Tutorial 05

[Q1]

```java
public class Main {
    public static void main(String[] args) {
    hello();
    }
    private static void hello(){
        System.out.println("Hello world!");
    }
}
```

[Q2]

```java
import java.util.Scanner;

public class Q2 {
    public static void main(String[] args) {
        DisplayMenu displayMenu = new DisplayMenu();
        displayMenu.display();
    }

    public static class DisplayMenu {
        boolean exit = true;
        Scanner input = new Scanner(System.in);

        public void display() {
            while (exit) {
                System.out.println("**********");
                System.out.println("   MENU   ");
                System.out.println("**********");
                System.out.println("1.- Addition");
                System.out.println("2.- Subtraction");
                System.out.println("0.- Quit Please select an option: ");

                System.out.println("Select your option: ");
                int userInput = input.nextInt();

                switch (userInput) {
                    case 1:
                        Addition();
                        break;
                    case 2:
                        Subtraction();
                        break;
                    case 0:
                        exit = false;
                        break;
                    default:
                        System.out.println("Please enter a valid number!");
                }
            }
```

```
        }
    }

    private static void Addition() {
        double nb1=0, nb2=0;
        userInput();
        double sum = nb1 + nb2;
        System.out.println(nb1 + " + " + nb2 + " = " + sum);
    }

    private static void Subtraction() {
        double nb1 = 0, nb2 =0;
        userInput();
        double sub = nb1 - nb2;
        System.out.println(nb1 + " - " + nb2 + " = " + sub);
    }

    private static void userInput() {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter 1st number: ");
        double nb1 = input.nextDouble();
        System.out.println("Enter 2nd number: ");
        double nb2 = input.nextDouble();
    }
}
```

[Q3]

```
public class Q3 {
    public static void main(String[] args) {
        Number printnumber=new Number();
        Number.printNb();
    }
    public static class Number{
        public static void printNb(){
            int i=1;
            while (i<101){
                System.out.println(i);
                i++;
            }
        }
    }
}
```

[Q4]

```
import java.util.Scanner;

public class Q4 {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter a base nb: ");
        int baseNb = input.nextInt();

        System.out.println("Enter a exponent nb: ");
```

```
        int expo = input.nextInt();

        int result = exponent(baseNb, expo);
        System.out.println(result);
    }

    public static int exponent(int baseNb, int exponent) {
        if (exponent == 0) {
            return 1;
        } else if (exponent == 1) {
            return baseNb;
        } else {
            return baseNb * exponent(baseNb, exponent - 1);
        }

    }
}
```

[Q6]

```
public class Q6 {
    public static void main(String[] args) {
        int i = -3;
        int aValue = 0 -3;
        multiply(aValue,2);
    }
    private static void multiply(int sum1,int sum2){
        int i = sum1 - sum2 * sum2;
        System.out.println(sum2+" "+sum1);
    }
}
```

[Q7]

```
import java.util.Scanner;

public class Q7 {
    public static void main(String[] args) {

    int number = 5; // Change this to any number you want

    int result = multiplyByTwo(number);

        System.out.println("Twice the number " + number + " is: " + result);
}

// Method to return two times the input number
public static int multiplyByTwo(int number) {
    return number * 2;
    }
}
```

[Q8]

```java
public class Q8 {
    public static void main(String[] args) {

        int number = 5; // Change this to any number you want

        long factorial = findFactorial(number);

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

    // Method to find factorial using recursion
    public static long findFactorial(int n) {
        if (n == 0 || n == 1) {
            return 1;
        } else {
            return n * findFactorial(n - 1);
        }
    }
}
```