Frank Martino - Proof of Skills Day 1

Q1 Circuit Simulation

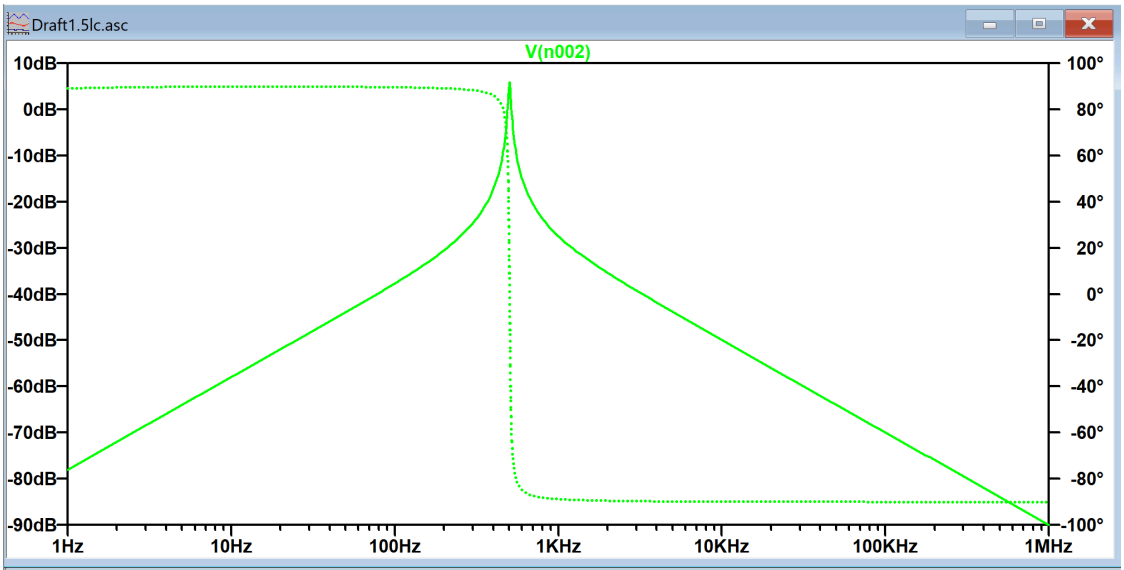
Prove your skill set using LTSpice (preferred Circuits simulation program) or equivalent simulation program (i.e. PSpice or MultiSim..)

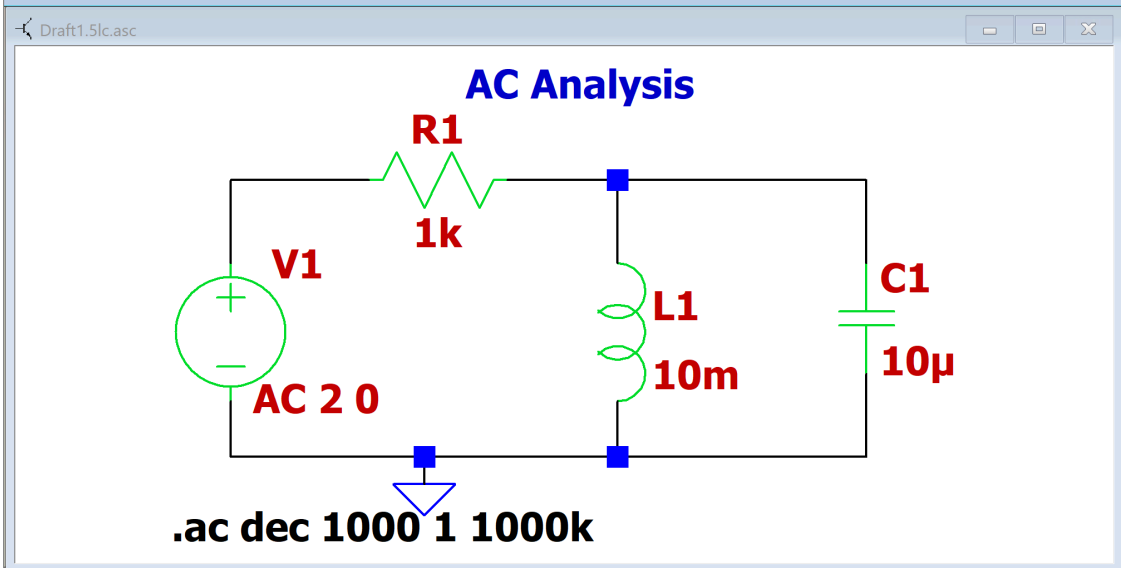
Each of the **Circuit Simulation** Objectives above should reflect the following goals:

- [x] ~~1. I can change my schematic and plot background to white and cut and paste on an external document~~
- [x] ~~2. I can change the line thickness and color of my schematic and simulation output~~
- [x] ~~3. I can label the simulation output clearly with the circuit schematic component names~~
- [x] ~~4. I can intentionally show the most relevant part of a simulation by changing the simulation output window~~

Q1.5 AC Analysis

I can use AC analysis to find the frequency response of an RC or RL filter (hint: find a filter with or without an op amp, we'll understand how this works later!)





Above shows how I combined both an RL and RC filter circuit to create a bandpass filter, a RLC filter. This combines the lowpass frequency filter attributes from the RC circuit and the high pass frequency attributes from the RL circuit. By putting the circuits in parallel with each other we see a combination of both since it's effectively multiplying the voltages at each frequency. The RLC band pass filter will now block both low frequencies and high frequencies but let in the mid range frequencies. Using the AC analysis we can range the values in the graph from 1Hz to 1Mhz in inorder to see what the filter will now allow in.