CSCI-6262

Class Project

User's Guide for Project Phase 1
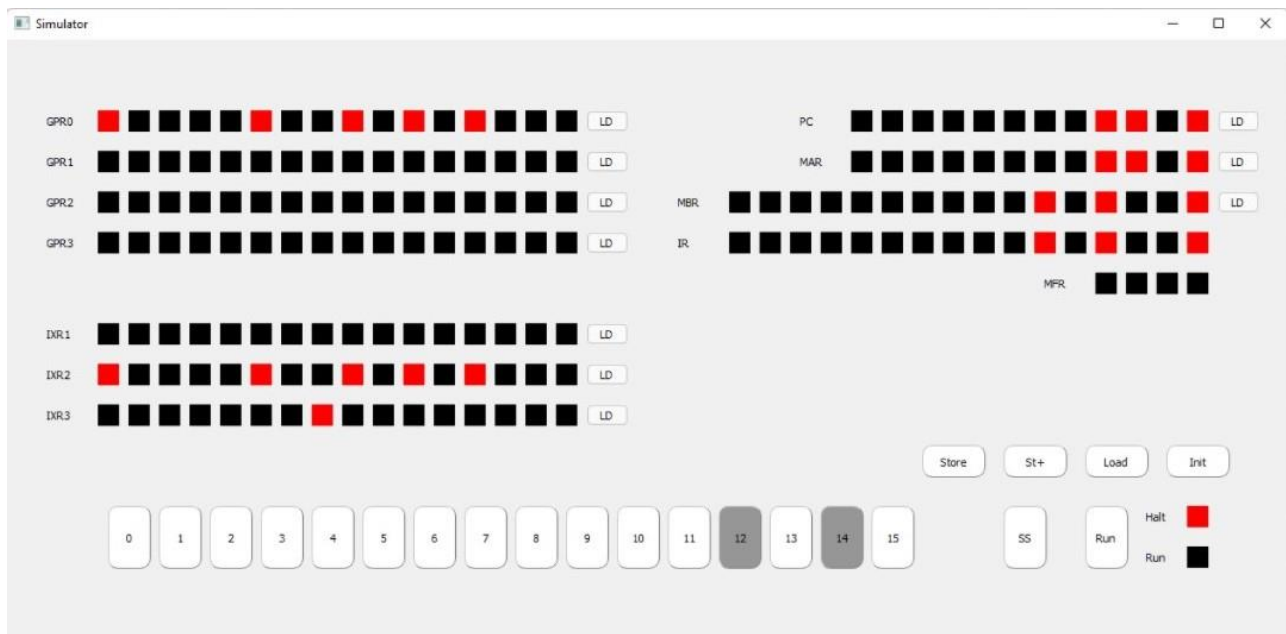
Roger Zhang
Guanyu Zuo
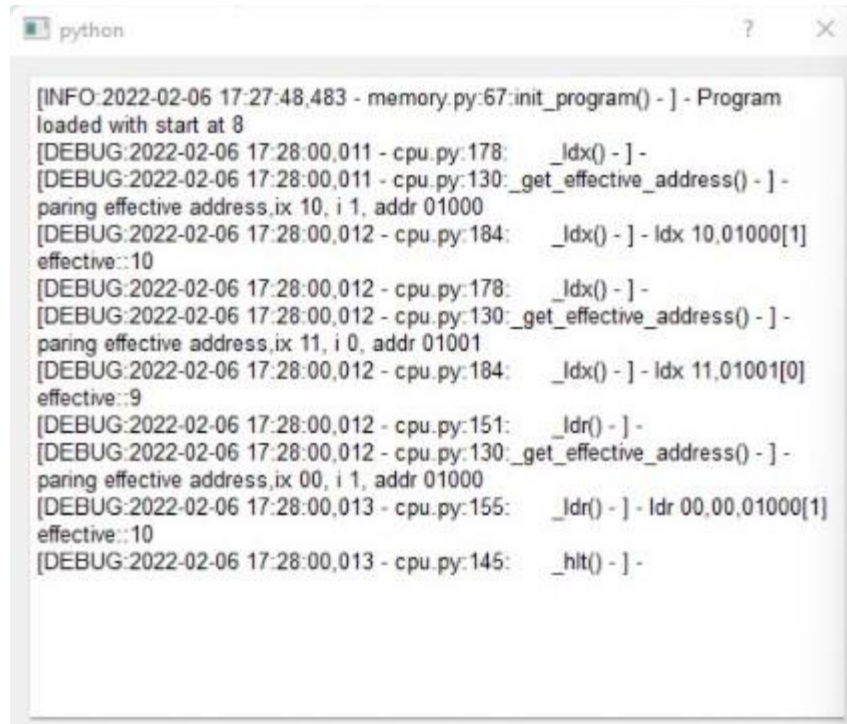Yi Zheng
Alan Yang

1. User's Guide Overview

This User's Guide for the for Project Phase 1 consists of four main parts:

- User's Guide Overview
- Main GUI
- Buttons
- Indicators
- Test Run

2. Main GUI

The main GUI consists of two parts, the simulator interface and the debug console.

This is what the main GUI looks like. We use Pyqt5 library in Python as the course recommended to construct the whole user's interface.

As we can see, the user interface of our emulator is functionally consistent with the requirements. Also, there is a debug console for the output. For those buttons and indicators, this user's guide will cover below.

3. Buttons

Our emulator has few major control buttons and ,few LD buttons for each registers and few number buttons to store numbers as shown below:

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
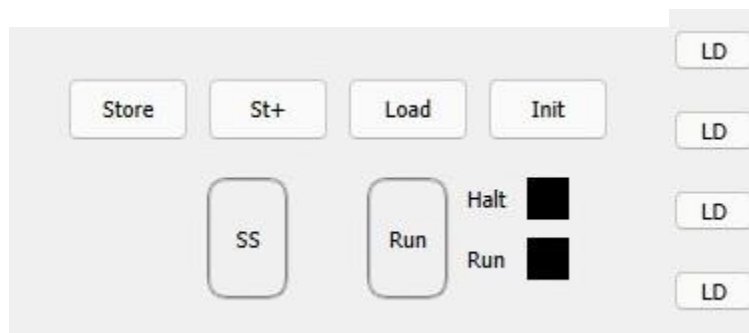
These buttons above are used to control the emulator.

For the detail functions of major control buttons:

[Store]:

This button stores the content of the MBR register to memory at the address specified by the content of the MAR register.

[St+]:

This button does what the "Store" button does and increments the MAR register by one.

[Load]:

This button loads the memory content at the address specified by the content of the MAR register to the MBR register.

[Init]:

This button clears the contents of all registers.

[SS]:

This button runs a single stage (fetch / decode / execute).

4. **Indicator**

Halt ■

Run ■

[Halt]:

When this indicator is checked, the emulator is in halt.

[Run]:

When this indicator is checked, the emulator is in running.

Indicators like this show the memory address of each certain register.

5. **Test Run**
   - In the delivery folder, you can double click on **run_gui.bat** to start the GUI.
   - After GUI starts, either choose to use switch and LD button to load custom data or use **init** button to load the IPL.txt in the same directory. You can simply change the IPL.txt to load your own program.
   - After hit the init button, enter the start address using the LD button on the left of PC indicator.
   - Now the simulator will look like below and ready to run.
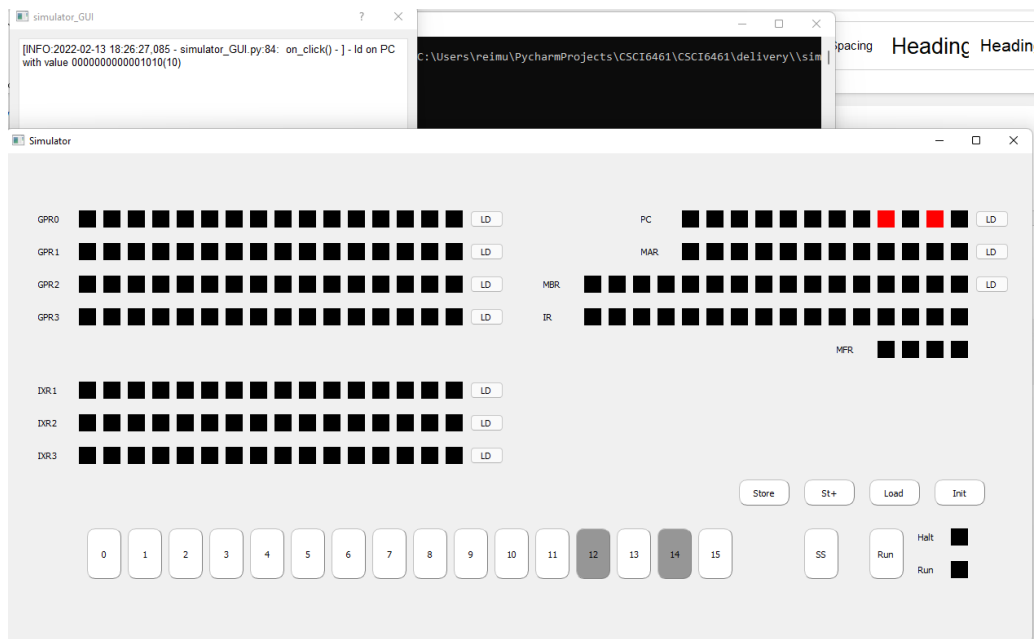
   - Hit the **run** button to run the whole program or **SS** button for single step, the simulator will look like below after execution of the sample IPL.txt
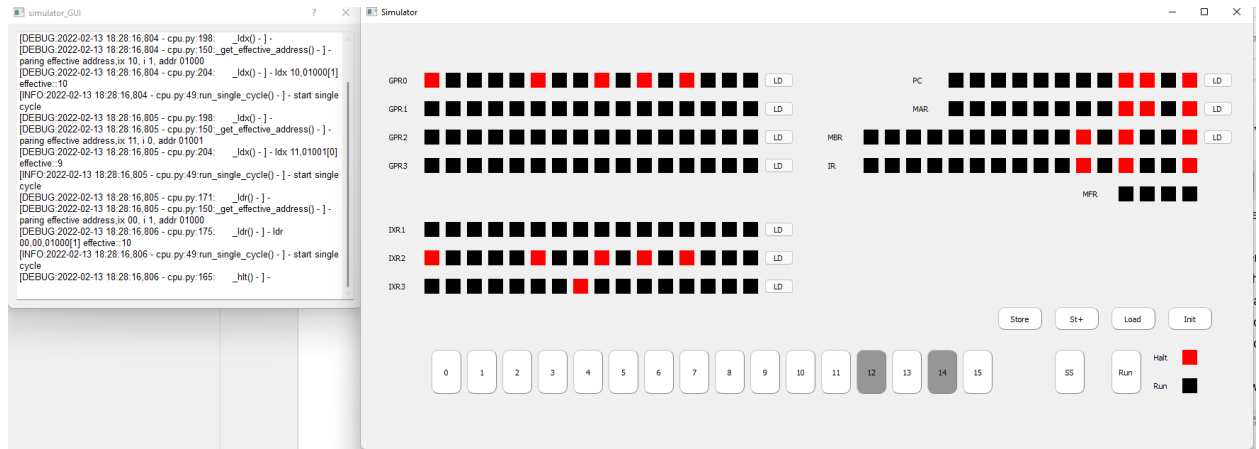
FAQ:

If the GUI failed to start using the run_gui.bat, you can choose to run the GUI using **simulator_GUI/simulator_GUI.exe**

If you are running the GUI from here, please replace the **simulator_GUI/IPL.txt** for loading custom programs.