Practice Exercise #09: Reading Techniques

http://www.comp.nus.edu.sg/~cs1020/4_misc/practice.html

Reference: Week 2 OOP Part 1

Objectives:

The objective of this exercise is to ensure that you know how to read inputs using any of the three methods which you will encounter in your take-home labs and sit-in labs.

Task statement:

There are various ways of parsing inputs. In this exercise, you will implement 3 common techniques:

1. Read an integer n, then read n lines following it, each line containing some data.
2. Read until some special value or character is encountered (e.g. read until -1).
3. Read until the end of the file.

Write a program **Reading.java** that reads some input data in one of the following 3 formats.

Format 1: The first line of input contains the string "LIMIT". This means that the second line contains an integer n, which is the number of operations. The next n lines contain a string on each line, describing the operation to be performed.

Format 2: The first line of input contains the string "SENTINEL". This means that the subsequent lines contain a string on each line, describing the operation to be performed. The inputs end with a line containing the string "-1".

Format 3: The first line of input contains the string "EOF". This means that the subsequent lines contain a string on each line, describing the operation to be performed. You are to read until the end of file. (For interactive input on UNIX, the user enters **control-d** to terminate input.)

The string that describes the operation to be performed contains an operation (ADD, SUB, or MUL) followed by two integers x and y:

- ADD x y: Compute $x + y$
- SUB x y: Compute $x - y$
- MUL x y: Compute $x * y$

For each of the operations read, your program is to print out its result.

You should have a method

operate(String op, int operand1, int operand2)

in your program to perform the required computations.

Sample runs:

```
LIMIT
2
ADD 14 32
MUL -6 20
46
-120


SENTINEL
MUL 15 4
ADD -17 30
-1
60
13


EOF
SUB 1234 5678
SUB -2 -300
SUB 99999 0
-4444
298
99999
```