System.out.println(list.contains(200)); // Output: false
19        // Print ArrayList size
20        System.out.println("Size Of ArrayList = " + list.size());
21        // Inserting 500 at index 1
22        list.add(1, 500);
23        // Removing an element from position 3
24        list.remove(3);
25        System.out.print("ArrayList: " + list);
26    }
27}
28}
```

	Test	Input	Expected	Got	
✓	1	5 1 2 3 100 5	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	✓

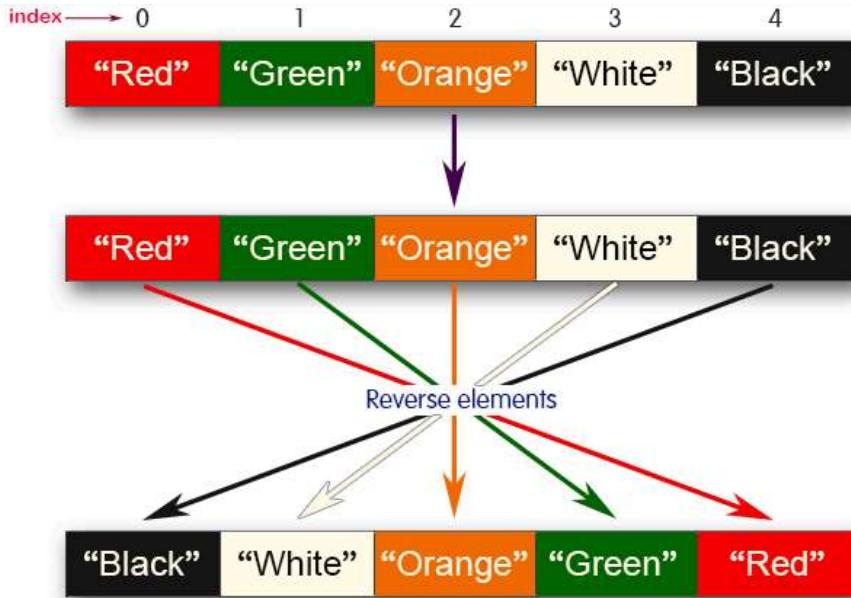
Passed all tests! ✓

**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 %)

```

1 import java.util.ArrayList;
2 import java.util.Collections;
3 import java.util.Scanner;
4 public class prog {
5     public static void main(String[] args) {
6         Scanner s = new Scanner(System.in);
7         ArrayList<String> colors = new ArrayList<>();
8         int n = s.nextInt();
9         s.nextLine();
10        for (int i = 0; i < n; i++) {
11            colors.add(s.nextLine());
12        }
13        System.out.println("List before reversing :");
14        System.out.println(colors);
15        Collections.reverse(colors);
16        System.out.println("List after reversing :");
17        System.out.println(colors);
18    }
19 }
20

```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	5 Red Green Orange White Black	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	✓
✓	2	4 CSE AIML AIDS CYBER	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	✓

Passed all tests! ✓

◀ Lab-10-MCQ

Jump to...

Lab-11-MCQ ►

[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-11-Set, Map](#) / [Lab-11-Logic Building](#)

---

**Status** Finished

**Started** Sunday, 17 November 2024, 11:51 AM

**Completed** Sunday, 17 November 2024, 12:11 PM

**Duration** 20 mins 8 secs

---

**Question 1**

Correct

Marked out of 1.00

**Java HashSet** class implements the Set interface, backed by a hash table which is actually a [HashMap](#) instance.

No guarantee is made as to the iteration order of the hash sets 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 hash code.
- 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

```

1
2 import java.util.HashSet;
3 import java.util.Scanner;
4 public class prog {
5     public static void main(String[] args) {
6         Scanner sc= new Scanner(System.in);
7         int n = sc.nextInt();
8         // Create a HashSet object called numbers
9         HashSet<Integer> numbers= new HashSet<>();
10        // Add values to the set
11        for(int i=0;i<n;i++)
12            numbers.add(sc.nextInt());
13
14        int skey=sc.nextInt();
15        // Show which numbers between 1 and 10 are in the set
16
17        if(numbers.contains(skey)){
18            System.out.println(skey+ " was found in the set.");
19        }
20        else {
21            System.out.println(skey + " was not found in the set.");
22        }
23    }
24 }
```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	5 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:

Golf

Cricket

Badminton

Football

Hockey

Volleyball

Handball

**SAMPLE OUTPUT:**

Football

Hockey

Cricket

Volleyball

Basketball

**Answer:** (penalty regime: 0 %)

```
1 import java.util.HashSet;
2 import java.util.Scanner;
3 import java.util.Set;
4 public class SetComparison {
5     public static void main(String[] args) {
6         Scanner scanner = new Scanner(System.in);
7         Set<String> set1 = new HashSet<>();
8         int n1 = scanner.nextInt();
9         scanner.nextLine();
10        for (int i = 0; i < n1; i++) {
11            set1.add(scanner.nextLine());
12        }
13        Set<String> set2 = new HashSet<>();
14        int n2 = scanner.nextInt();
15        scanner.nextLine();
16        for (int i = 0; i < n2; i++) {
17            set2.add(scanner.nextLine());
18        }
19        set1.retainAll(set2);
20        for (String element : set1) {
21            System.out.println(element);
22        }
23    }
24 }
```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	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 mapcontainsValue() Indicate if an entry with the specified value exists in the mapputIfAbsent() Write an entry into the map but only if an entry with the same key does not already existremove() Remove an entry from the mapreplace() Write to an entry in the map only if it existssize() 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](#)

```
1 import java.util.HashMap;
2 import java.util.Map.Entry;
3 import java.util.Set;
4 import java.util.Scanner;
5
6 class prog {
7     public static void main(String[] args) {
8         // Creating HashMap with default initial capacity and load factor
9         HashMap<String, Integer> map = new HashMap<String, Integer>();
10
11     String name;
12     int num;
13     Scanner sc = new Scanner(System.in);
14     int n = sc.nextInt(); // Reading the number of key-value pairs to input
15
16     // Looping to add entries to the map
17     for (int i = 0; i < n; i++) {
18         name = sc.next(); // Reading the key
19         num = sc.nextInt(); // Reading the value
20         map.put(name, num);
21     }
22
23     // Printing key-value pairs from the first map
24     Set<Entry<String, Integer>> entrySet = map.entrySet();
25     for (Entry<String, Integer> entry : entrySet) {
26         System.out.println(entry.getKey() + " : " + entry.getValue());
27     }
28
29     System.out.println("-----");
30
31     // Creating another HashMap
32     HashMap<String, Integer> anotherMap = new HashMap<String, Integer>();
33
34     // Inserting key-value pairs into anotherMap using put() method
35     anotherMap.put("SIX", 6);
36     anotherMap.put("SEVEN", 7);
37
38     // Inserting key-value pairs of map to anotherMap using putAll() method
39     anotherMap.putAll(map); // Add all entries from map into anotherMap
40
41     // Printing key-value pairs of anotherMap
42     entrySet = anotherMap.entrySet();
43     for (Entry<String, Integer> entry : entrySet) {
44         System.out.println(entry.getKey() + " : " + entry.getValue());
45     }
46
47     // Adds key-value pair 'FIVE-5' only if it is not present in map
48     map.putIfAbsent("FIVE", 5);
49
50     // Retrieving a value associated with key 'TWO'
51     int value = map.get("TWO");
52     System.out.println(value);
```

	<b>Test</b>	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	1	3 ONE 1 TWO ----- 2 THREE 3	ONE : 1 TWO : 2 THREE : 3  SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 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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**Status** Finished

**Started** Sunday, 17 November 2024, 12:12 PM

**Completed** Sunday, 17 November 2024, 12:33 PM

**Duration** 20 mins 37 secs

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### Question 1

Correct

Marked out of 5.00

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 (000000000000000000000000000000).

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: 00001000000000000000001000000000001000000000001000000000001

The decoded string (original word) will be: WIPRO

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

### For example:

Input	Result
010010001	ZYX
0000100000000000000000000000000010000000000001000000000000100000000000000001	WIPRO

**Answer:** (penalty regime: 0 %)

```
1 import java.util.Scanner;
2 public class DecodeString {
3     public static void main(String[] args) {
4
5         Scanner scanner = new Scanner(System.in);
6         String input = scanner.nextLine();
7         String decodedWord = decode(input);
8         System.out.println(decodedWord);
9         scanner.close();
10    }
11
12    public static String decode(String input) {
13
14        String[] segments = input.split("1");
15        StringBuilder decodedWord = new StringBuilder();
16
17
18        for (String segment : segments) {
19            if (segment.isEmpty()) continue;
20            int zeroCount = segment.length();
21            char decodedChar = (char) ('A' + (26 - zeroCount));
22            decodedWord.append(decodedChar);
23        }
24
25        return decodedWord.toString();
26    }
}
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	010010001	ZYX	ZYX	✓
✓	00001000000000000000000010000000000010000000000010000000000001	WIPRO	WIPRO	✓

Passed all tests! ✓

/

**Question 2**

Correct

Marked out of 5.00

Given two char arrays input1[] and input2[] containing only lower case 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 digit as output.

Note:

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

Example 1:

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

input2: {'b', 'c'}

output: 8

Explanation:

'b' and 'c' are present in both the arrays.

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	8
b c	

**Answer:** (penalty regime: 0 %)

```

1 import java.util.HashSet;
2 import java.util.Scanner;
3
4 public class CommonAlphabets {
5
6     public static void main(String[] args) {
7         Scanner scanner = new Scanner(System.in);
8
9         String input1Str = scanner.nextLine();
10        char[] input1 = input1Str.replace(" ", "").toCharArray(); // Convert to char array, remove spaces
11
12        String input2Str = scanner.nextLine();
13        char[] input2 = input2Str.replace(" ", "").toCharArray(); // Convert to char array, remove spaces
14        int result = getSingleDigitSum(input1, input2);
15        System.out.println(result);
16        scanner.close();
17    }
18
19    public static int getSingleDigitSum(char[] input1, char[] input2) {
20        HashSet<Character> input1Set = new HashSet<>();
21        for (char c : input1) {
22            input1Set.add(c);
23        }
24        HashSet<Character> commonChars = new HashSet<>();
25        for (char c : input2) {
26            if (input1Set.contains(c)) {
27                commonChars.add(c);
28            }
29        }
    }

```

```
-- 30     int sum1 = 0;
31  for (char c : commonChars) {
32      sum1 += (int) c;
33  }
34  return getSingleDigit(sum1);
35 }
36 public static int getSingleDigit(int num) {
37     while (num >= 10) {
38         num = sumDigits(num);
39     }
40     return num;
41 }
42 public static int sumDigits(int num) {
43     int sum = 0;
44     while (num > 0) {
45         sum += num % 10;
46         num /= 10;
47     }
48     return sum;
49 }
50 }
```

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

Passed all tests! ✓

//

**Question 3**

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 "Wipro TechNologies BangaLore", the new reversed sentence should be "orpiW seigoloNhceT eroLagnaB".

If `case_option` = 1, reversal of words with retaining position's case i.e., if the original sentence is "Wipro TechNologies BangaLore", the new reversed sentence should be "Orpiw Seigolonhcet ErolaGnab".

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 character 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 "Wipro TechNologies, Bangalore" the new reversed sentence should be "Orpiw ,seiGolonhceT Erolagnab". 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	Wipro Technologies Bangalore	0	orpiW seigolonhceT eroLagnaB
2	Wipro Technologies, Bangalore	0	orpiW ,seigolonhceT eroLagnaB
3	Wipro Technologies Bangalore	1	Orpiw Seigolonhcet Erolagnab
4	Wipro Technologies, Bangalore	1	Orpiw ,seigolonhceT Erolagnab

**For example:**

Input	Result
Wipro Technologies Bangalore 0	orpiW seigolonhceT eroLagnaB
Wipro Technologies, Bangalore 0	orpiW ,seigolonhceT eroLagnaB
Wipro Technologies Bangalore 1	Orpiw Seigolonhcet Erolagnab
Wipro Technologies, Bangalore 1	Orpiw ,seigolonhceT Erolagnab

**Answer:** (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 public class ReverseWords {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         String sentence = scanner.nextLine();
7         int caseOption = scanner.nextInt();
8         String reversedSentence = reverseWords(sentence, caseOption);
9         System.out.println(reversedSentence);
10        scanner.close();
11    }
12
13 public static String reverseWords(String sentence, int caseOption) {
14     String[] words = sentence.split(" ");
15     StringBuilder result = new StringBuilder();
16

```

```

17   for (String word : words) {
18     String reversedWord = reverseWord(word, caseOption);
19     result.append(reversedWord).append(" ");
20   }
21
22   return result.toString().trim();
23 }
24
25 private static String reverseWord(String word, int caseOption) {
26   char[] chars = word.toCharArray();
27   char[] reversedChars = new char[chars.length];
28   for (int i = 0; i < chars.length; i++) {
29     reversedChars[i] = chars[chars.length - 1 - i];
30   }
31   if (caseOption == 1) {
32     for (int i = 0; i < chars.length; i++) {
33       if (Character.isUpperCase(chars[i])) {
34         reversedChars[i] = Character.toUpperCase(reversedChars[i]);
35       } else if (Character.isLowerCase(chars[i])) {
36         reversedChars[i] = Character.toLowerCase(reversedChars[i]);
37       }
38     }
39   }
40
41   return new String(reversedChars);
42 }
43 }
44

```

	Input	Expected	Got	
✓	Wipro Technologies Bangalore 0	orpiW seigolonhceT erolagnaB	orpiW seigolonhceT erolagnaB	✓
✓	Wipro Technologies, Bangalore 0	orpiW ,seigolonhceT erolagnaB	orpiW ,seigolonhceT erolagnaB	✓
✓	Wipro Technologies Bangalore 1	Orpiw Seigolonhcet Erolagnab	Orpiw Seigolonhcet Erolagnab	✓
✓	Wipro Technologies, Bangalore 1	Orpiw ,seigolonhceT Erolagnab	Orpiw ,seigolonhceT Erolagnab	✓

Passed all tests! ✓

◀ Lab-12-MCQ

Jump to...

Identify possible words ►

# **STATIONARY SHOP BILL CALCULATOR**

**A MINI-PROJECT BY:**

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*in partial fulfillment of the award of the degree*

**OF**

**BACHELOR OF ENGINEERING**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**



**RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI**

**An Autonomous Institute**

**CHENNAI**

**NOVEMBER 2024**

## **BONAFIDE CERTIFICATE**

Certified that this project "**STATIONARY SHOP BILL CALCULATOR**" is the bona fide work of "**KAVISH RAGAV S, KIRAN HARINARAYANA**" who carried out the project work under my supervision.

Submitted for the practical examination held on \_\_\_\_\_

**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

## **ABSTRACT**

**The Stationary Shop Bill Calculator is a software solution designed to automate the billing process in a stationery retail environment. The system allows shopkeepers to efficiently manage and calculate customer purchases, applying appropriate taxes and discounts based on predefined rules. Users can input the quantity and price of various stationery items, such as pens, notebooks, and other supplies, and the system computes the total amount due. It provides detailed itemized bills that include product descriptions, quantities, unit prices, total amounts, taxes, and final totals. The calculator also allows for easy updates to item prices and tax rates, ensuring flexibility in adapting to market changes. By streamlining the bill generation process, the tool reduces manual errors, saves time, and improves operational efficiency for shop owners. This project can be implemented using basic programming techniques, making it suitable for small-scale business management.**

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# **INTRODUCTION**

## **1.1 INTRODUCTION**

The Stationary Shop Bill Calculator is a software application developed to simplify and automate the billing process in a stationery shop. The project is designed to calculate the total cost of a customer's purchase, including the ability to apply taxes and discounts. The calculator allows shopkeepers to input product details such as item name, quantity, and price, and the system automatically computes the total cost of the purchase. It also generates an itemized bill, showing each product, its quantity, unit price, total price, applicable taxes, and the final amount payable.

## **1.1 IMPLEMENTATION**

The **STATIONARY SHOP BILL CALCULATOR** project discussed here is implemented using the concepts of **JAVA FRAME** and **MYSQL**.

## **1.2 SCOPE OF THE PROJECT**

This project aims to reduce human error and save time by eliminating manual calculations and offering a more efficient way to handle sales transactions. It provides a user-friendly interface and can be easily updated to accommodate price changes, new products, or variations in tax rates. The Stationary Shop Bill Calculator is a practical tool that supports the smooth operation of small stationery shops, enabling accurate and fast billing for every customer.

## **SYSTEM SPECIFICATIONS**

### **2.1 HARDWARE SPECIFICATIONS:**

PROCESSOR : Intel i5  
MEMORY SIZE : 4GB(Minimum)  
HARD DISK : 500 GB of free space

### **2.2 SOFTWARE SPECIFICATIONS:**

PROGRAMMING LANGUAGE : Java, MySQL  
FRONT-END : Java  
BACK-END : MySQL  
OPERATING SYSTEM : Windows 11

## SAMPLE CODE

### 3.1 LOGIN PAGE

```
package proj;
import javax.swing.JFrame;

import java.awt.EventQueue;

import javax.swing.JFrame;
import javax.swing.JPanel;
import javax.swing.JPasswordField;
import javax.swing.border.EmptyBorder;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import java.awt.Color;
import javax.swing.SwingConstants;
import javax.swing.JTextField;
import java.awt.Rectangle;
import java.awt.Window;
import java.awt.Component;
import java.awt.Point;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import javax.swing.JFrame;
import java.awt.Font;
public class Demoframe extends JFrame {
    private static final long serialVersionUID = 1L;
    private JPanel contentPane;
    private final JLabel label = new JLabel("New label");
    private JTextField txtUsername;
    private JTextField username;
    private JTextField password;
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                try {
                    Demoframe frame = new Demoframe();
                    frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();}}});
    }
    public Demoframe() {
        setTitle("Stationery");
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setBounds(100, 100, 450, 300);
```

```

contentPane = new JPanel();
contentPane.setAlignmentX(Component.RIGHT_ALIGNMENT);
contentPane.setBounds(new Rectangle(10, 10, 10, 10));
contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
setContentPane(contentPane);
contentPane.setLayout(null);
JLabel lblNewLabel = new JLabel("STATIONERY SHOP");
lblNewLabel.setFont(new Font("Times New Roman", Font.ITALIC, 33));
lblNewLabel.setBounds(85, 11, 385, 69);
lblNewLabel.setForeground(Color.BLACK);
contentPane.add(lblNewLabel);
JLabel USERNAME = new JLabel("USERNAME");
USERNAME.setBounds(10, 91, 108, 14);
contentPane.add(USERNAME);
JLabel PASSWORD = new JLabel("PASSWORD");
PASSWORD.setBounds(10, 149, 99, 33);
contentPane.add(PASSWORD);
username = new JTextField();
username.setBounds(182, 88, 86, 20);
contentPane.add(username);
username.setColumns(10);
password = new JTextField();
password.setBounds(182, 144, 86, 32);
contentPane.add(password);
password.setColumns(10);
JButton btnLogIn = new JButton("LOG IN");
btnLogIn.setFont(new Font("Verdana", Font.BOLD, 20));
btnLogIn.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        String uname=username.getText();
        String pad=password.getText();
        if(uname.equals("abc")&&pad.equals("abc"))
        {
            JOptionPane.showMessageDialog(btnLogIn,"you have logged
in");
            secondbox second=new secondbox();
            second.setVisible(true);
        }
        else
        {
            JOptionPane.showMessageDialog(btnLogIn, "Invalid pw or
username");
        }
    }
});
```

```
btnLogIn.setBounds(157, 197, 142, 53);
contentPane.add(btnLogIn);}}
```

### 3.2 PRODUCT DESCRIPTION PAGE

```
package proj;

import java.awt.Color;
import java.awt.Component;
import java.awt.EventQueue;
import java.awt.Font;
import java.awt.Rectangle;
import java.sql.*;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.border.EmptyBorder;
import javax.swing.JButton;
import java.awt.SystemColor;
import javax.swing.AbstractAction;
import java.awt.event.ActionEvent;
import javax.swing.Action;
import java.awt.event.ActionListener;

public class secondbox extends JFrame {
    private JPanel contentPane;
    private final JLabel label = new JLabel("New label");

    private static final long serialVersionUID = 1L;
    private final Action action = new SwingAction();

    /**
     * Launch the application.
     */
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                try {
                    secondbox frame = new secondbox();
                    frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        });
    }
}
```

```

        }
    });
}

/***
 * Create the frame.
 */
public secondbox() {
    contentPane = new JPanel();
    contentPane.setAlignmentX(Component.RIGHT_ALIGNMENT);
    contentPane.setBounds(new Rectangle(10, 10, 10, 10));
    contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
    setContentPane(contentPane);
    contentPane.setLayout(null);
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setBounds(100, 100, 799, 470);
    JLabel bill = new JLabel("DETAILS OF THE PRODUCT ");
    bill.setFont(new Font("Tahoma", Font.BOLD, 35));
    bill.setBounds(141, 10, 773, 32);
    bill.setForeground(new Color(0, 0, 0));
    contentPane.add(bill);
    JLabel aa=new JLabel("{ 1:'Ball Point Pen','price':6 }");
    aa.setBounds(10, 10, 6319, 93);
    contentPane.add(aa);
    JLabel bb=new JLabel("{ 2:'Gel Pen','price':10.0 }");
    bb.setBounds(264, 18, 5969, 76);
    contentPane.add(bb);
    JLabel cc=new JLabel("{ 3:'Fountain Pen','price':80.0 }");
    cc.setBounds(499, 27, 6401, 58);
    contentPane.add(cc);
    JLabel dd=new JLabel("{ 4:'Sketch Pen(10 colours)','price':100 }");
    dd.setBounds(10, 11, 6585, 144);
    contentPane.add(dd);
    JLabel ee=new JLabel("{ 5:'Highlighter','price':15 }");
    ee.setBounds(264, 41, 6585, 84);
    contentPane.add(ee);
    JLabel ff=new JLabel("{ 6:'White board marker','price':20 }");
    ff.setBounds(499, 10, 6585, 144);
    contentPane.add(ff);
    JLabel gg=new JLabel("{ 7:'Roller Scale','price':40 }");
    gg.setBounds(10, 40, 6585, 144);
    contentPane.add(gg);
    JLabel hh=new JLabel("{ 8:'Pencil','price':4 }");
    hh.setBounds(264, 40, 6585, 144);
    contentPane.add(hh);
    JLabel ii=new JLabel("{ 9:'Eraser','price':5 }");

```

```
ii.setBounds(499, 66, 6401, 93);
contentPane.add(ii);
JLabel jj=new JLabel("{ 10:'Sharpner','price':3 }\\\"");
jj.setBounds(10, 88, 6473, 93);
contentPane.add(jj);
JLabel kk=new JLabel("{ 11:'Correction Pen','price':30 }");
kk.setBounds(264, 62, 6585, 144);
contentPane.add(kk);
JLabel ll=new JLabel("{ 12:'Ink filler','price':10 }");
ll.setBounds(499, 62, 6585, 144);
contentPane.add(ll);
JLabel mm=new JLabel("{ 13:'Ink bottle','price':50 }");
mm.setBounds(10, 88, 6585, 144);
contentPane.add(mm);
JLabel nn=new JLabel("{ 14:'Scale','price':15 }");
nn.setBounds(264, 88, 6585, 144);
contentPane.add(nn);
JLabel oo=new JLabel("{ 15:'LongScale','price':25 }");
oo.setBounds(499, 114, 6570, 93);
contentPane.add(oo);
JLabel pp=new JLabel("{ 16:'Mechanical Pencil','price':20 }");
pp.setBounds(10, 139, 6575, 93);
contentPane.add(pp);
JLabel qq=new JLabel("{ 17:'Stick file','price':15 }");
qq.setBounds(264, 136, 6352, 93);
contentPane.add(qq);
JLabel rr=new JLabel("{ 18:'20 Leaf folder file','price':45 }");
rr.setBounds(499, 149, 6505, 72);
contentPane.add(rr);
JLabel ss=new JLabel("{ 19:'Folder file','price':30 }");
ss.setBounds(10, 166, 6473, 88);
contentPane.add(ss);
JLabel tt=new JLabel("{ 20:'Paper pin(1 pack)','price':15 }");
tt.setBounds(264, 136, 6585, 144);
contentPane.add(tt);
JLabel uu=new JLabel("{ 21:'Gem Clip(1 Pack)','price':15 }");
uu.setBounds(499, 181, 6505, 58);
contentPane.add(uu);
JLabel vv=new JLabel("{ 22:'Binder Clip(1 Pack)','price':17 }");
vv.setBounds(10, 166, 6585, 144);
contentPane.add(vv);
JLabel ww=new JLabel("{ 23:'A4 Paper (1 Pack)','price':15 }");
ww.setBounds(264, 166, 6585, 144);
contentPane.add(ww);
JLabel xx=new JLabel("{ 24:'Unruled Note (Short)','price':50 }");
xx.setBounds(499, 166, 6585, 144);
```

```

contentPane.add(xx);
JLabel yy=new JLabel("{25:'Ruled Note(Short)','price':55}");
yy.setBounds(10, 222, 6401, 88);
contentPane.add(yy);
JLabel zz=new JLabel("{26:'Unruled Note(Long)', 'price':90}");
zz.setBounds(264, 195, 6585, 144);
contentPane.add(zz);
JLabel aaa=new JLabel("\'{27:'Ruled Note(Long)', 'price':100}\\"");
aaa.setBounds(499, 194, 6585, 144);
contentPane.add(aaa);
JLabel bbb=new JLabel("{28:'Exam Pad', 'price':70}");
bbb.setBounds(10, 225, 6585, 144);
contentPane.add(bbb);
JLabel ccc=new JLabel("{29:'Gel Pen refill(Pack of 3)', 'price':25}");
ccc.setBounds(264, 225, 6585, 144);
contentPane.add(ccc);
JLabel ddd=new JLabel("{30:'Fountain Pen refill(Pack of 5)', 'price':25}");
ddd.setBounds(509, 225, 6585, 144);
contentPane.add(ddd);

JButton billbutton = new JButton("BILL");
billbutton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        StationaryPriceCalculator detailss = new
StationaryPriceCalculator();
    }
});

billbutton.setAction(action);
billbutton.setFont(new Font("Serif", Font.BOLD, 40));
billbutton.setBounds(309, 336, 142, 45);
contentPane.add(billbutton);

}

private class SwingAction extends AbstractAction {
    public SwingAction() {
        putValue(NAME, "BILL");
        putValue(SHORT_DESCRIPTION, "Some short description");
    }
    public void actionPerformed(ActionEvent e) {
    }
}
}

```

### **3.3 STATIONARY SHOP BILL CALCULATOR:**

```
package proj;
import javax.swing.*;
import java.awt.event.*;
import java.sql.*;

public class StationaryPriceCalculator {
    private JFrame frame;
    private JTextField productField;
    private JTextField quantityField;
    private JTextArea billArea;
    private double totalAmount = 0;

    public StationaryPriceCalculator() {
        frame = new JFrame("Shopping Application");
        frame.setSize(400, 400);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setLayout(null);

        JLabel label = new JLabel("Enter Product Name:");
        label.setBounds(10, 10, 150, 25);
        frame.add(label);

        productField = new JTextField();
        productField.setBounds(150, 10, 150, 25);
        frame.add(productField);

        JLabel quantityLabel = new JLabel("Enter Quantity:");
        quantityLabel.setBounds(10, 50, 150, 25);
        frame.add(quantityLabel);

        quantityField = new JTextField();
        quantityField.setBounds(150, 50, 150, 25);
        frame.add(quantityField);

        JButton addButton = new JButton("Add Product");
        addButton.setBounds(10, 90, 150, 25);
        addButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                addProduct();
            }
        });
        frame.add(addButton);

        JButton billButton = new JButton("Generate Bill");
        billButton.setBounds(200, 90, 150, 25);
```

```

billButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        generateBill();
    }
});
frame.add(billButton);

billArea = new JTextArea();
billArea.setBounds(10, 130, 360, 220);
billArea.setEditable(false);
frame.add(billArea);

frame.setVisible(true);
}

private void addProduct() {
    String productName = productField.getText();
    int quantity = Integer.parseInt(quantityField.getText());

    try (Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Javaproj ", "root",
"Kavishragav25231")) {
        PreparedStatement stmt = conn.prepareStatement("SELECT price FROM Stationary
WHERE name = ?");
        stmt.setString(1, productName);
        ResultSet rs = stmt.executeQuery();

        if (rs.next()) {
            double price = rs.getDouble("price");
            double totalPriceForItem = price * quantity;
            totalAmount += totalPriceForItem;
            billArea.append(productName + " (x" + quantity + "): ₹" + totalPriceForItem +
"\n");
            productField.setText("");
            quantityField.setText("");
        } else {
            JOptionPane.showMessageDialog(frame, "Product not found.");
        }
    } catch (SQLException ex) {
        ex.printStackTrace();
    }
}

private void generateBill() {
    JOptionPane.showMessageDialog(frame, "Total Amount: ₹" + totalAmount);

    // Reset for next transaction
}

```

```
totalAmount = 0;  
billArea.setText(""); // Clear the bill area  
}  
  
public static void main(String[] args) {  
    new StationaryPriceCalculator();  
}
```

### 3.4 DATABASE MANAGEMENT

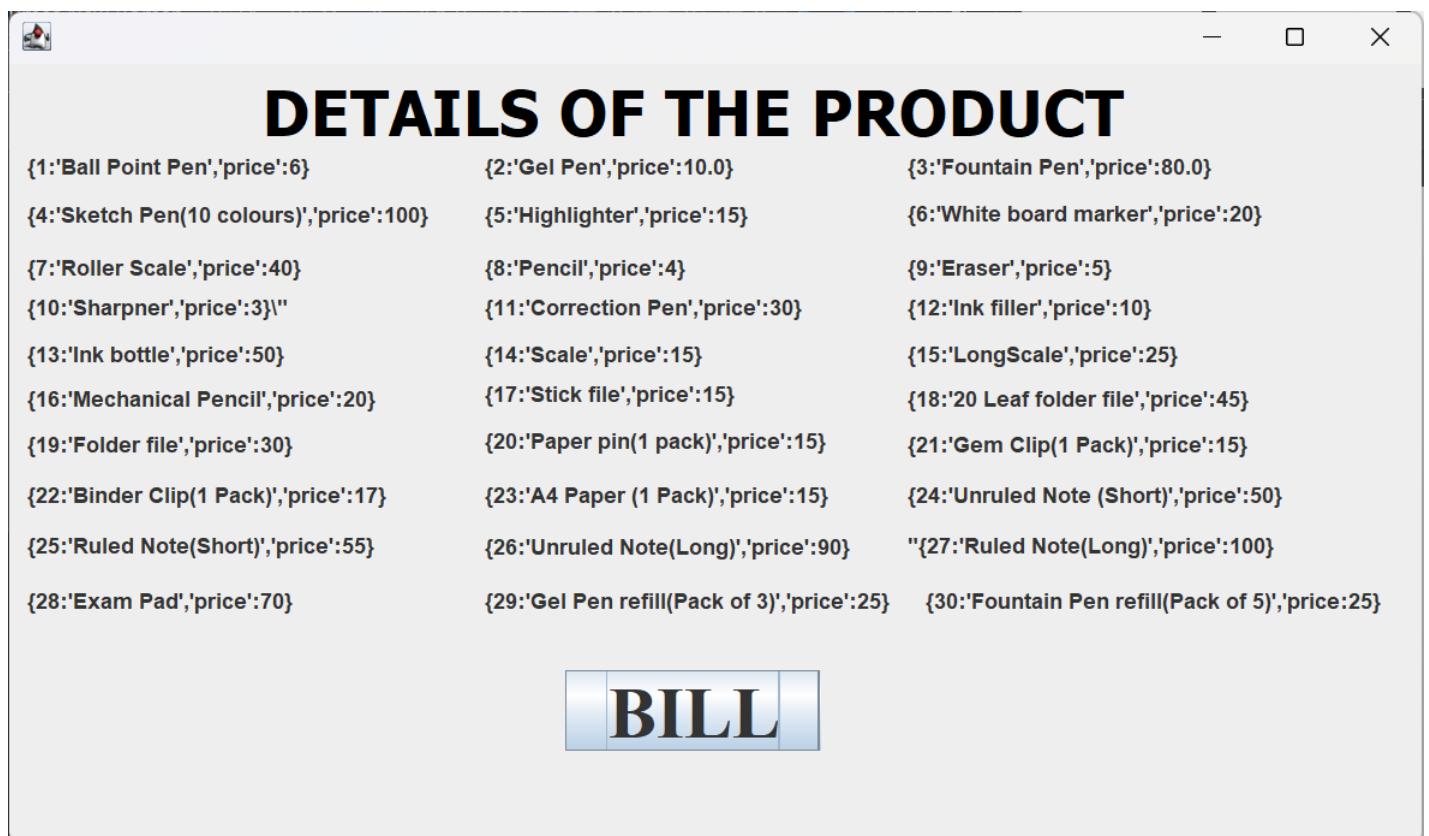
```
package proj;
import java.sql.*;
public class Javaproj {
    public static void main(String[] args) throws Exception{
        readrecords();
    }
    public static void readrecords() throws Exception{
        String url="jdbc:mysql://localhost:3306/Javaproj";
        String username="root";
        String password="Kavishragav25231";
        String query="select * from str";
        Connection conn=DriverManager.getConnection(url,username,password);
        Statement stmt1=conn.createStatement();
        ResultSet rs=stmt1.executeQuery(query);
        System.out.println("Table create successfully...");
        while(rs.next()) {
            System.out.println("Name is"+rs.getString(1));
            System.out.println("Price is"+rs.getInt(2));
        }
        conn.close();
    }
}
```

## SNAPSHOTS

### 4.1 LOGIN PAGE



### 4.2 PRODUCT DESCRIPTION PAGE



#### 4.3 FINAL BILL PAGE

The screenshot shows a Windows application window titled "Shopping Application". The window has a standard title bar with minimize, maximize, and close buttons. Inside the window, there are two text input fields: one labeled "Enter Product Name:" and another labeled "Enter Quantity:". Below these fields are two buttons: "Add Product" on the left and "Generate Bill" on the right. A large, empty rectangular area is present at the bottom of the window.

Enter Product Name:

Enter Quantity:

Add Product      Generate Bill



## **CONCLUSION**

### **### Conclusion**

The \*\*Stationary Shop Bill Calculator\*\* project successfully demonstrates the automation of the billing process for a stationery shop using \*\*Java Frame (AWT)\*\*. This system efficiently calculates the total cost, applies taxes, and generates an itemized bill, improving the speed and accuracy of transactions. By eliminating manual calculations, the project reduces human error and enhances operational efficiency for shopkeepers.

The user-friendly interface ensures that even those with minimal technical expertise can easily navigate and use the system. This project meets its primary objectives of simplifying the billing process and providing a reliable tool for stationery shops.

In conclusion, the \*\*Stationary Shop Bill Calculator\*\* is an effective solution for small businesses, offering both time-saving and error-reducing capabilities. With the foundation laid in this project, future enhancements can include features like saving bills, integrating a database, and moving to more advanced GUI frameworks like Swing for improved interface design.

## **REFERENCES**

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2. <https://www.wikipedia.org/>
3. <https://www.w3schools.com/sql/>
4. [SQL | Codecademy](#)