Riad Safowan
ID: 2112312642

Ex-2.6

```java
public class Task1 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number between 0 to 1000 : ");
        int number = scanner.nextInt();
        int digit, sum = 0;
        while (number != 0) {
            digit = number % 10;
            sum = sum + digit;
            number = number / 10;
        }
        System.out.println("The sum of all digits is " + sum);
    }
}
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk
Enter a number between 0 to 1000 : 789
The sum of all digits is 24

Process finished with exit code 0
```

Ex-3.26

```java
public class Task2 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int number = scanner.nextInt();
        System.out.println("Is " + number + " divisible by 5 and 6? : "
                + (number % 5 == 0 && number % 6 == 0));
        System.out.println("Is " + number + " divisible by 5 or 6? : "
                + (number % 5 == 0 || number % 6 == 0));
        System.out.println("Is " + number + " divisible by 5 or 6, but not both: "
                + (number % 5 == 0 ^ number % 6 == 0));
    }
}
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk/Conte
Enter a number : 10
Is 10 divisible by 5 and 6? : false
Is 10 divisible by 5 or 6? : true
Is 10 divisible by 5 or 6, but not both: true

Process finished with exit code 0
```

Ex-3.23

```java
public class Task3 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter points X coordinate: ");
        float x = scanner.nextInt();
        System.out.print("Enter points Y coordinate: ");
        float y = scanner.nextInt();

        if (Math.abs(x) > 10 / 2 || Math.abs(y) > 5 / 2)
            System.out.println("Point (" + x + "," + y + ") is not in the rectangle");
        else System.out.println("Point (" + x + "," + y + ") is in the rectangle");
    }
}
```

```
/Library/Java/JavaVirtualMachines/jdk-17
Enter points X coordinate: 2
Enter points Y coordinate: 2
Point (2.0,2.0) is in the rectangle

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk-17
Enter points X coordinate: 6
Enter points Y coordinate: 4
Point (6.0,4.0) is not in the rectangle

Process finished with exit code 0
```

Ex-4.18

```java
public class Task4 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the code : ");
        String code = scanner.next();
        String ans = "", err = null;
        switch (code.charAt(0)) {
            case 'M', 'm' -> ans = "Mathematics ";
            case 'C', 'c' -> ans = "Computer Science ";
            case 'I', 'i' -> ans = "Information Technology ";
            default -> err = "Invalid Input";
        }
        switch (code.charAt(1)) {
            case '1' -> ans += "Freshman";
            case '2' -> ans += "Sophomore";
            case '3' -> ans += "Junior";
            case '4' -> ans += "Senior";
            default -> err = "Invalid Input";
        }
        if (err == null)
            System.out.println(ans);
        else
            System.out.println(err);
    }
}
```

```
/Library/Java/JavaVirtualMachines/
Enter the code : C2
Computer Science Sophomore

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/
Enter the code : A5
Invalid Input

Process finished with exit code 0
```

Ex-4.21

```
public class Task5 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the code : ");
        String ssn = scanner.next();
        boolean isValid = true;

        if (ssn.length() == 11) {
            for (int i = 0; i < 11; i++) {
                if (i == 3 || i == 6) {
                    if (ssn.charAt(i) != '-') isValid = false;
                } else {
                    if (ssn.charAt(i) < '0' || ssn.charAt(i) > '9') isValid = false;
                }
            }
        } else isValid = false;

        if (isValid)
            System.out.println(ssn + " is a valid social security number");
        else System.out.println(ssn + " is not a valid social security number");
    }
}
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk/Cc
Enter the code : 123-23-1234
123-23-1234 is a valid social security number

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk/Conter
Enter the code : 123-123-123
123-123-123 is not a valid social security number

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk/Conter
Enter the code : 123-12-123X
123-12-123X is not a valid social security number

Process finished with exit code 0
```

Ex-6.12

```
public class Task6 {
    public static void main(String[] args) {
        printChars('1', 'z', 10);
    }

    public static void printChars(char ch1, char ch2, int numberPerLine) {
        int count = 0;
        if (ch1 > ch2) {
            char temp = ch1;
            ch1 = ch2;
            ch2 = temp;
        }

        for (int i = ch1; i <= ch2; i++) {
            System.out.print((char) i + " ");
            count++;
            if (count % numberPerLine == 0)
                System.out.println();
        }
    }
}
```

```
/Library/Java/JavaVirtualMachines/jd
1 2 3 4 5 6 7 8 9 :
; < = > ? @ A B C D
E F G H I J K L M N
O P Q R S T U V W X
Y Z [ \ ] ^ _ ` a b
c d e f g h i j k l
m n o p q r s t u v
w x y z
Process finished with exit code 0
```

Ex-6.4

```
public class Task7 {
    public static void main(String[] args) {
        reverse(123456789);
    }

    private static void reverse(int number) {
        System.out.print("The number " + number + "'s reverse is: ");
        while (number != 0) {
            System.out.print(number % 10);
            number = number / 10;
        }
    }
}
```

```
/Library/Java/JavaVirtualMachines/jdk-17.jdk/C
The number 123456789's reverse is: 987654321
Process finished with exit code 0
```

Ex-6.9

```
public class Task8 {
        public static void main(String[] args) {
            double foot = 1, meter = 20;
            System.out.println("  Feet         Meter      |      Meter           Feet
");

System.out.println("------------------------------------------------------");
            for (int i = 1; i <= 10; i++, foot++, meter += 5) {
                System.out.println(String.format("%5.1f", foot) + "         "
                        + String.format("%6.3f", footToMeter(foot)) + "      |"
                        + "     " + String.format("%5.1f", meter) + "         "
                        + String.format("%7.3f", meterToFoot(meter)));
             }
        }

        private static double footToMeter(double foot) {
            return 0.305 * foot;
        }

        private static double meterToFoot(double meter) {
            return 3.279 * meter;
        }
```

```
    }
}
```

```
  Feet          Meter       |       Meter          Feet
-------------------------------------------------------
   1.0          0.305       |       20.0          65.580
   2.0          0.610       |       25.0          81.975
   3.0          0.915       |       30.0          98.370
   4.0          1.220       |       35.0         114.765
   5.0          1.525       |       40.0         131.160
   6.0          1.830       |       45.0         147.555
   7.0          2.135       |       50.0         163.950
   8.0          2.440       |       55.0         180.345
   9.0          2.745       |       60.0         196.740
  10.0          3.050       |       65.0         213.135

Process finished with exit code 0
```