Rajalakshmi Engineering College

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Batch: 2028
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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 15

Section 1 : MCQ

1. What will be the output of the following code?

```
class Test {
   public static void main(String[] args) {
      int num = 15;
      if (num > 10)
         if (num % 3 == 0)
            System.out.print("Divisible");
         else
            System.out.print("Not Divisible");
   }
}
```

Answer

Divisible

Status : Correct ***Marks : 1/1***

2. What will be the output of the following code?

```
class ConditionTest {
   public static void main(String[] args) {
      int x = 10;
      if (x > 5)
         System.out.print("High");
   }
}
```

Answer

High

Status : Correct ***Marks : 1/1***

3. What will be the output of the following code?

```
class Test {
   public static void main(String[] args) {
      int x = 5, y = 2;
      if (x + y == 10)
         System.out.print("Ten");
      else if (x - y == 3)
         System.out.print("Three");
      else
         System.out.print("None");
   }
}
```

Answer

Three

Status : Correct ***Marks : 1/1***

4. What will be the output of the following code?

```
class Main {
    public static void main(String[] args) {
        for (int i = 5; i > 0; i--) {
            System.out.print(i + " ");
        }
    }
}
```

Answer

5 4 3 2 1

Status : Correct ***Marks : 1/1***

5. What will be the output of the following code?

```
class LoopTest {
    public static void main(String[] args) {
        int i = 1;
        do {
            System.out.print(i + " ");
            i *= 2;
        } while (i <= 8);
    }
}
```

Answer

1 2 4 8

Status : Correct ***Marks : 1/1***

6. What will be the output of the following code?

```
class Test {
    public static void main(String[] args) {
        int a = 4, b = 5;
        if ((a + b) % 2 == 0)
            System.out.print("Even");
        else
            System.out.print("Odd");
```

```
    }
}
```

Answer

Odd

Status : Correct ***Marks : 1/1***

7. What will be the output of the following code?

```
public class Main {
    public static void main(String[] args) {
        int i = 1;
        while(i < 10) {
            i += 2;
        }
        System.out.println(i);
    }
}
```

Answer

11

Status : Correct ***Marks : 1/1***

8. What will be the output of the following Java code snippet?

```
public class Main {
    public static void main(String[] args) {
        int score = 75;
        if(score >= 90) {
            System.out.println("Grade: A");
        } else if(score >= 80) {
            System.out.println("Grade: B");
        } else if(score >= 70) {
            System.out.println("Grade: C");
        } else {
            System.out.println("Grade: D");
        }
```

```
    }
}
```

Answer

Grade: C

Status : Correct ***Marks : 1/1***

9. What will be the output of the following code?

```
public class Main {
    public static void main(String[] args) {
        int sum = 0;
        for(int i = 1; i <= 5; i++) {
            sum += i;
        }
        System.out.println(sum);
    }
}
```

Answer

15

Status : Correct ***Marks : 1/1***

10. What will be the output of the following code?

```
class ConditionTest {
    public static void main(String[] args) {
        int a = 7;
        if (a == 7)
            System.out.print("Match");
        else
            System.out.print("No Match");
    }
}
```

Answer

Match

Status : Correct **Marks : 1/1**

11. What will be the output of the following code?

```
public class Main {
   public static void main(String[] args) {
      for(int i = 1; i <= 20; i = i * 2) {
         System.out.print(i + " ");
      }
   }
}
```

Answer

1 2 4 8 16

Status : Correct **Marks : 1/1**

12. What will be the output of the following code?

```
public class Main {
   public static void main(String[] args) {
      int i = 10;
      do {
         System.out.print(i + " ");
         i -= 3;
      } while(i > 0);
   }
}
```

Answer

10 7 4 1

Status : Correct **Marks : 1/1**

13. What will be the output of the following code?

```
class Loop {
   public static void main(String[] args) {
```

```
        for (int i = 1; i <= 3; i++) {
            for (int j = 1; j <= 2; j++) {
                System.out.print(i + "" + j + " ");
            }
        }
    }
}
```

Answer

11 12 21 22 31 32

Status : Correct ***Marks : 1/1***

14. What will be the output of the following code?

```
class LoopTest {
    public static void main(String[] args) {
        int i = 1;
        while (i > 0) {
            System.out.print(i + " ");
            i++;
            if (i == 5) break;
        }
    }
}
```

Answer

1 2 3 4

Status : Correct ***Marks : 1/1***

15. What will be the output of the following Java code snippet?

```
public class Main {
    public static void main(String[] args) {
        int day = 4;
        String result = "";
        switch(day) {
            case 1:
```

```
            result = "Monday";
            break;
        case 2:
            result = "Tuesday";
            break;
        case 3:
            result = "Wednesday";
            break;
        default:
            result = "Other Day";
    }
    System.out.println(result);
  }
}
```

Answer

Other Day

Status : Correct ***Marks : 1/1***

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Arun is working on a project to automate the process of determining whether a student has passed or failed based on their subject marks.

He aims to create a simple program that takes positive integers as marks for five subjects from the user. If the average of the marks is greater than or equal to 50, the student has passed the exam. Otherwise, the student has failed.

Help Arun to implement the project.

Input Format

The input consists of five space-separated integers, representing the marks in five subjects.

Output Format

The first line of output prints "Average score: " followed by an integer representing the average score.

The second line prints one of the following:

1. If the condition is satisfied, print "The student has passed".
2. Otherwise, the output prints "The student has failed".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 50 60 70 80 90

Output: Average score: 70
The student has passed

Answer

```
import java.util.Scanner;

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

      int m1 = sc.nextInt();
      int m2 = sc.nextInt();
      int m3 = sc.nextInt();
      int m4 = sc.nextInt();
      int m5 = sc.nextInt();

      int average = (m1 + m2 + m3 + m4 + m5) / 5;

      System.out.println("Average score: " + average);
      if (average >= 50) {
         System.out.println("The student has passed");
      } else {
         System.out.println("The student has failed");
      }
```

```
        sc.close();
    }
}
```

Status : Correct ***Marks : 10/10***

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Samantha is a diligent math student who is exploring the world of programming. She is learning Java and has recently studied conditional statements. One day, her teacher gives her an interesting problem to solve, which takes a number as input and checks whether it is a multiple of 5 or 7.

Help her complete the task.

Input Format

The input consists of a single integer N, representing the number to be checked.

Output Format

If the number is a multiple of 5 but not 7, the output prints "N is a multiple of 5".

If the number is a multiple of 7, the output prints "N is a multiple of 7".

Otherwise the output prints "N is neither multiple of 5 nor 7" where N is an entered integer.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10
Output: 10 is a multiple of 5

Answer

```
import java.util.Scanner;

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

        if (N % 7 == 0) {
            System.out.println(N + " is a multiple of 7");
        } else if (N % 5 == 0) {
            System.out.println(N + " is a multiple of 5");
        } else {
            System.out.println(N + " is neither multiple of 5 nor 7");
        }

        sc.close();
    }
}
```

Status : Correct ***Marks : 10/10***

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q3

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

John is a fitness trainer, and he wants to use the BMI calculator to assess the body mass index of his clients. He has a list of clients based on their height and weight.

John plans to write a program to quickly determine the BMI and provide a classification for each client.

If BMI is less than 18.5, the program will classify it as "Underweight"If BMI is between 18.6 and 24.9, the program will classify it as "Normal Weight"If BMI is between 25.0 and 29.9, the program will classify it as "Overweight"If BMI is 30.0 or higher, the program will classify it as "Obese"

Note: Formula to calculate BMI = weight/(height*height)

Input Format

The first line of input consists of a double value, representing the height of the person in meters.

The second line consists of a double value, representing the weight of the person in kilograms.

Output Format

The first line of output prints "BMI: " followed by a double (rounded to two decimal places) representing the calculated BMI.

The second line prints "Classification: " followed by a string indicating the BMI category (Underweight, Normal Weight, Overweight, or Obese).

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1.2
45.2

Output: BMI: 31.39
Classification: Obese

Answer

```
import java.util.Scanner;
import java.text.DecimalFormat;

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

        double height = sc.nextDouble();
        double weight = sc.nextDouble();

        double bmi = weight / (height * height);

        DecimalFormat df = new DecimalFormat("0.00");
        String bmiFormatted = df.format(bmi);

        String classification;
```

```
        if (bmi < 18.5) {
            classification = "Underweight";
        } else if (bmi >= 18.6 && bmi <= 24.9) {
            classification = "Normal Weight";
        } else if (bmi >= 25.0 && bmi <= 29.9) {
            classification = "Overweight";
        } else {
            classification = "Obese";
        }

        System.out.println("BMI: " + bmiFormatted + " Classification: " +
classification);

        sc.close();
    }
}
```

Status : Correct **Marks : 10/10**

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Amit wants to evaluate the depreciation of his car over time to understand its current value and categorize it based on that value.

Write a program that helps him determine the current value of his car after a certain number of years of depreciation and classify it into one of three categories:

High: If the current value is greater than 10,000.Medium: If the current value is between 5,000 and 10,000, both inclusive.Low: If the current value is less than 5,000.

The depreciation rate of the car is 15% per year. The program should calculate the current value of the car after applying this depreciation over the given number of years and print the current value along with the category.

Input Format

The first line of input consists of an integer, representing the initial cost of the car.

The second line consists of an integer, representing the number of years the car has been depreciating.

Output Format

The first line of output prints a double value, representing the current value of the car, rounded off to two decimal places "Current Value: <value>".

The second line prints its category "Category: <categories>".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 20000
5
Output: Current Value: 8874.11
Category: Medium

Answer

```
import java.util.Scanner;

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

        // Reading inputs
        int initialCost = scanner.nextInt();
        int years = scanner.nextInt();

        double currentValue = initialCost;

        // Apply 15% depreciation annually
        for (int i = 0; i < years; i++) {
            currentValue *= 0.85;
        }
```

```
        // Round to 2 decimal places for display
        String formattedValue = String.format("%.2f", currentValue);

        // Determine category
        String category;
        if (currentValue > 10000) {
            category = "High";
        } else if (currentValue >= 5000) {
            category = "Medium";
        } else {
            category = "Low";
        }

        // Output as per required format
        System.out.println("Current Value: " + formattedValue);
        System.out.println("Category: " + category);

        scanner.close();
    }
}
```

Status : Correct **Marks : 10/10**

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q6

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Maya, a student in an arts and crafts class, wants to create a pattern using stars (*) in a specific format. She plans to use a program to help her construct the pattern.

Write a program that takes an integer as input and constructs the following pattern using nested for loops.

Input: 5

Output:

*

* *

```
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

Input Format

The input consists of a number (integer) representing the number of rows.

Output Format

The output displays the required pattern.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 5

Output:

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

Answer

```
import java.util.Scanner;

class StarPattern {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
        int rows = scanner.nextInt();

        // Upper half of the pattern
        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print("* ");
            }
        }

        // Lower half of the pattern
        for (int i = rows - 1; i >= 1; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print("* ");
            }
        }

        scanner.close();
    }
}
```

Status : Correct **Marks : 10/10**

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q8

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

A bank generates secure codes using 3-digit numbers where each digit is unique, and the code must be divisible by 3. You are tasked with generating the first N such codes based on user input, ensuring the digits are unique and the number is divisible by 3.

Note: Use nested for loops to solve.

Input Format

The first line contains an integer N representing the number of valid codes to generate.

Output Format

The output prints N line,s each line contains a valid 3-digit code.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5

Output: 102
105
108
120
123

Answer

```
import java.util.Scanner;

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

      int N = scanner.nextInt();
      int count = 0;

      // Iterate through all 3-digit numbers from 100 to 999
      for (int num = 100; num <= 999 && count < N; num++) {
         int hundreds = num / 100;
         int tens = (num / 10) % 10;
         int ones = num % 10;

         // Check if digits are unique
         if (hundreds != tens && hundreds != ones && tens != ones) {
            // Check if divisible by 3
            if (num % 3 == 0) {
               System.out.println(num);
               count++;
            }
         }
      }

      scanner.close();
   }
```

}

Status : Correct *Marks : 10/10*