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CS 2340

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Project Manual

Introduction

Welcome to our Multiplication Game! This user manual will provide the user with instructions on how to run and use the program/game. This game involves the user and a computer, competing to mark 4 numbers in a row by entering integers within a specified range to place values on the multiplication board. The user must use strategies to make sure the product of their two integers are in a row, column, or diagonal across the board.

Running the program:

First, open the MIPS (MARS) assembly program on your computer. Open settings, and check the box that says “Assemble all files in directory”. Load all 4 of the .asm files into the coding environment. Make sure you have the “project.asm” file visible and press the ‘Assemble’ button, then press the ‘Run’ button to execute the program. After that, follow the instructions on the console making sure the numbers entered are in the range asked. If the number entered by the user is outside the range, then an error message will occur.

How to use the program:

Initially, the program will display the board to the user and two pointers. The user can choose which of the two pointers they would like to change and an integer for the pointer to hold within the specified range. If the integer is outside of the range, an error message will occur. If it is available, the product of these pointers will be used to fill in a place on the board with two zeros. If it isn’t, the user will be asked for new input. Next, the computer makes its own move, filling in a spot on the board with 99, and adjusting the pointers. After that, you will repeat these steps until someone has won by getting 4 markers in a row, column, or diagonal for the winning condition to be met. After the user wins or loses, they will be asked if they would like to play again. If they do, the board will reset and the game will restart. Otherwise, the program will terminate.

Conclusion

Congratulations! You’ve made it to the end and are now ready to play the Multiplication Game. Feel free to implement as many strategies against the computer and, hopefully, win as many times as you would like. Thank you for playing!