CS 3432 Fall 2021
Shirley Moore, Instructor
Steven Ibarra, Lab Instructor
Preparation for Labs 3 and 4
10 points

Introduction to Logisim

Logisim is an educational tool for designing and building digital logical circuits. See
http://cburch.com/logisim for information and history about Logisim. However, we will be
using a different version of Logisim from UC Berkeley. Instructions for downloading the UC
Berkeley version are below. We will be using Logisim to design and simulate a RISC-V RV32I
processor. When you are finished with labs 3 and 4, you will be able to load a RISC-V machine
language program into your processor's memory and simulate its execution on your processor.

To get the files for this assignment, clone the repository at https://github.com/61c-teach/fa21-
lab-starter . To run Logisim, you should use the logisim-evolution.jar file in the tools
subdirectory. Your computer will need the Java Runtime Environment (JRE) to run this .jar file.
Please download the JRE if you do not already have it.

We will be using some of the files in the lab05 subdirectory for this assignment. So once you
have cloned the repository as instructed above, type the following to start Logisim:
    cd lab05
    java -jar ../tools/Logisim-evolution.jar
If you are in a different folder, use the appropriate path to the jar file.

For this assignment, you should do Exercises 1, 2, and 3 from https://cs61c.org/fa21/labs/lab05
There is nothing to turn in for Exercise 1. You should do Exercises 2 and 3 in their entirety,
including the final Testing step. You should turn in a screen shot showing the results of running
the tests which should look like the following after you have successfully completed Exercises 2
and 3:

```
smoore@csadmins–MacBook–Pro lab05 % python3 test.py
Testing files...
PASSED test: Exercise 2: Sub–Circuits
PASSED test: Exercise 3: Add Machine
FAILED test: Exercise 4: FSM (Did not match expected output)
FAILED test: Exercise 5: Splitter (Did not match expected output)
FAILED test: Exercise 6: Rotate (Did not match expected output)
FAILED test: Exercise 7: Buggy Traffic Lights (Did not match expected
output)
Passed 2/6 tests
```

Don't worry that the tests for Exercises 4, 5, 6, and 7 fail since we haven't done those. Be sure
to save your ex2.circ and ex3.circ files since we may randomly ask you to demo them in lab.