Modern Topics in CS Problem Set 2

Dr. β

Due: September 7, 2017

MakeShift Seven-segment LED

A series of octave files have been created for you as scaffolding for your assignment. You must edit **bit2segment.m, adder.m, and subtractor.m** to complete this assignment. The script **assigment2.m** can be run at any time for verification that your script is working.

1. Edit the file **adder.m** to sum two 4-bit numbers. These are the arguments in the function. Remember strings are treated as arrays of characters, and must be converted into an array of bits for logic to be performed on them. The output must then be translated into a string for use by the other functions.
2. Edit the file **subtractor.m** to take the difference of two 4-bit numbers.
3. Finally place the logic in bit2Segment.m to translate a 4-bit number into the segments that output a hex character.
4. Create a multiplication script that can multiply two 4-bit numbers together. This algorithm can be found pretty easily on the internet if you need assistance. However, for a challenge try and come up with your own pattern and series of logic gates! You need not truncate the result or put it through the segmentLED code if you do not want to.