

User Guide

Group-7
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1. GUI

All of these windows can change their languages according to your system language. So do not worry about language problems.

1.1 Welcome GUI

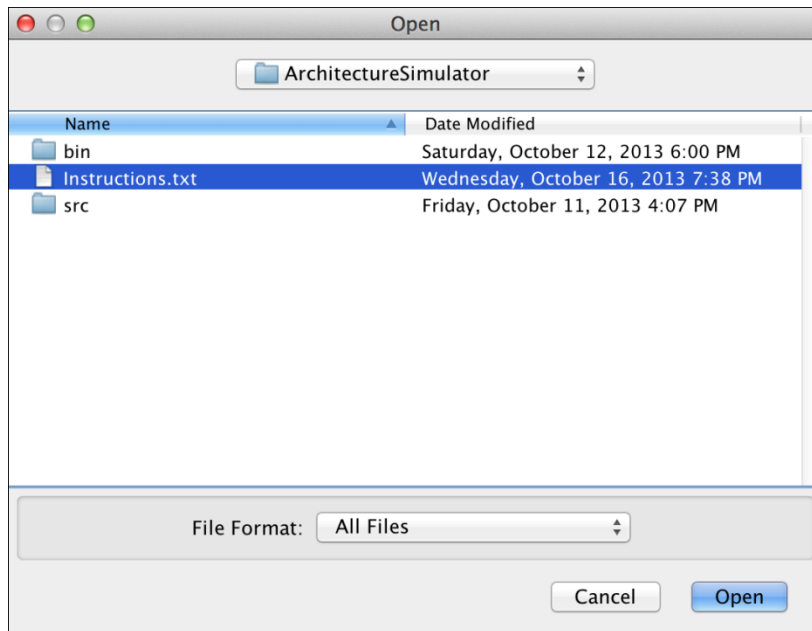


When you run this program, you first see this welcome window.

Button “Start and load memory” is for you to start this simulator. When you click this button, there will be a guide to help you to initialize the data.

Button “Exit” is to exit from this program.

1.2 Load Memory GUI

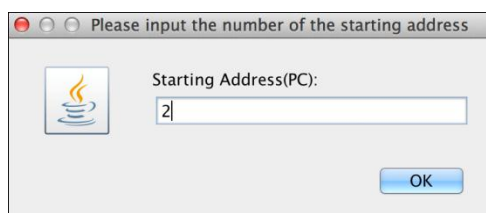


This window is for you to choose a file to load the memory into the simulator. The language of this window can be changed according to your system language.

Just choose the file you want, and click Button “Open”.

If you do not want to load the memory, please click Button “Cancel”.

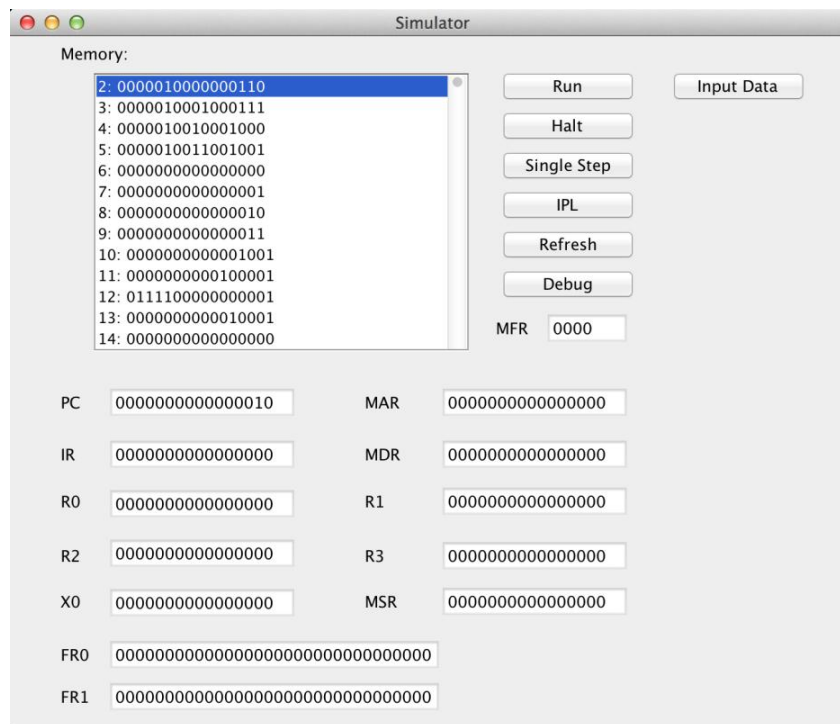
1.3 Set PC GUI



This window is for you to input the starting address (PC) into the simulator. The language of this window can be changed according to your system language.

Please input the number (e.g. 1, 2, 3), and then click Button “OK”.

1.4 Simulator GUI



When you finish initializing, you will see this window.

Button “Run” is to run the program, and it will stop at the “HLT” instruction.

Button “Halt” is to stop the program.

Button “Single Step” is to finish a instruction according to PC.

Button “IPL” is to initialize program load.

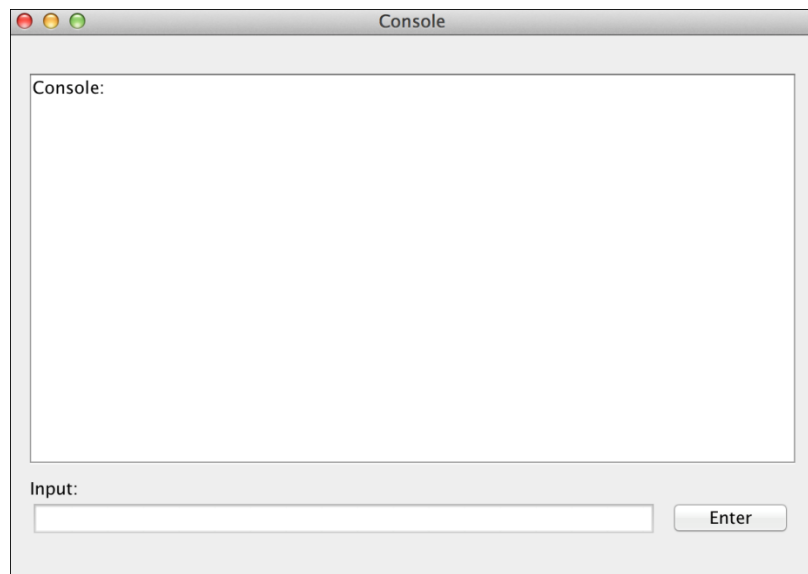
Button “Refresh” is to refresh the window according to the result that this program gets.

Button “Debug” is to debug the program, and it will stop at the “HLT” instruction.

Button “Input Data” is to input data into the simulator. You are able to enter data into any

of R0 – R3, besides you can also enter data into memory.

1.5 Console GUI



When you finish initializing, you will see this window.

You can see the console layout in the window.

You can input characters via the field on the bottom. Just input the character you want and click Button “Enter” or push the key “Enter” on your keyboard.

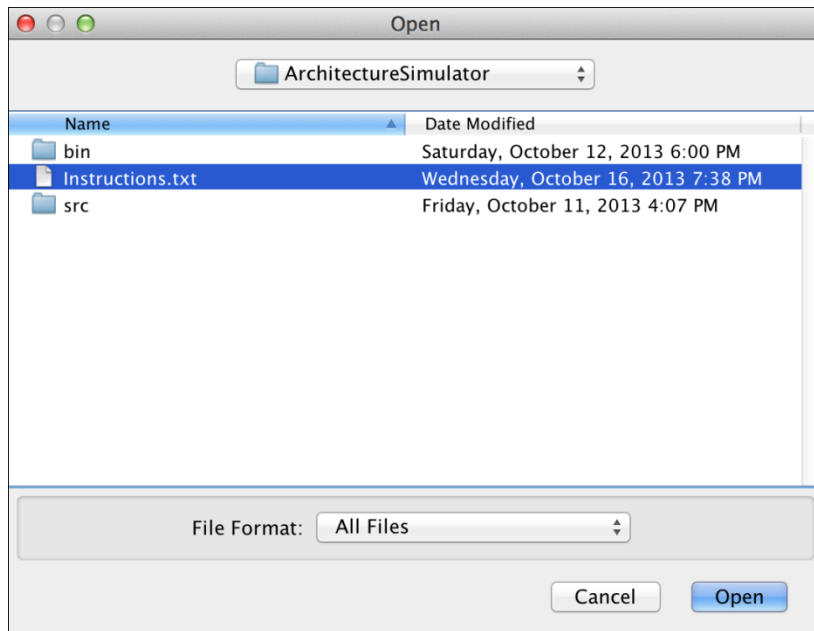
2. Initialize Program Load

2.1 Welcome



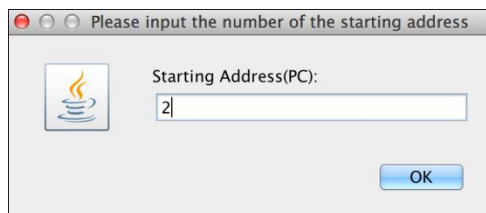
Click the Button “Start and loading memory” to start the initialization.

2.2 Set Memory



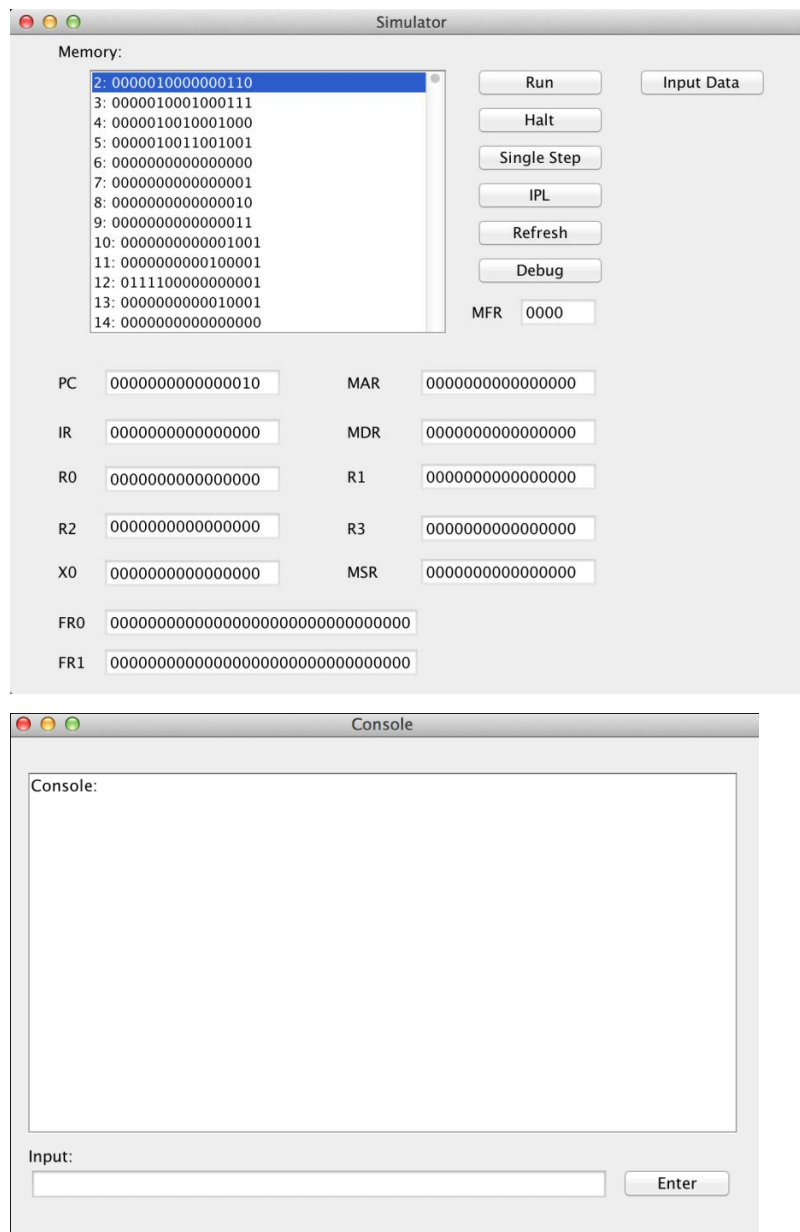
Choose a memory file to load.

2.3 Set PC



Input the PC number.

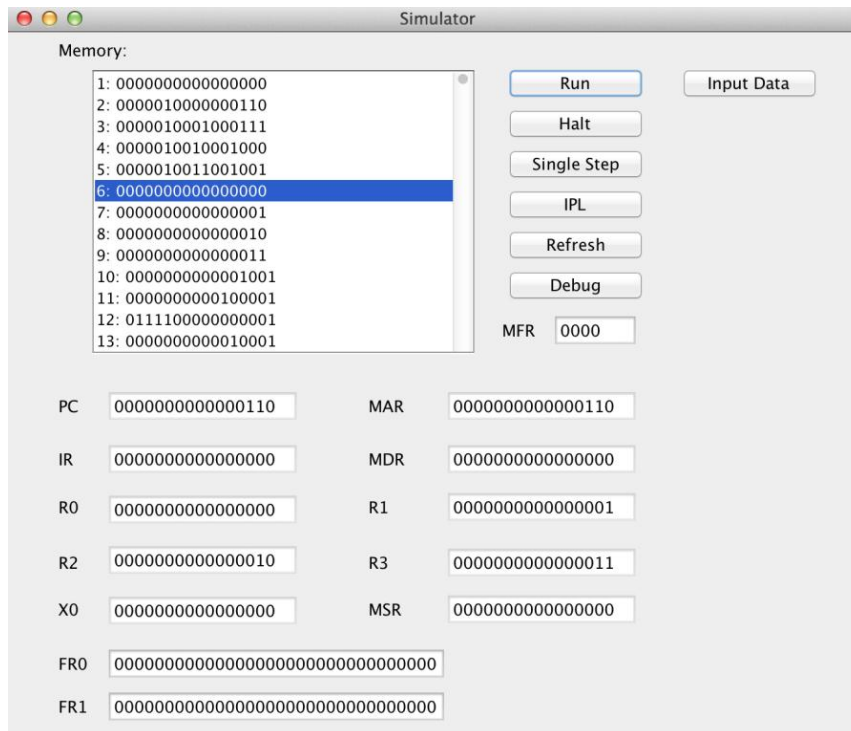
2.4 Finish Initialization



When the initialization finish, you can see both of these windows.

3. Input Data

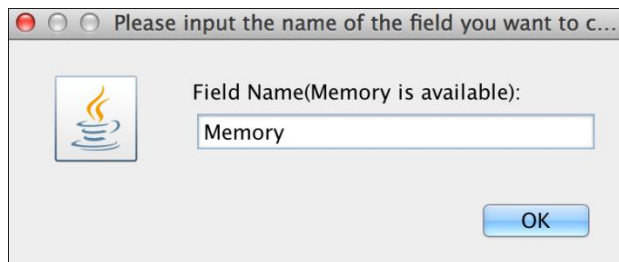
3.1 Input Memory



The Simulator window displays the following components:

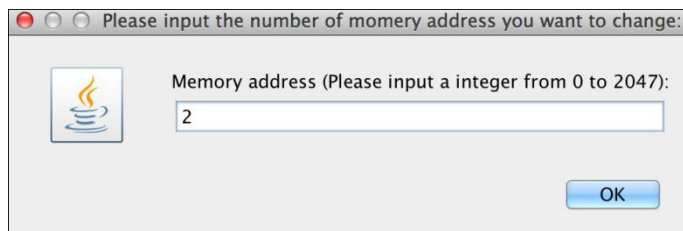
- Memory:** A list of 13 memory addresses (1-13) with their corresponding binary values. Address 6 is highlighted in blue.
- Control Buttons:** Run, Halt, Single Step, IPL, Refresh, Debug, and an Input Data button.
- MFR:** A text box containing the value 0000.
- Registers:** PC, MAR, IR, MDR, R0, R1, R2, R3, X0, MSR, FR0, and FR1, each with a text box showing its current value.

Click Button “Input data”, and you will see a window like following.



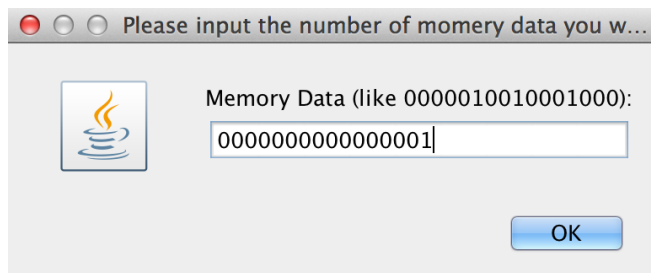
The dialog box titled "Please input the name of the field you want to change:" contains a text box labeled "Field Name(Memory is available):" with the word "Memory" entered. An "OK" button is at the bottom right.

Input “Memory”, and click Button “OK”.



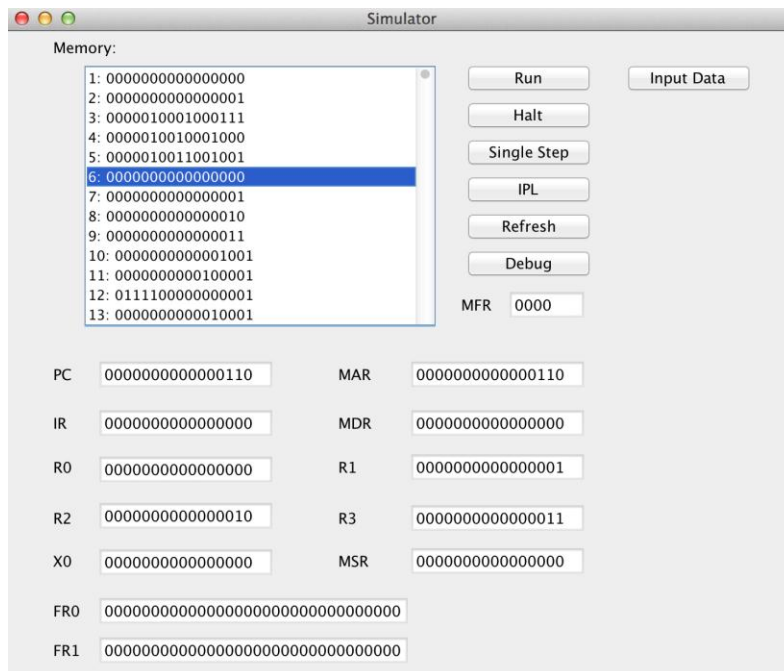
The dialog box titled "Please input the number of memory address you want to change:" contains a text box labeled "Memory address (Please input a integer from 0 to 2047):" with the number "2" entered. An "OK" button is at the bottom right.

Input the address number you want to enter data into, and click Button “OK”.



The dialog box titled "Please input the number of memory data you want to change:" contains a text box labeled "Memory Data (like 0000010010001000):" with the binary value "0000000000000001" entered. An "OK" button is at the bottom right.

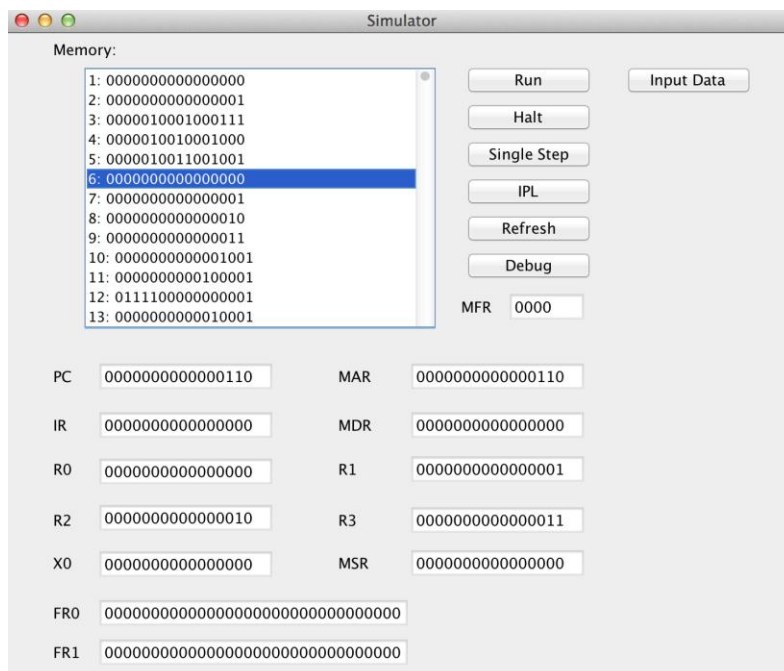
Input the data you want to enter, and click Button “OK”.



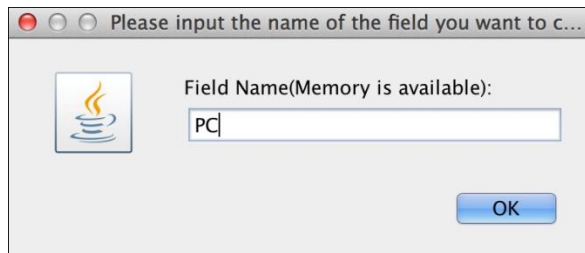
Congratulation! The data in the memory has been changed successfully.

3.2 Input Data

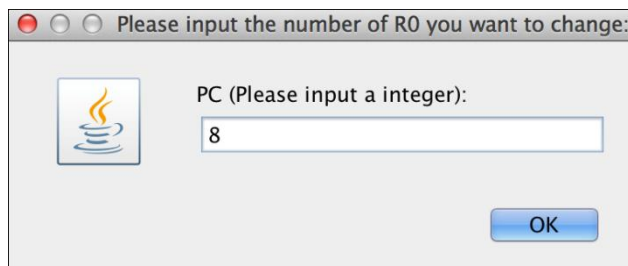
We will take PC as an example.



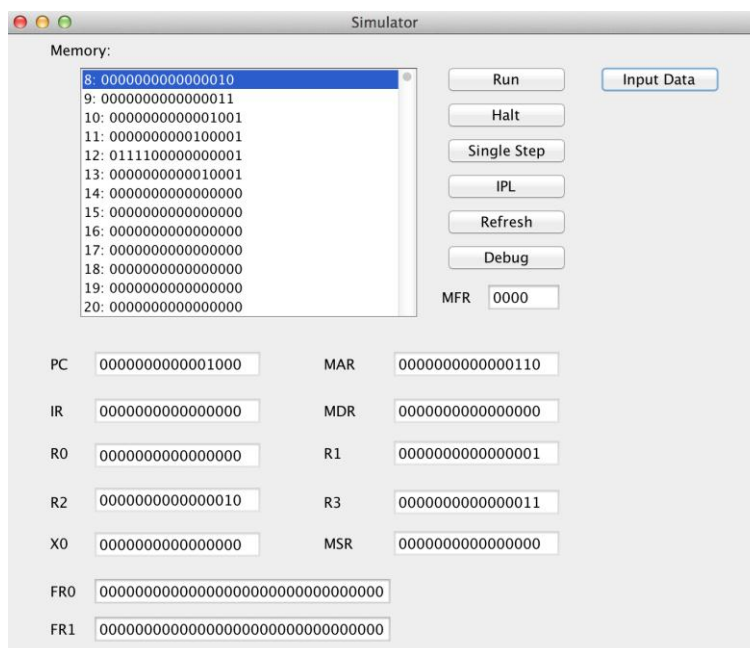
Click Button “Input data”, and you will see a window like following.



Input the field name you want to enter, and click Button “OK”.



Input the data you want to enter, and click Button “OK”.

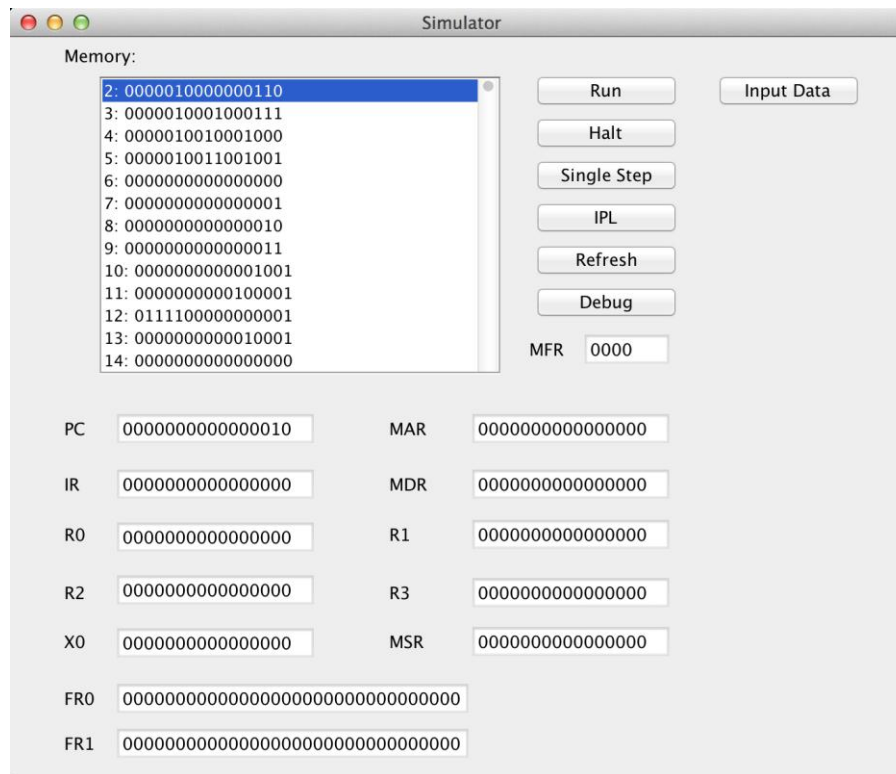


Congratulation! The data has been changed successfully.

4. Run

4.1 Run the program

When you finish the initialization and all data in this simulator are correct, you can see the window as following.



Then click Button “Run”, wait for a few seconds, and you can see the result of the program you run as following.

