Lab 2: Loops, Arrays and Recursion

Exercise 1: Write a program that finds the greatest integer from the given integer list

Description: Your program will accept a list of integer arguments such as

java FindGreatest 19 5 -2 55 24

Given the above values, your program should print "55"

1. Make sure you have the Java installed on your system by issuing the following commands:
   java -version
   javac -version
2. Create a directory called "java" in your home directory.
3. Create a directory called "loops" in "java" directory.
4. Open a text editor and create a class called FindGreatest in the "loops" directory.
5. Implement the main method of the FindGreatest.
6. Compile and run FindGreatest class.

Exercise 2 : Write a recursive function for the problem defined in Exercise 1

1. Open a text editor and create a class called FindGreatestRec in the "loops" directory.
2. Create and implement the following function
   public static void findGreatest(int startIndex, String values[]);
3. Compile and run FindGreatestRec class

Exercise 3 : Write a matrix addition function

1. Open a text editor and create a class called MatrixCalculator in the "loops" directory.
2. Declare and initialize the following 2 dimensional matrix in the main method of MatrixCalculator class

```
int[][] martrixA = {{6, 8, 2}, {9, 5, 11}, {7, 2, 5}};
int[][] martrixB = {{4, 6, 3}, {5, 8, 1}, {6, 6, 7}};
```

3. Write a function which accepts two parameters having type int[][]. Your function will perform the matrix addition operation for the given parameters and return the resulting matrix. Call the function from the main method with the parameters martrixA and martrixB
4. Print the result returned by the function to the console
5. Compile and run MatrixCalculator class