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EET 256 Capstone
Progress Report
Week 4

IC Tester

Current functionality -
Two counters run through all combinations for an 8 input 7400 series logic chip. Microcontroller verifies whether the output is correct for an AND chip or not.

Problems -
Counters were not triggering correctly by hand, so I have not been able to test the counters before hooking them up to the microcontroller.

Next Weeks Steps -
Have microcontroller compare the chip output to a table of different logic values (OR, NOR, NAND, etc.)

Percentage complete -
Hardware prototyping - 75%
Software - 30%
Manufacturing - 0%

Hardware prototyping log -
First - 8 pins on micro controller to eight AND inputs. LEDs on each input and output for visualization. four micro controller pins required for AND outputs.

second - two micro controller outputs to 4 AND inputs each

third - two up counters to cycle through full range of input combinations. only one micro controller output required. ZIF socket now available.

4/20/15
Added safety diodes and a decoupling capacitor to power lines.

Software log -
1.0:
First version.

2.0:
Switched from one output pin per AND input pin to just two outputs tied to four pins each.
Code now works (For AND chips only).

2.1:

Added second output LED for OR
Added OR Truth table
Changed good_or_bad into is_and and is_or booleans
Made result array non-specific (Logic_Result)
Now program checks result against both truth tables and lights up the corresponding LED

Purchases log -
Zif socket - $8
Breadboard - $19
NOR chip - $2.50
Multimeter - $2