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Report for Pgm2

Problem Statement

The purpose of this assignment is to read a file from a filename inputted by the user and then output the result of multiplication of the two integers provided inside the file. The integers can be positive or negative, and they will be interpreted as base 10 numbers. Each integer must be on its own line in the text file to meet the specifications of the program.

Approach to Solution

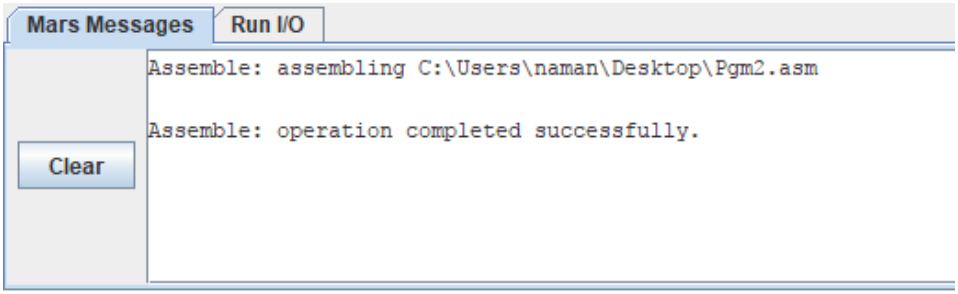
The printing of value after the multiplication of the integers in the file should be done utilizing the MIPS assembly language with the Mars IDE. Knowledge of the working with expression evaluation, system calls, reading from files, reading the length of strings, and parsing integers will be required. A computer running the Java Virtual Machine (JVM) will be needed along with access to the computer's registers for storage. Additionally, tools inside the IDE such as the assembling and running of the current program are essential.

```
li $v0, 8               # System call code for read_string
la $a0, buffer          # Will be stored in the space allocated by buffer
```

Taking in user input as a string in the MIPS assembly language.

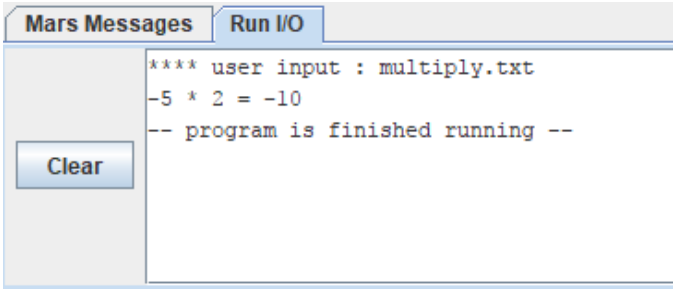
Solution Description

When the Mars IDE has been launched and Pgm2.asm has been opened, it is important to build (or "assemble") the program before running it. To do so, click the "Run" button up at the top of the tool bar and then click the "Assemble" button from its drop-down menu. After clicking it, the program should successfully assemble, and there should be a success message from the "Mars Messages" tab at the bottom of the screen.



The message given after the program has been successfully assembled.

Once the program has successfully compiled, it is now time to run it. At the top of the screen, click the green play button in the tools with the description “Run the current program” when a mouse cursor is hovered over it. The user will be prompted to enter the name of a file. If the filename is valid, the “Run I/O” tab should display the integers on every line in the file being multiplied together along with the value that it equates to.



The result of the multiplication of the integers in the file specified by the user is displayed in the output.