CS 2110 Timed Lab #2
Spring 2012

Due Date and Time

Day: Wednesday, February 15.

Time: Before the end of lab (4:25pm/5:55pm/7:25pm)

Policy

Submission

TURN IN THIS ASSIGNMENT ELECTRONICALLY USING T-SQUARE. SUBMISSIONS WHICH ARE LATE WILL NOT BE ACCEPTED. EMAIL SUBMISSIONS WILL NOT BE ACCEPTED UNDER ANY CIRCUMSTANCES!

Questions

If you are unsure of what questions mean, the TA's will clarify them to the best of their ability. We will not be able to answer any questions about how to reach a solution to the lab questions. For example, we can't answer the question "How do I build a state machine?" (That's what we're asking you), but we can answer questions like "Can I use basic gates?" or "Can I use a register?"

What's Allowed

- The assignment files (timedlab2.circ, TL02Lib.jar)
- Your Homework submission HW4.circ and your Lab7 files
- Logisim of course!
- Your mind
- Blank paper for scratch work

What's Not Allowed

- The Internet (except the T-Square Assignment page to submit)
- Any resource on T-Square that is not given in the assignment.

- Notes on paper or saved on your computer.
- Textbook
- Email
- IM
- Dropbox
- Contact in any form with any other person besides TAs
- If you have any questions on what you may not use then assume you can't use it and ask a TA.

Other Restrictions

1. You may not leave the classroom until we have verified that you have submitted the lab. If you leave the classroom without submitting you will receive a zero.
2. (If in the 3PM/4:30PM lab) You may not discuss the timed lab with the other section Remember this class is curved and helping someone in the other section means they get a higher grade and thus your grade will be lowered.
3. **YOU MUST SUBMIT BY THE END OF YOUR LAB PERIOD**. Bear in mind that the clock on your computer may be a few minutes slow. You are supposed to have a full class period to work, and we are letting you use the 10 minutes between classes to make sure you have submitted your work. **WE WILL NOT ACCEPT LATE SUBMISSIONS**, be they 1 second or 1 hour late.
4. The timed lab has been configured to accept one submission. If you accidentally submit or submit the wrong version flag one of the TAs and we will reopen submission for you.

Violations

Failure to follow these rules will be in violation of the Georgia Tech Honor Code. **AND YOU WILL RECIEVE A ZERO** and you will be reported to Bill and the Office of Student Integrity.

We take cheating and using of unauthorized resources **VERY SERIOUSLY** and you will be in serious trouble if you are caught.

Remember

1. There is a lot of partial credit given and most of it is following the directions.
2. We allow you to use your homework assignment.
3. Please don’t get stressed out during a timed lab. You have plenty of time however use your time effectively
4. Remember don’t get stressed partial credit will be given. Do the best you can!
5. If you don’t know something at least **TRY** do not just walk out of the lab or submit an empty file Partial credit!
6. Remember what you can and can’t use if you don’t know then don’t use it and ask a TA if you can use it. If we catch you with unauthorized resources we will give you a zero, so better to be safe than sorry.

The assignment

You will be building a state machine diagram corresponding to the state transition diagram shown below

Your state machine will take in two inputs:

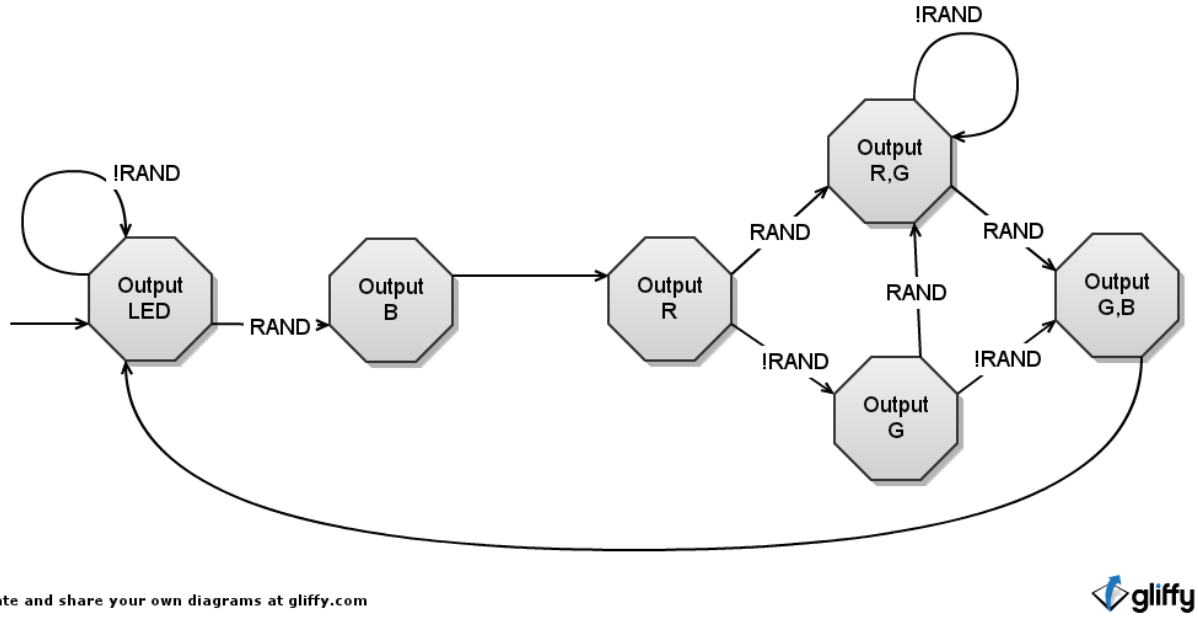
1) A “CLK” input which will be directly wired as the CLK input of your register.

2) A “RAND” input which is a random signal from my component.

Your state machine will have 6 states that correspond to the state transition diagram.

Your state machine will have 4 outputs:

1) “R” which should hook up to the RED input of my component
2) “G” which should hook up to the GREEN input of my component
3) “B” which should hook up to the BLUE input of my component
4) “LED” which should hook up to the LED in the main circuit



Notes:

- The RED, GREEN, and BLUE inputs to my component control the color my component is displaying. For instance if none of them are on then it will display black. If say red and green are on then it displays yellow. The color my component displays depends on the inputs.
- The LED should be on when Black is being displayed.
- Note implement the state machine for the state diagram above. It must match EXACTLY to get full credit.
- Use the file provided for you. You are to implement the state machine in the sub-circuit named statemachine.

Hints:

- Remember that the output logic should depend **ONLY** on the current state.
- If you get a fire (red wires) find out where two outputs are being connected together remember that two tunnels with the same name are considered to be connected
- If you have logisim problems ask a TA!
- The LED should not blink while you are in the “OFF” state
- You should NOT be doing anything with the CLK signal except wiring it to the inputs of your register and my component.

Restrictions:

- You may only use basic gates, splitters, and the register or D Flip Flop.
- Your logic should match that of the state machine.

Deliverables

1) Your edited version timedlab2.circ with the state machine and wired up correctly!
2) tl02.jar

You may submit only the files listed above. We will not accept any internet links we want the files above and only these files!

Check over your submission after you submit it. If you submit the wrong file and leave the lab I will not be happy and we will grade what you submit so please check over what you submitted after you submit it!

Have fun and good luck