Lab Exercise 3 — Great Calculator

Operations on Strings in addition to Classes & Objects

Objectives

To practice on Classes and Objects

Prelab Activities

You will develop a program that makes addition, subtraction, and multiplication operations on **LARGE numbers**. The program must read an input file to take the large numbers that will be used in operations. Numbers will be **positive** but results may be **negative**.

The letters 'A', 'M', and 'S' will be used in the input file, and they determine the operations. Input file text must include number count, digit count of numbers, operation letters, and id of large numbers, which may have 50 digits.

For example;
3 => number count
2 => digit count of next number
13 => first large number
8 => digit count of next number
12345678 => second large number
5 => digit count of next number
54321 => third large number
A 1 3 => operation, id of first large number, id of second large number
M 2 1 => operation, id of first large number, id of second large number
S 1 2 => operation, id of first large number, id of second large number

A will be used for addition, M will be used for multiplication, S will be used for subtraction.

1. The Input File name is "**input.txt**"
2. Input File content sample; (input.txt sample)

```
2
3
100
4
1111
S 1 2
A 2 1
```

3. Write output to console, and output must match **exactly the same** as below for the above input sample.

```
The result of 100 - 1111 is -1011
```

The result of 1111 + 100 is 1211

*Do not forget to implement to calculate multiplication. Try your own input for multiplication

4. Remember to send your codes day by day to Bitbucket to track changes.
5. Create a zip file with your group_no as <group_no>.zip and upload it to UZEM
    a. Always upload your codes or solutions to UZEM in expected format

Problem-Solving Tips

1. Share problems, commits, and knowledge with your pair.
2. Read the description carefully and then write your own code.
3. Create classes for each operation, Multiplication, Subtraction, and Addition.
4. Also, DO NOT forget to create a class with the name FileReader to read the input.txt file.
5. See Diagram 1 to implement your code. You may need further attributes and operations for classes

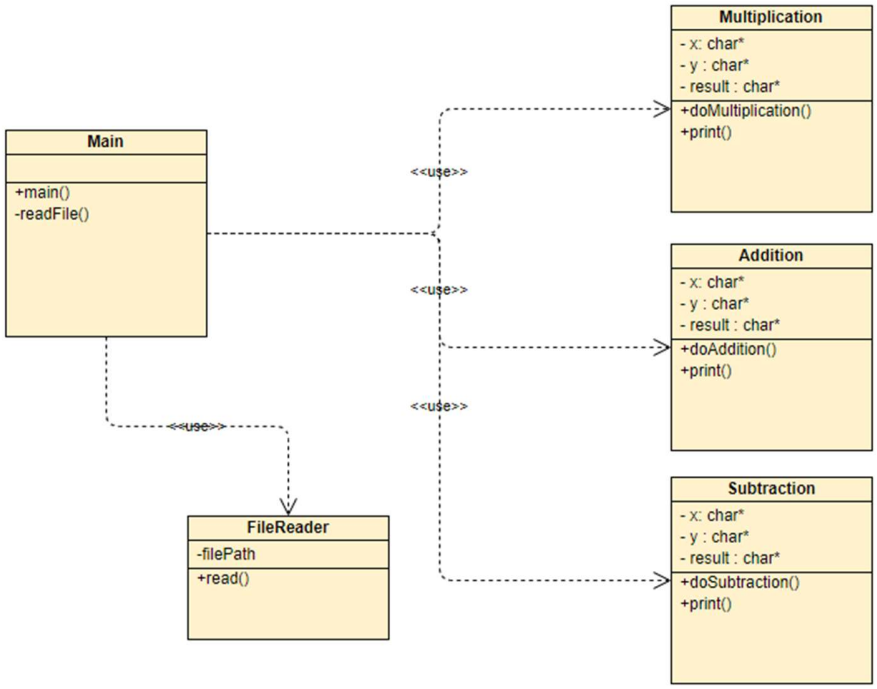

Diagram 1 Simple Class Diagram