

Programmable Logic Controller & Ladder Logic

1. Use any one of the computers in any one of the ECE labs, or download and install the following program on your own computer.

To download and install:

You can get the program from our class website or the source website.

Our website, download and run: www.ece.utah.edu/~ece3510/SetupTL6Edu.exe (or see below).

Setup Password: LadderBasic2009

Source website: www.tri-plc.com/trilogi.htm. You can download the ladder logic simulation software and install it on your computer, or you may be able to get by with just the web version. Either way, you will need to have Java Runtime Environment on your computer. You may need a setup password different from that given above

2. Start --> i-TRiLOGI 6 (Educational) --> Internet TRiLOGI Helps
Read through "Ladder Logic Fundamentals: Contact & Coils" under section 3
Note: the same help page is available from the Help --> Content menu of the program itself.
Open the "Ladder Logic Programming Tutorial" under section 1
3. Start --> i-TRiLOGI 6 (Educational) --> TRiLOGI 6.2 (Education Version)
Work through the "Ladder Logic Programming Tutorial". Save your work.
4. Start --> i-TRiLOGI 6 (Educational) --> Internet TRiLOGI Helps
Be ready to read through some of the other sections under "Ladder Logic Language Reference" to complete step 5, below.
5. Change the automatic (Manual is turned off) mode of your sequencer so that it takes 4 seconds per step.

I did this by adding two circuits (ladder rungs) between the original Circuit#1 and Circuit#2. These each operated a 2 second timer (set value at 20). When the first timer hit 2 seconds (counted down from 20) it started the second timer. When the second timer reached 2 seconds, it cut off current to the first timer which then cut off current to the second timer which then restored current to the first timer and started the whole process again. Finally, I replaced the C1k0.5s switch (in what is now Circuit#4) with one that was operated by the first timer.

You may choose a different method. Save your work.

6. Make at least two significant changes to your ladder so that it will do something new that you find interesting.
You may add or change circuits (ladder rungs).

For example, you might try to modify the delay at some points in the sequence, say double the time it spends at 3rd step. Or you might add two circuits that implement something completely different, using different inputs and outputs. This entirely your choice, but try to make it interesting and learn about some new function.

7. Save your work, using your last name as the file name. Attach it to an email and send it to:
"Leo Wang" <u1368998@utah.edu>
Subject: ECE 3510 homework FC2

You may uninstall the TRiLOGI program if you wish. We will not use it again in this class.

Other sources of information:

http://openbookproject.net/electricCircuits/Digital/DIGI_6.html