

Programming Essentials 2024

Assignment 3

Due: 26 February 2024 14:00

Fahad Khan

Student no 72905

Q1 :

```
public class Assign3Q1 {  
    public static void main(String[] args) {  
        char someChar = 'a';  
  
        System.out.println("Char is: " + someChar);  
  
        switch(Character.toLowerCase(someChar)) {  
            case 'a':  
            case 'e':
```

```

        case 'i':
        case 'o':
        case 'u':
            System.out.println(someChar + " is a vowel.");
            break;
        default:
            if (Character.isLetter(someChar)) {
                System.out.println(someChar + " is a consonant.");
            }
        }
    }
}

```

Q2:

```

public class Assign3Q2 {
    public static void main(String[] args) {
        int currentMonth = 1; // Change this value to test different months

        int daysInMonth;

        switch(currentMonth) {
            case 1: // January
            case 3: // March
            case 5: // May
            case 7: // July
            case 8: // August

```

```

        case 10: // October
        case 12: // December
            daysInMonth = 31;
            break;
        case 4: // April
        case 6: // June
        case 9: // September
        case 11: // November
            daysInMonth = 30;
            break;
        case 2: // February
            daysInMonth = 28; // Assuming non-leap year
            break;
        default:
            System.out.println("Invalid month!");
            return;
    }

    System.out.println("Number of days in month " + currentMonth + " is: " + daysInMonth);
}
}

```

Q3 :

```

public class FactorialCalculator {
    public static void main(String[] args) {
        int currentValue = 5; // The number for which we want to calculate the factorial
        int factorial = 1;
    }
}

```

```

if (currentValue < 0) {
    System.out.println("Factorial is not defined for negative numbers.");
} else if (currentValue == 0) {
    factorial = 1;
} else {
    for (int i = 1; i <= currentValue; i++) {
        factorial *= i;
    }
}

System.out.println("Factorial of " + currentValue + " is: " + factorial);
}
}

```

Q4:

```

public class ShapePattern {
    public static void main(String[] args) {
        int rows = 5; // Number of rows for the triangle

        // Outer loop for the number of rows
        for (int i = 1; i <= rows; i++) {
            // Inner loop for printing asterisks in each row
            for (int j = 1; j <= i; j++) {
                System.out.print("* ");
            }

            System.out.println(); // Move to the next line after each row
        }
    }
}

```

```
    }  
}  
}
```

Q;5

```
public class FactorialCalculator {  
    public static void main(String[] args) {  
        int currentValue = 5; // The number for which we want to calculate the factorial  
        int factorial = 1;  
        int counter = 1;  
  
        while (counter <= currentValue) {  
            factorial *= counter;  
            counter++;  
        }  
  
        System.out.println("Factorial of " + currentValue + " is: " + factorial);  
    }  
}
```

Q6;

```
public class FactorialCalculator {  
    public static void main(String[] args) {  
        int currentValue = 5; // The number for which we want to calculate the factorial  
        int factorial = 1;  
        int counter = 1;  
  
        while (counter <= currentValue) {
```

```
factorial *= counter;
```

```
counter++;
```

```
}
```

```
System.out.println("Factorial of " + currentValue + " is: " + factorial);
```

```
}
```

```
}
```