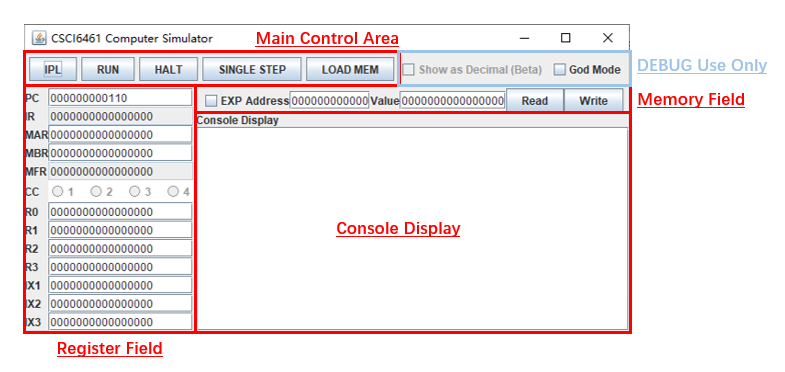
# Simulator User Manual for P1

CSCI 6461 Group 1 (2019 Fall)

1. **The User Interface**



This is our simulator GUI interface.

**Main Control Area**

* **IPL Button** will reset the entire simulator. All data inside the memory and registers will be set to initial value.
* **Run Button** will continue to execute instruction driven by PC unless it meets a HALT instruction or manually click the HALT button on the GUI.
* **HALT Button** will send a HALT.
* **SINGLE STEP Button** will execute one instruction from the PC.
* **LOAD MEM Button** will read a CSV file and load the value to the memory.

The CSV file should have 2 fields.

<Memory Location(Binary String)>,<Data(Binary String)>.

Here is an example:

000000000001,0000011100011111

000000000010,0000011100011111

000000000011,0000011100011111

000000000100,0000011100011111

The example above load data "0000011100011111" to memory location 01,10,11,100.

**Register Field**

* Most of the register value is editable, while some of the registers like IR, MFR, CC is not changeable.
* To change the value of the register, type the value you want to set and press <Enter>.

**Memory Field**

* EXP Click-box is Memory Expand button. When this box is checked, the max memory is set to 4096 words, while the default is 2048 words.
* To read the memory value, just type the address you want to read, click the Read button, and the value will appear on the value field.
* To write the memory, just type the address and the value and click Write button. If your input is legit, the value will be writing to the memory location.

**Console Display**

* This is the place to show the simulator logs.

1. **Operate the simulator**

**To run a program (Using a CSV file)**

Our PC initially set to 6 (memory location 0-5 is protected). So for the first instruction should be placed at location memory location 6.

Please follow the following steps to continue testing.

1. Press the IPL Button to reset the simulator.
2. Press the LOAD MEM Button and choose the CSV Memory log file.
3. Press RUN to run the program, or press SINGLE STEP button to do single step running.

**To run a program (Set memory manually)**

Our PC initially set to 6 (memory location 0-5 is protected).

Please follow the following steps to continue testing.

1. Press the IPL Button to reset the simulator.
2. Set the memory will the value you desire using the memory write button.
3. (Optional) Set the PC value to your memory location of your first instruction.
4. Press RUN to run the program, or press SINGLE STEP button to do single step running.