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Session: 022
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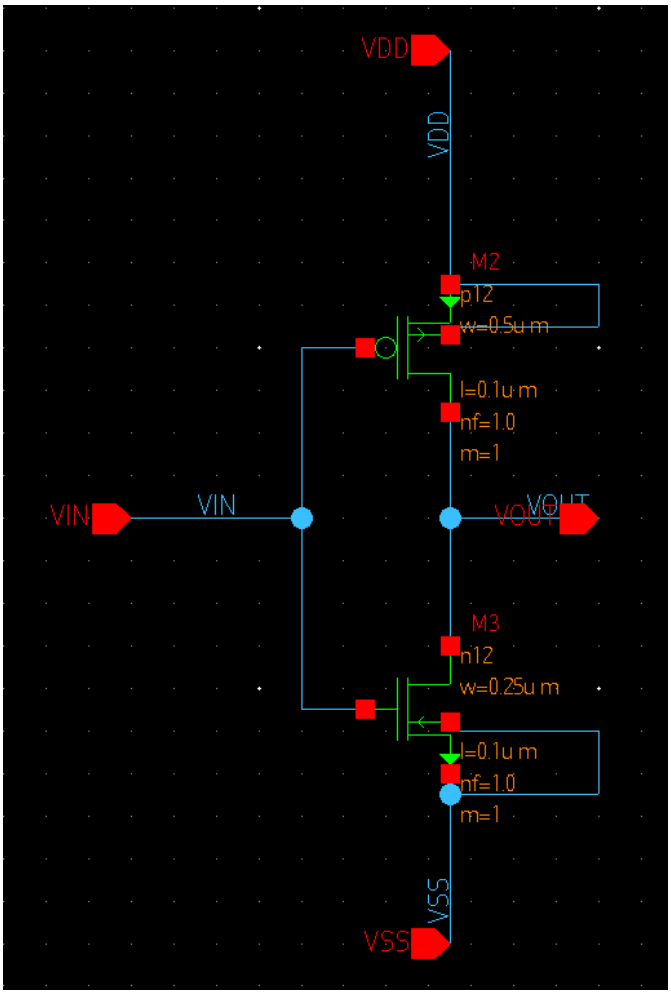
Video Checkoff link:
https://drive.google.com/file/d/1T7RGLP1X-js7wJJH9xT8xZtZeTl6Puya/view?usp=sharing

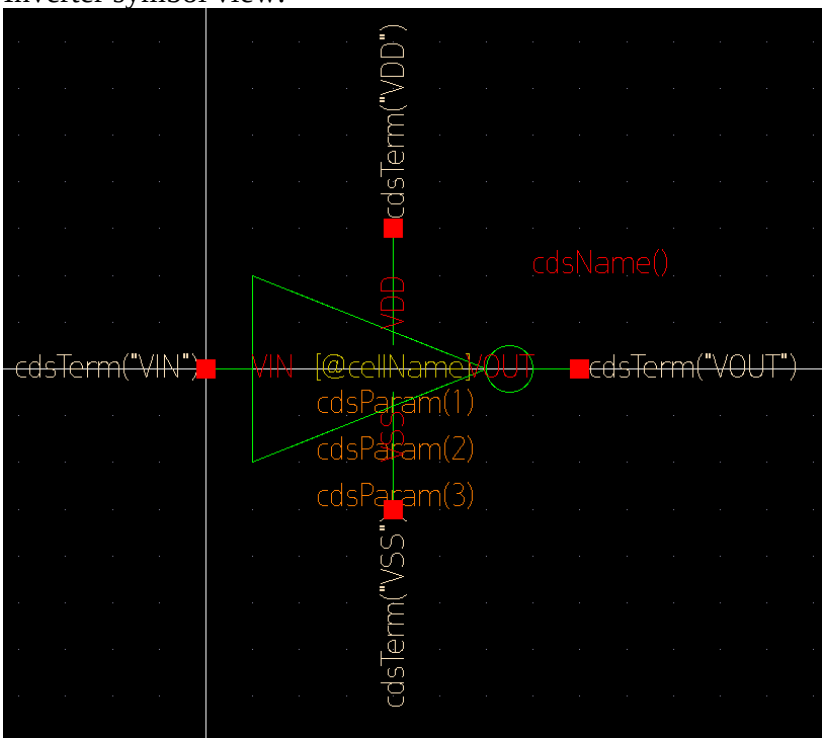
Summary:

This lab introduced the idea of creating an inverter, a symbol for an inverter, introducing this inverter into a broader circuit, and testing characteristics of this circuit. We examine transient waveform analysis, DC sweep waveform analysis, differences in VIN and VOUT delay, rising and falling edge comparisons, average current, and frequency measurements. We navigate from the console, to the library manager, to the SAE, to the waveform monitor. These concepts were all lightly touched on, with a lot of the related concepts unexplored, but perhaps next time the familiarity will make more advanced techniques easier to implement.

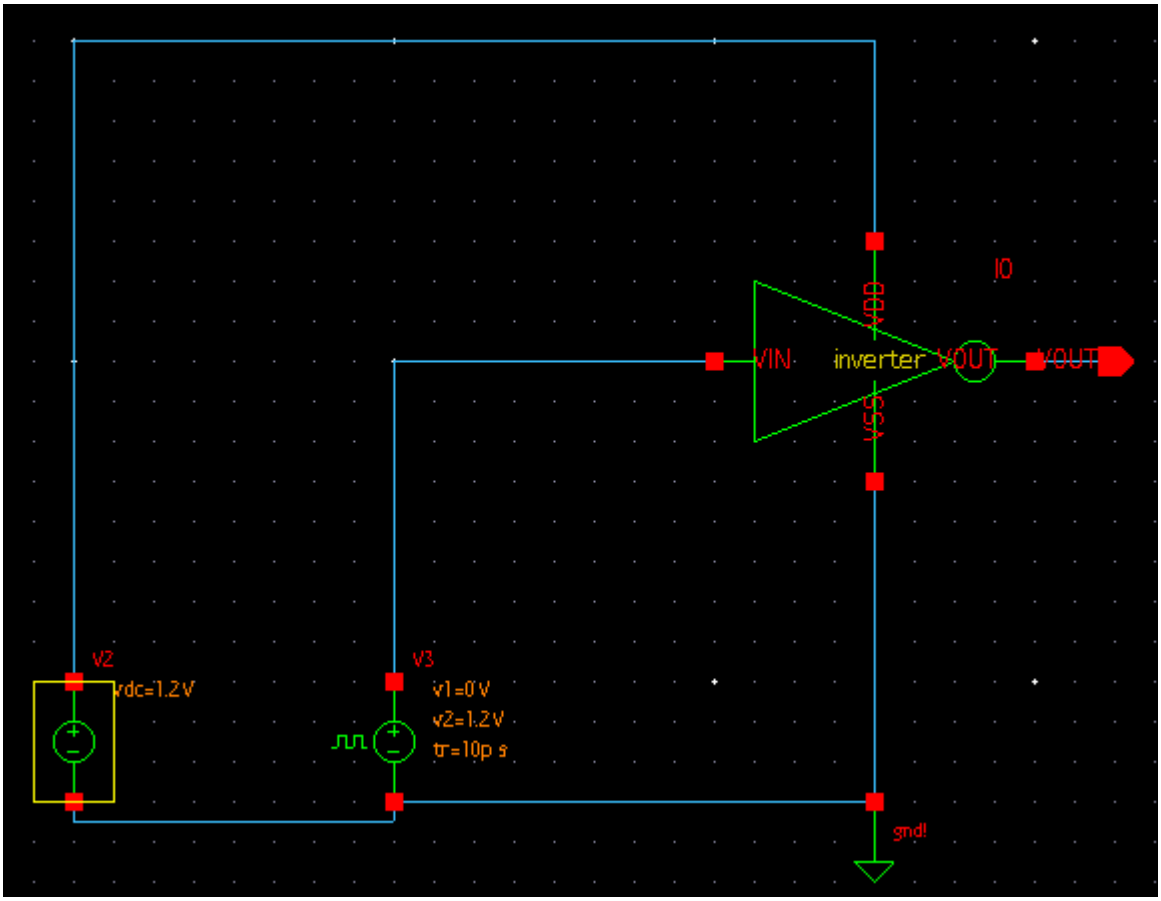
Inverter schematic:



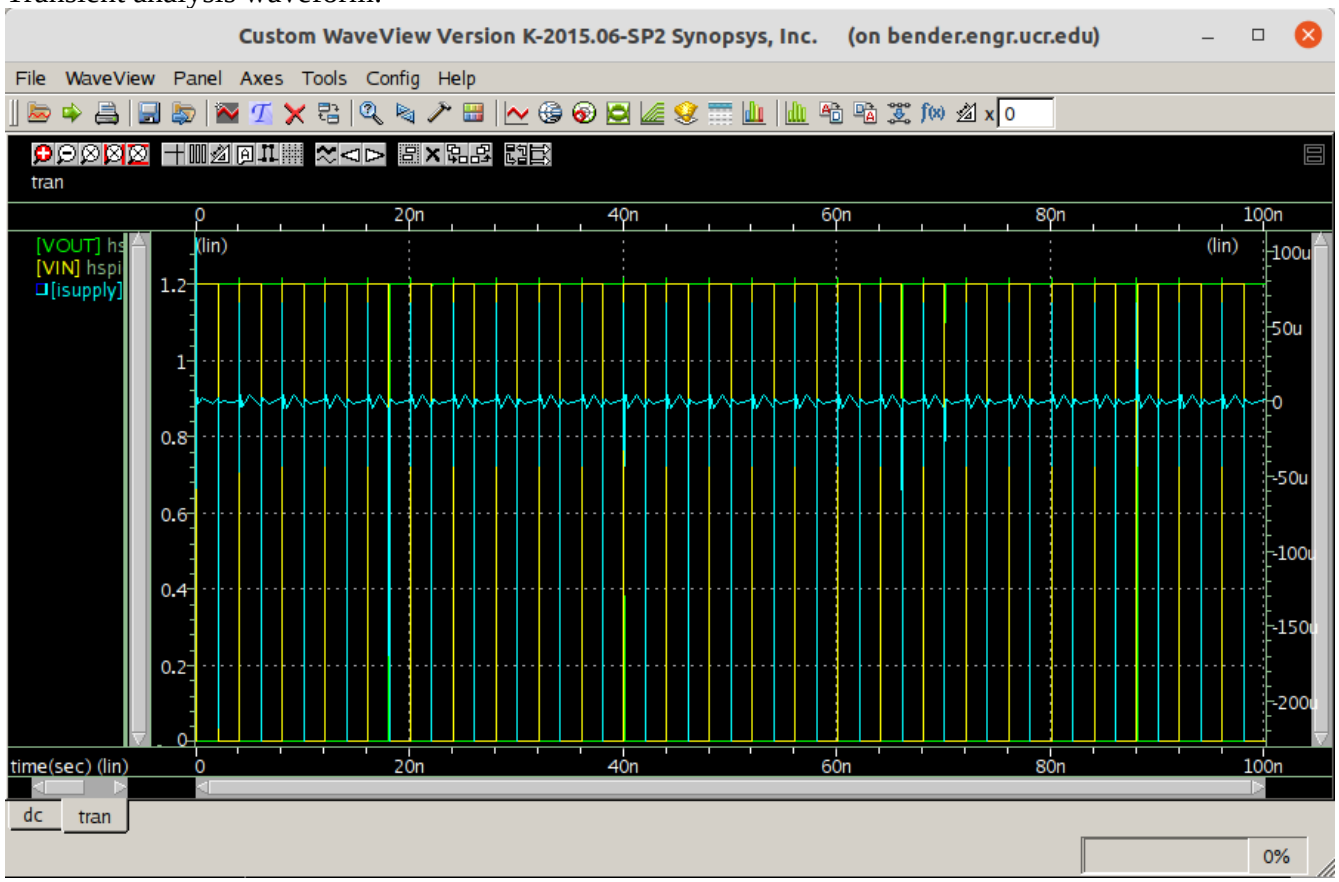
Inverter symbol view:



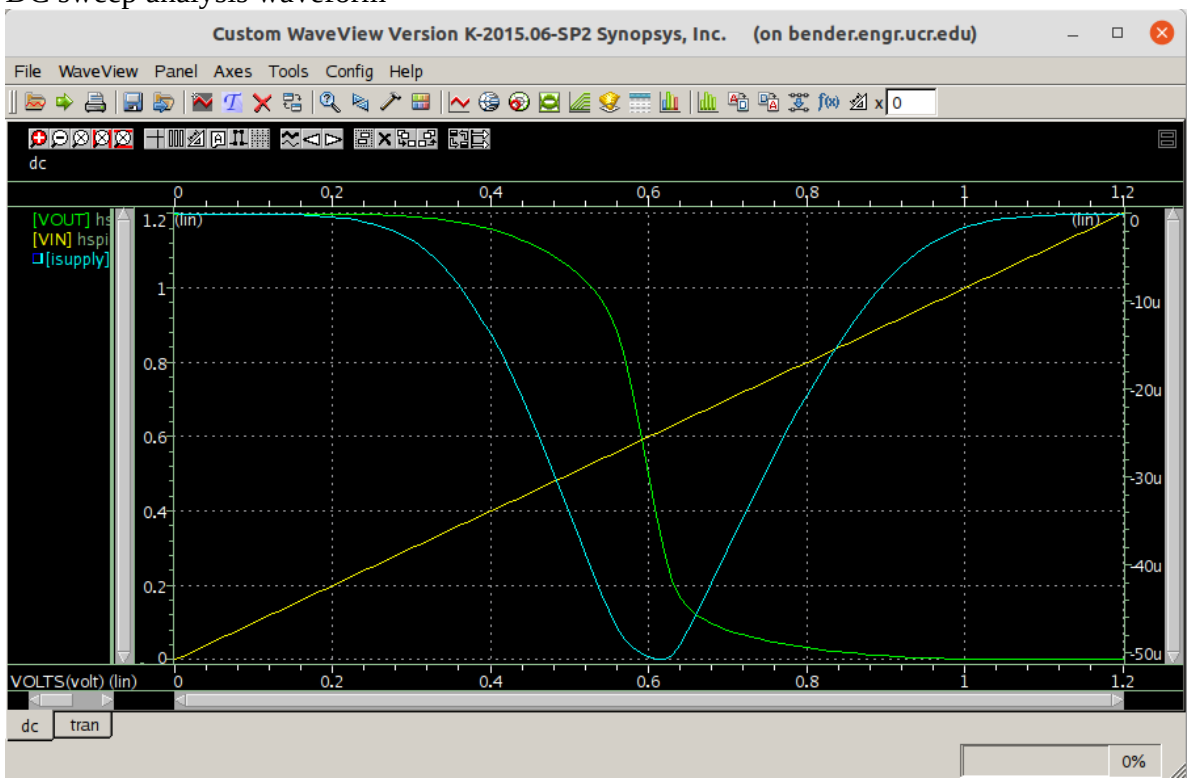
Test bench:



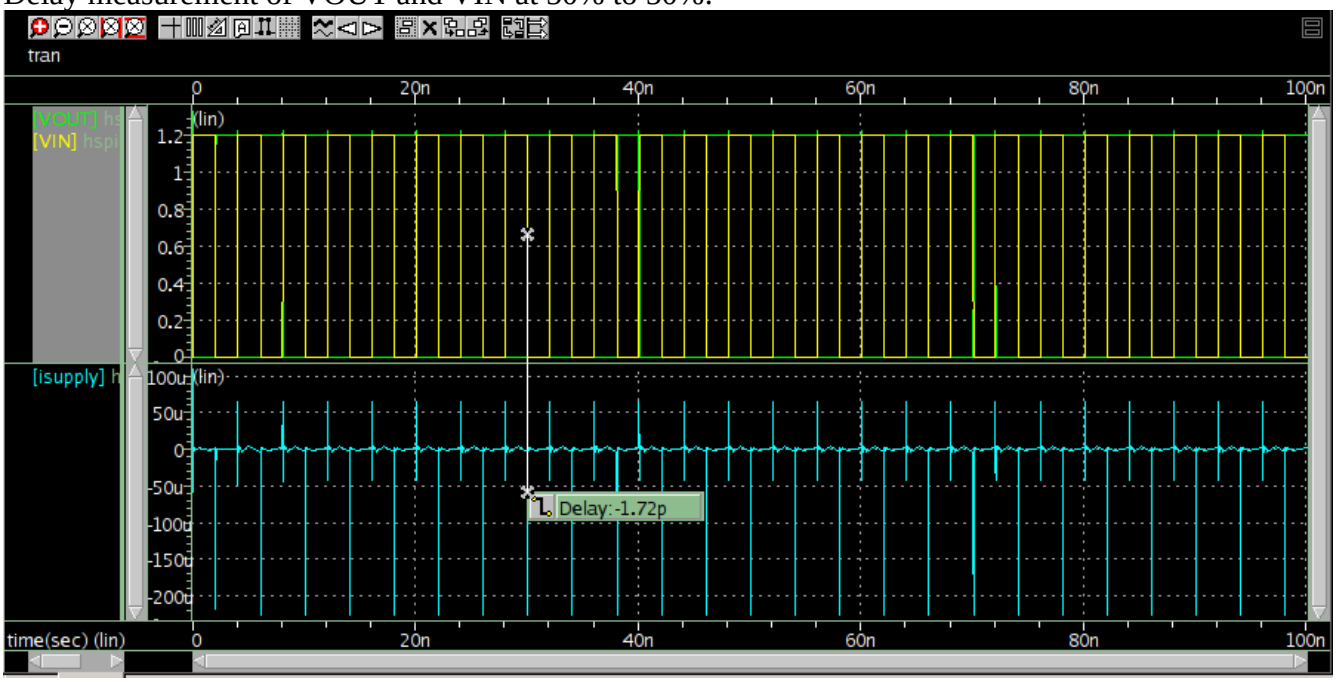
Transient analysis waveform:



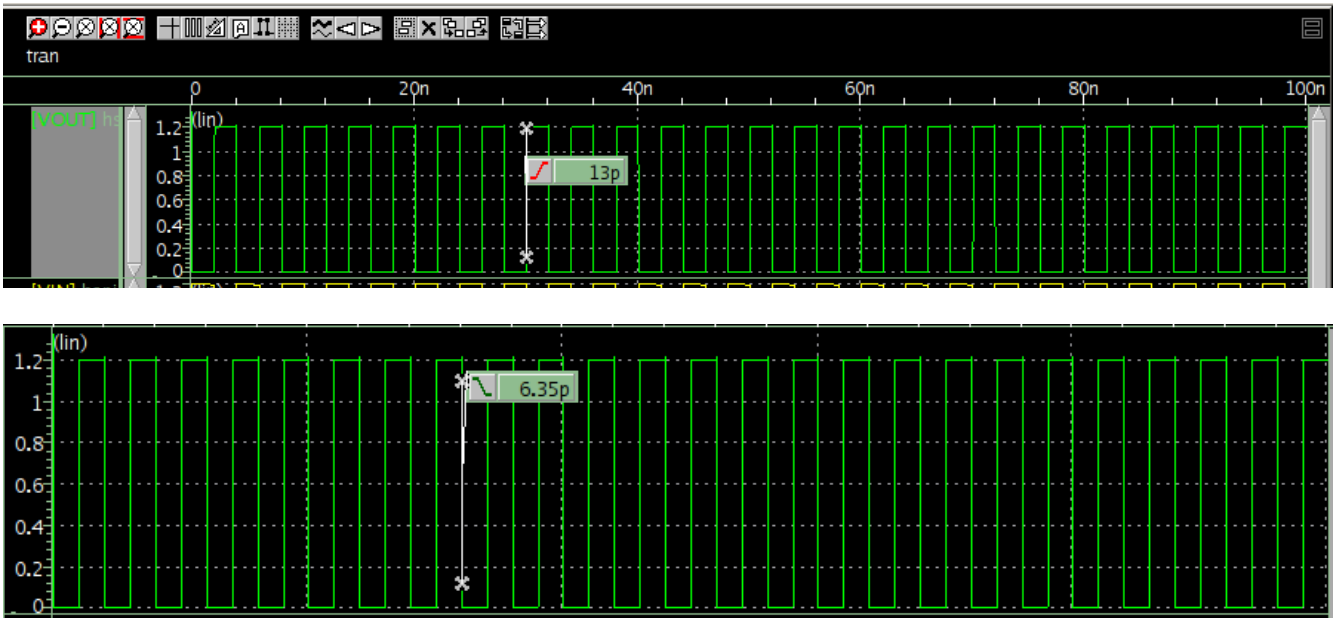
DC sweep analysis waveform



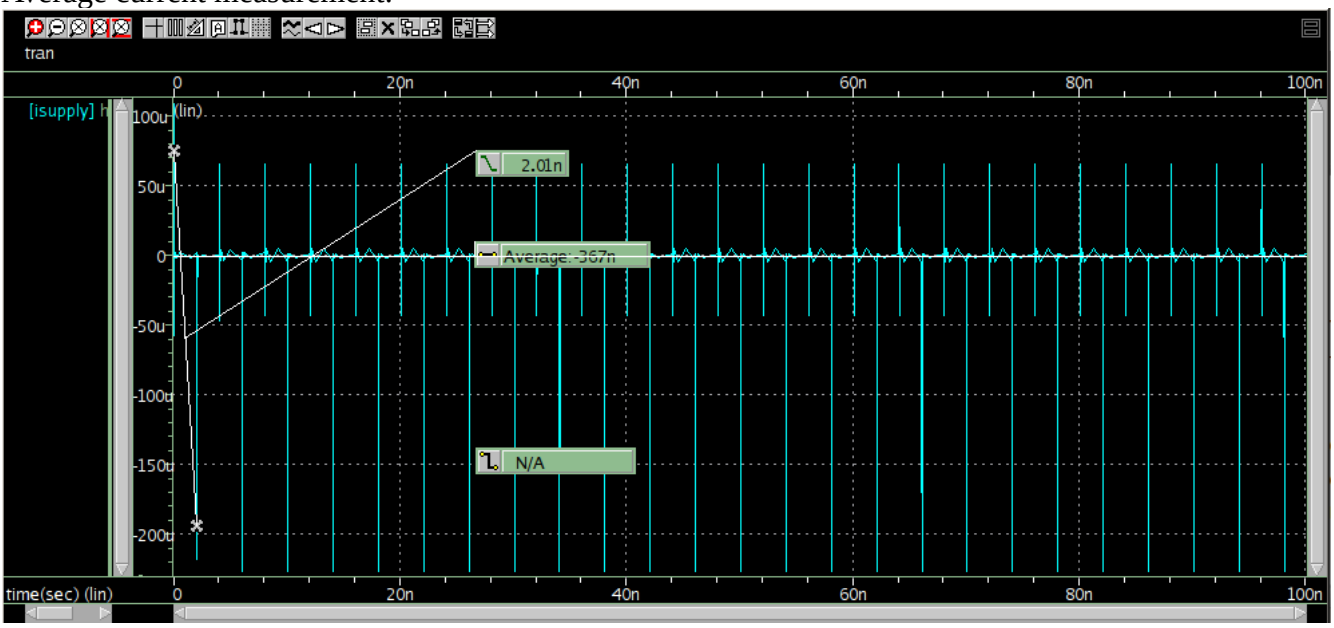
Delay measurement of VOUT and VIN at 50% to 50%:



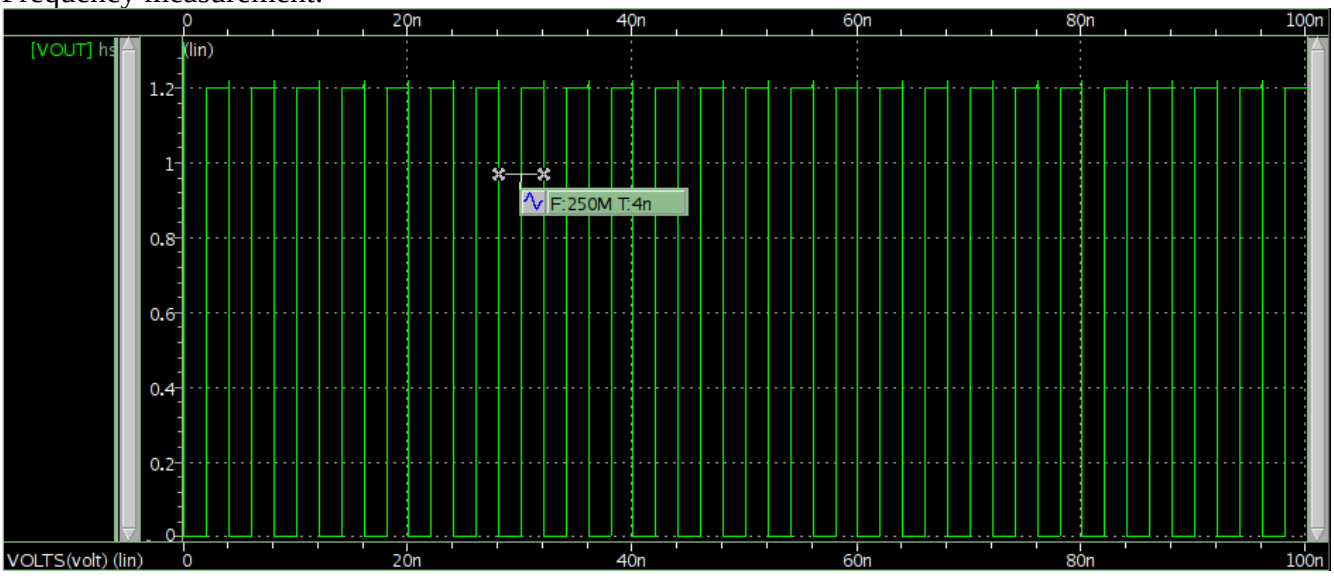
Rise AND fall measurement at 90% and 10%:



Average current measurement:



Frequency measurement:



Issues:

I didn't encounter any problems with this lab. I already had Ubuntu installed, knew how to ssh, was able to follow the detailed instructions in the lab, and worked through every instruction properly. I'm not sure I'd be able to recreate this lab tomorrow, as I didn't thoroughly understand every part of what I did, which is perhaps a problem. I'll internalize all of the different small parts with a couple more labs though.