PROJECT 5

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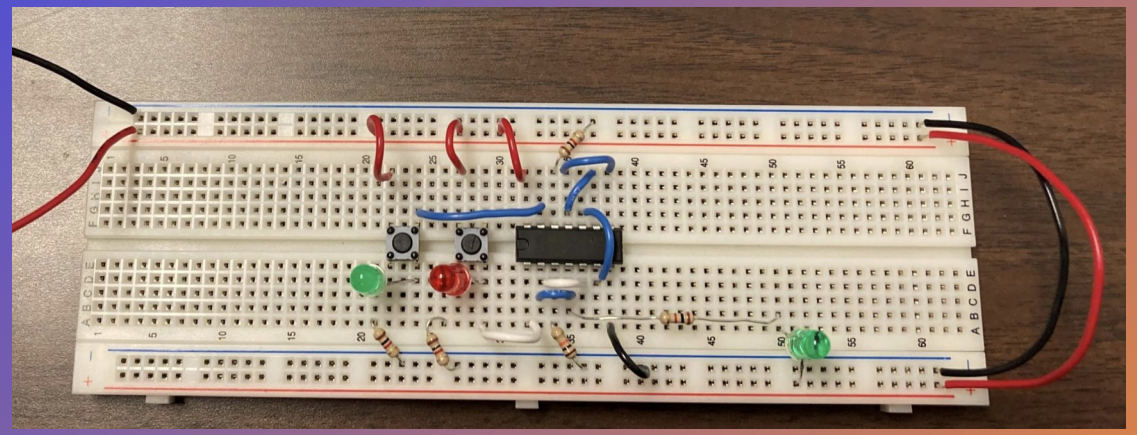
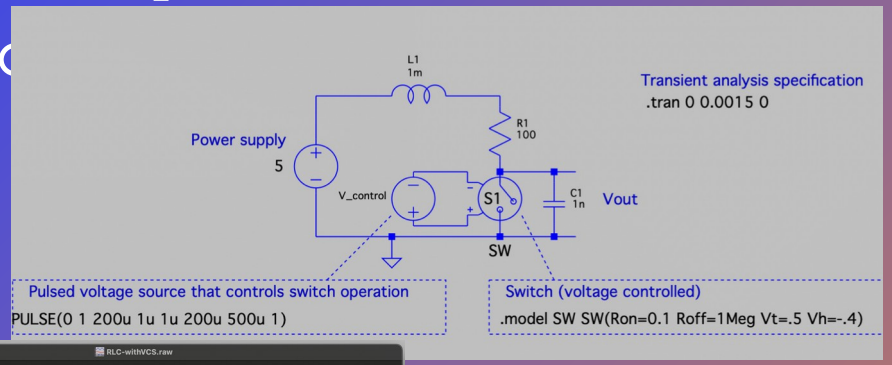
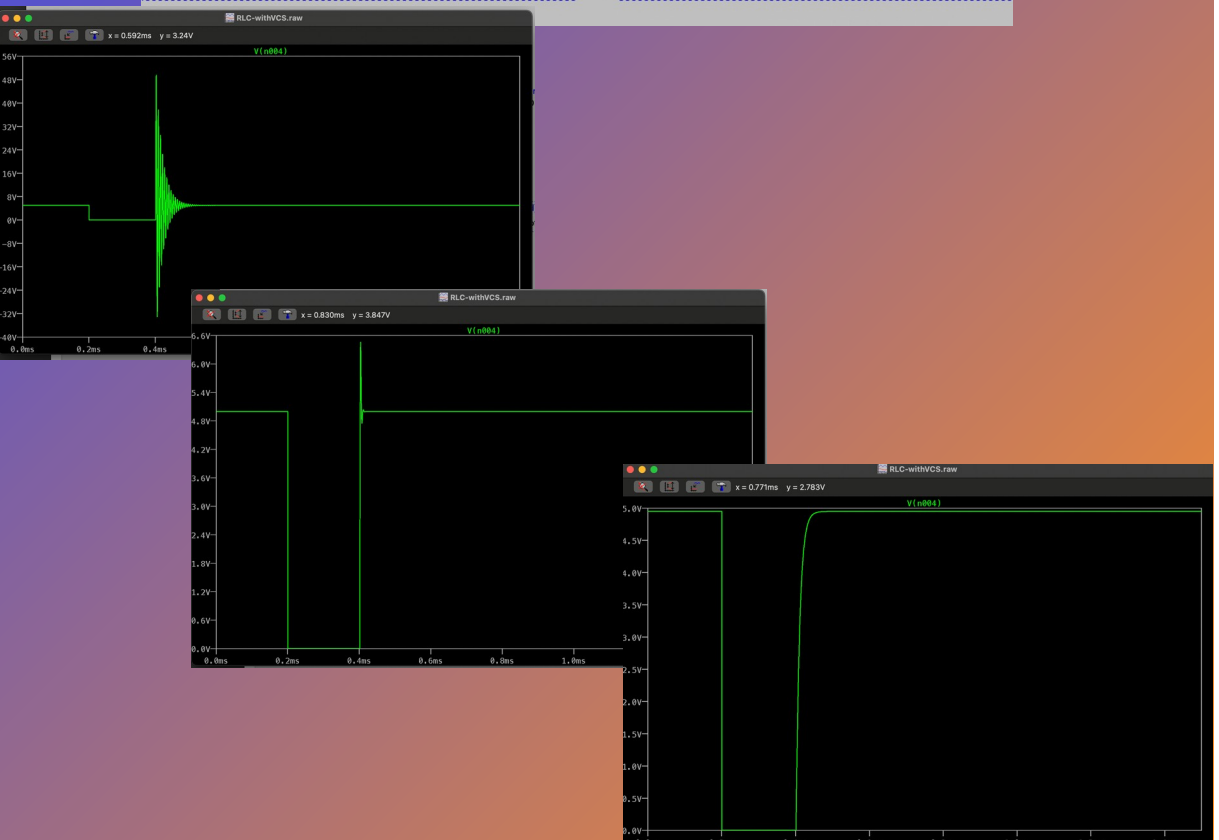
introduction



- The goal of this project is to turn on an led with a button and turn it off with a second button
- This involves looking at the effects of stray impedance
- an LRC circuit is created, and the transient response is recorded.
- A digital logic circuit is added, and the LEDs are used to visualize the state of each gate.

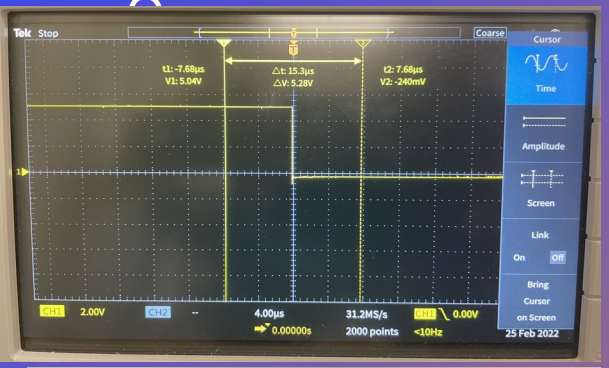
prelab

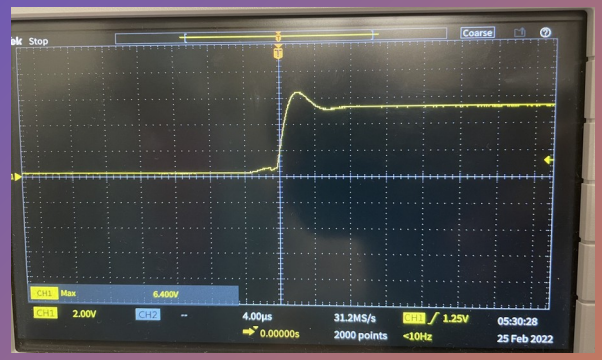


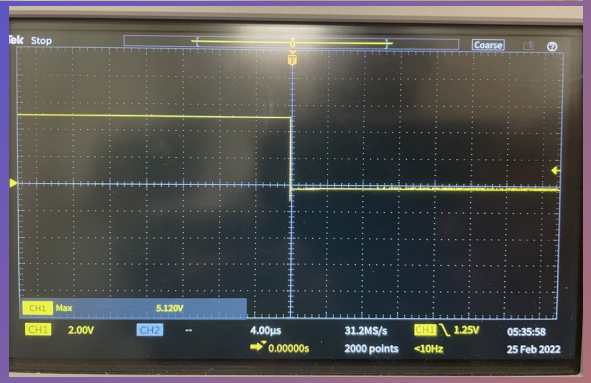


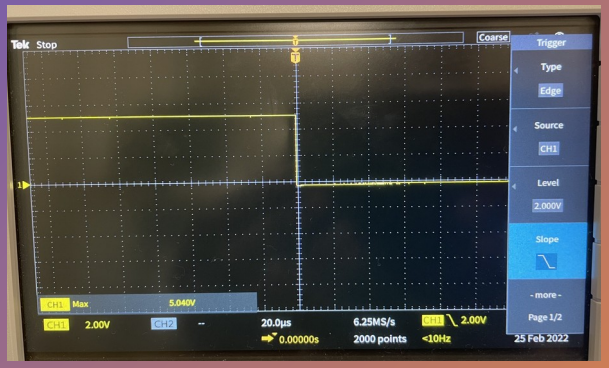
- A transient analysis is run on a switch-controlled input circuit
- The voltage is measured across the input voltage to the digital logic circuit with 3 different pull up resistors.
- The first is 100
- The second 1k
- The third is 10k

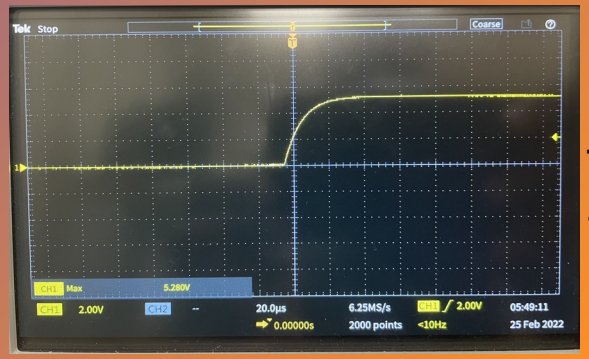
RLC circuit

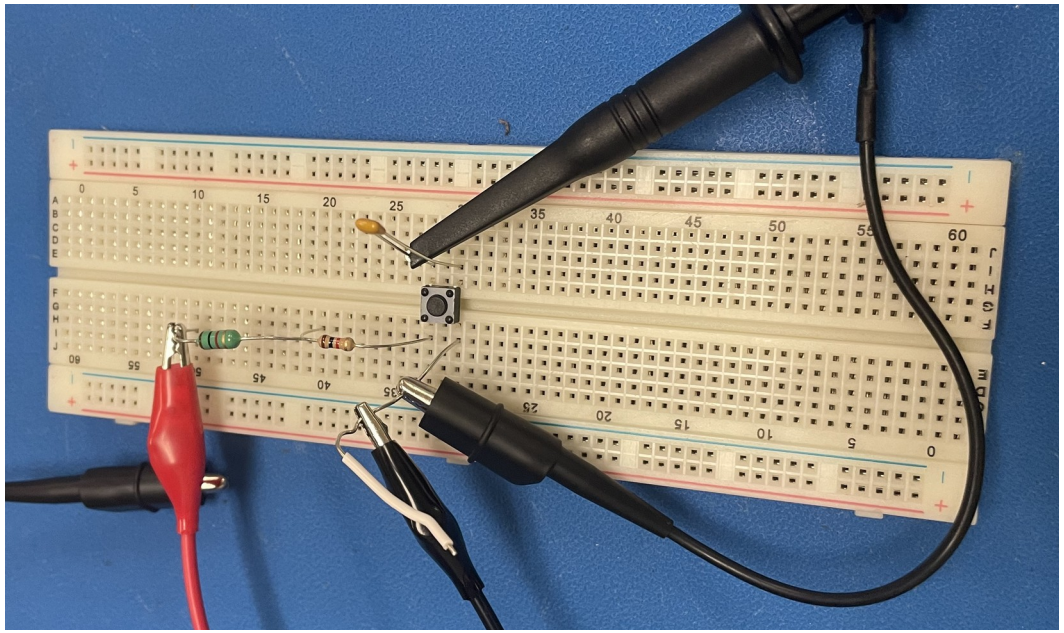










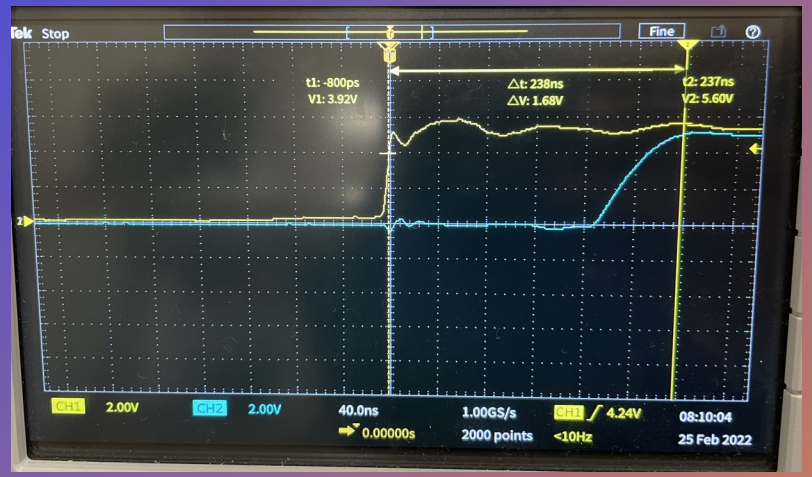


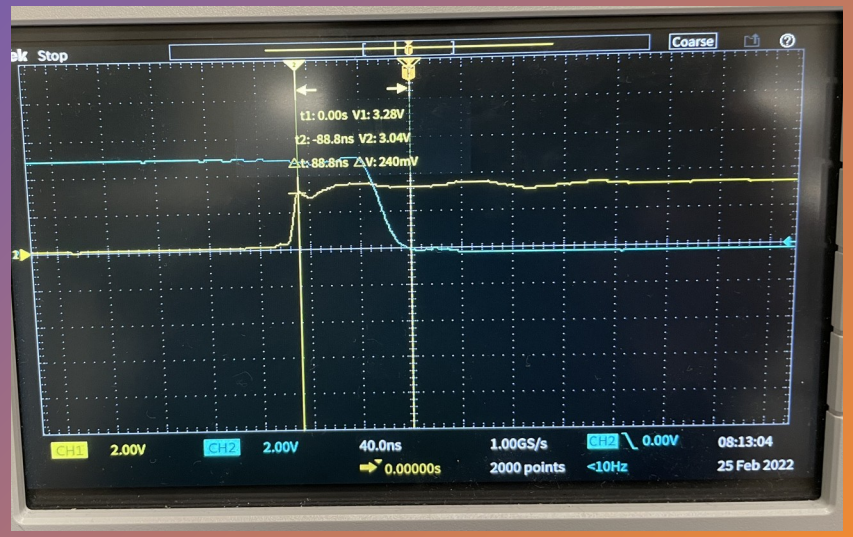
Using this circuit, the rising edge of the switch release and and falling edge of the circuit is recorded to look at the transient Response for each resistor.

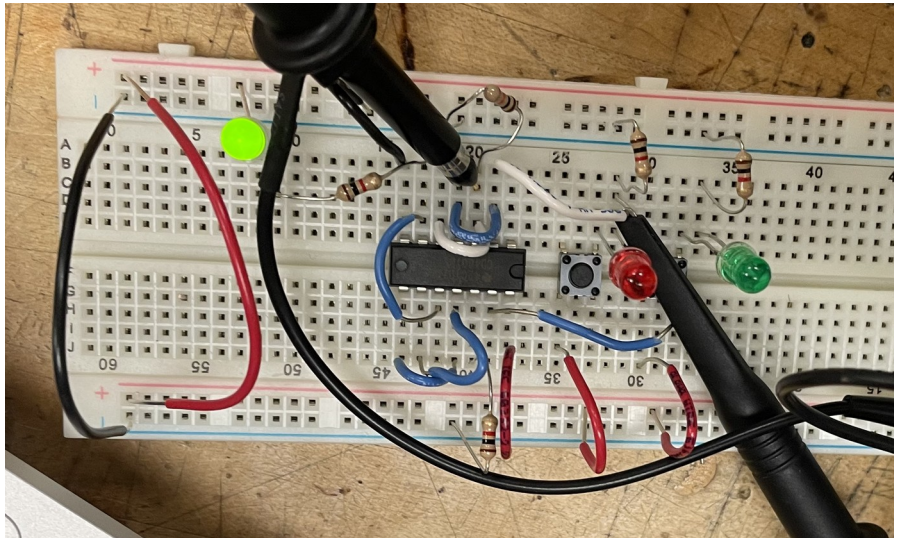
The resistor values from top to bottom on the left are 100,1k, and 10k.

The hundred ohm resistor response was very similar to the thousand ohm in the project, but every other Graph was not comparable to the prelab values.

Digital logic circuit







- A quad nor gate is place in the middle of the circuit
- Two of the nor gates are connected to produce an or function ,and the other two are connected to produce an RS flipflop
- The oscilloscope shows the propagation delay