CISC Simulator User Guide

Rev 1.0

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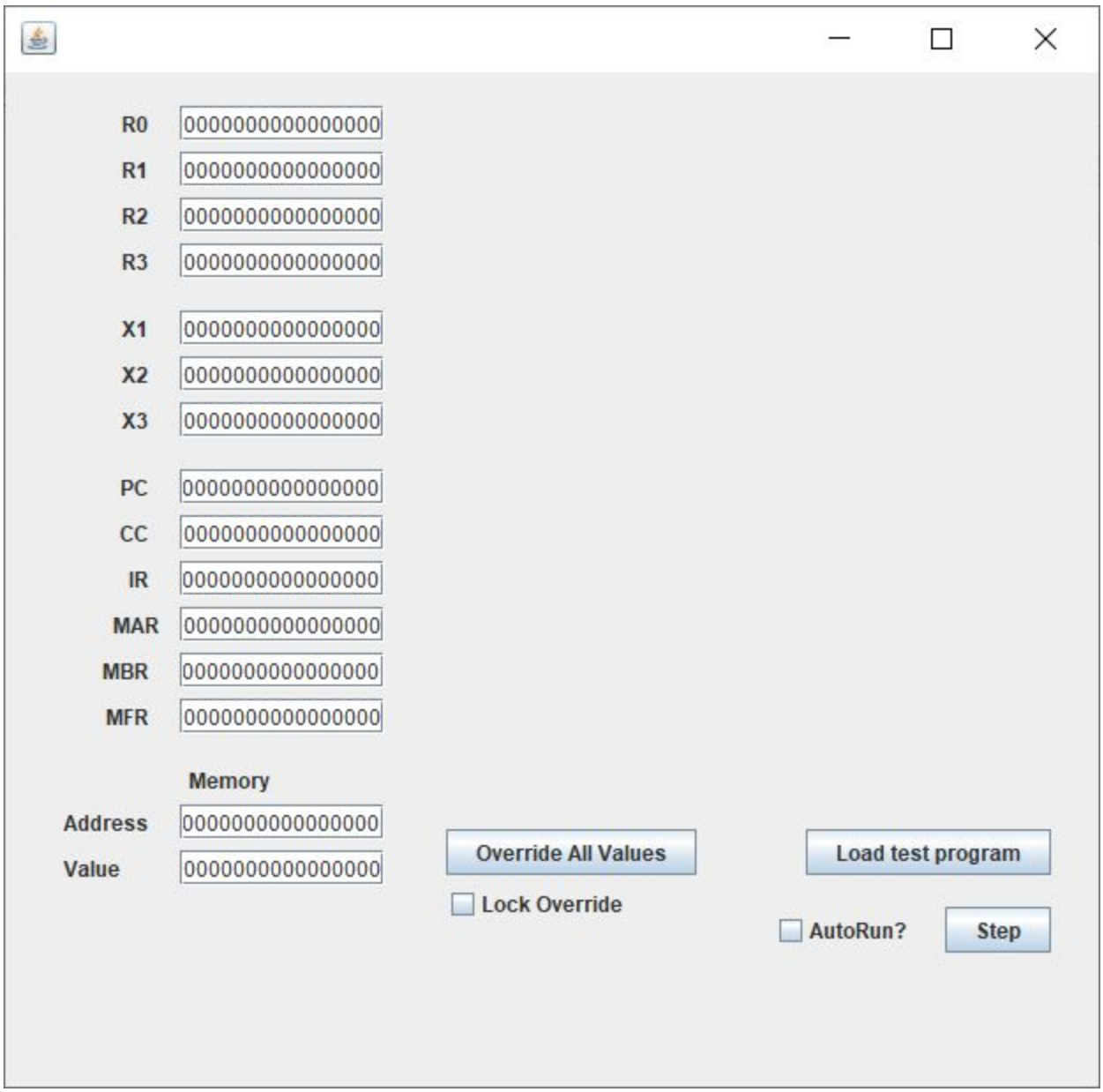
Table Of Contents

Intro

This document provides a basic guide for a user of the Simulator. As additional features are added and improved in the simulator, this document will be updated as well.

UI Layout


R0
0000000000000000
R1
0000000000000000
R2
0000000000000000
R3
0000000000000000
X1
0000000000000000
X2
0000000000000000
X3
0000000000000000
PC
0000000000000000
CC
0000000000000000
IR
0000000000000000
MAR
0000000000000000
MBR
0000000000000000
MFR
0000000000000000
Memory
Address
0000000000000000
Value
0000000000000000
Override All Values
Load test program
Lock Override
AutoRun?
Step

Overriding values

All of the displayed register and memory values may be freely edited by the user if the Lock override button is unchecked. Pressing the “Override All Values” buttons will force whatever values are currently in each of the fields into the appropriate register or memory address. Values entered into fields should be 16bit binary numbers.

*IMPORTANT NOTE: Currently, these fields are unformatted, and will accept any string as input. In the future, these will be restricted to only accept binary or decimal values, but this has not been implemented yet.

Memory

All 2048 memory addresses may be accessed by using the memory fields. Entering a 16-bit binary address into the “Address” field and pressing enter will populate the “Value” field with the current 16-bit data stored at that address. Manually entering a 16-binary number into the “Value” field and pressing the “Override” button will force that number into the current address indicated by the “Address” field.

Registers

Each of the available registers for the simulator are displayed along the left side of the panel. Each one has a label indicating which register it is, and a text field indicating its current value. Entering a 16-bit binary number into any of these fields and pressing the “Override” button will force that number into the register.

Advancing the simulation

The “Step” button allows the user to run through the simulation one cycle at a time. If there are non-zero values in the PC or Instruction registers, clicking the “Step” button will cause the simulator to execute current instructions, advance the PC register, and fetch the next instruction. Checking the “Auto-run” box will cause the simulation to run continuously until there are no more instructions to execute. Currently, Auto-run is set to advance at a rate of 1 cycle per second (this will be user-configurable in the future).

Loading the test Program

Pressing the “Load Test Program” will load a hard-coded program into the simulator’s memory. The “Step” and “Auto-run” buttons may then be used to run this test program.