LAB # 7

Generics in Java

Lab Task:-

➤ Write a program that takes integer array, double array and float array. Make a generic function that performs subtraction on array element:

Example: input➔ intArray = [5, 7, 3, 9, 19]

                Output➔ intArray = [2, -4, 6, 10]

Code:-

```java
GenericSubtraction.java  ×
public class GenericSubtraction {
    public static <T extends Number> void subtractArray(T[] arr) {   3 usages
        System.out.print("[");
        for (int i = 0; i < arr.length - 1; i++) {
            double result = arr[i + 1].doubleValue() - arr[i].doubleValue();
            System.out.print(result);

            if (i < arr.length - 2) {
                System.out.print(", ");
            }
        }
        System.out.println("]");
    }
    public static void main(String[] args) {

        System.out.println("Name: Rayyan Wamiq");
        System.out.println("Roll No.: 2023F-BSE-095\n");

        Integer[] intArray = {5, 7, 3, 9, 19};
        System.out.print("intArray Output = ");
        subtractArray(intArray);

        Double[] doubleArray = {5.5, 2.2, 9.8, 10.1};
        System.out.print("doubleArray Output = ");
        subtractArray(doubleArray);

        Float[] floatArray = {3.4f, 1.2f, 8.6f, 4.5f};
        System.out.print("floatArray Output = ");
        subtractArray(floatArray);
    }
}
```

Output:-

```
C:\Users\LAPCOM\.jdks\openjdk-25\bin\java.exe "-javaagent:C:\Program Files\JetB
Name: Rayyan Wamiq
Roll No.: 2023F-BSE-095

intArray Output = [2.0, -4.0, 6.0, 10.0]
doubleArray Output = [-3.3, 7.6000000000000005, 0.29999999999999893]
floatArray Output = [-2.200000047683716, 7.400000333786011, -4.100000381469727]

Process finished with exit code 0
```