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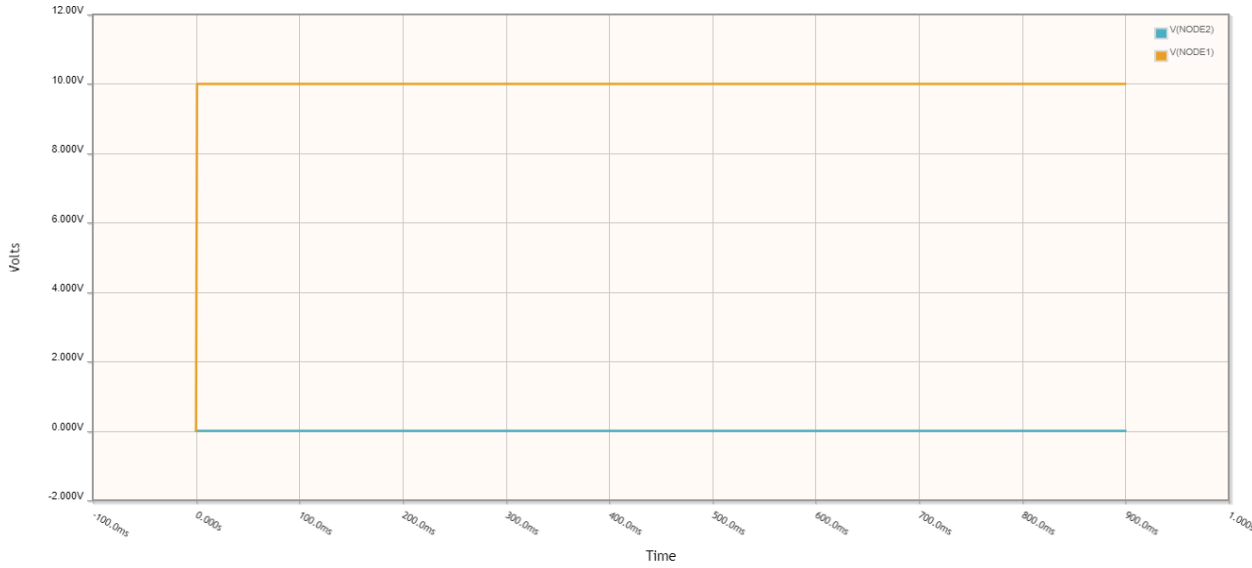
Lab Week 7

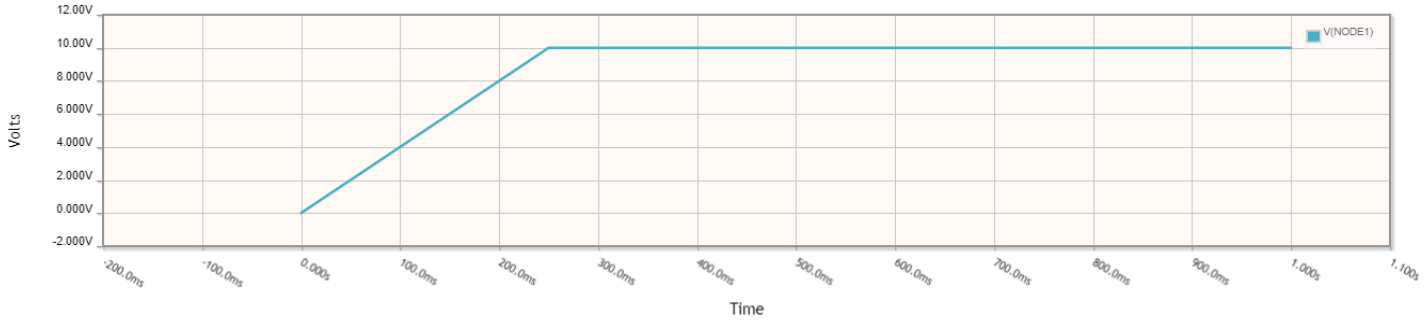
1) Resistors in series
   - Observation: the voltage reduced to 1/3rd the original after the third resistor was added
   - Link: https://www.circuitlab.com/circuit/5b29ez2pqveu/lab-7-circuit-1/
2) Resistors in parallel
   - Observation: The system did not allow multiple nodes after the voltage went to zero after the resistors.
   - Link: https://www.circuitlab.com/circuit/gymdqc929m4t/lab-7-circuit-2/
3) Resistors in series and parallel
   - Observation: The voltage drops 2/3rds after passing through two resistors in series.
   - Link: https://www.circuitlab.com/circuit/9x2xn675487k/lab-7-circuit-3/
4) Powering light bulbs
   - Observation:The power output will be 1 W. When the voltage was changed to 15 the Power output became 2.250 W. When the bulb received 15 Volts and the internal resistance changed to 75 the Power output became 3 W.
   - Link: https://www.circuitlab.com/circuit/57e55289cd46/lab-7-circuit-4/
5) Capacitor circuit
   - Observation:
     Sine Function Voltage Generator

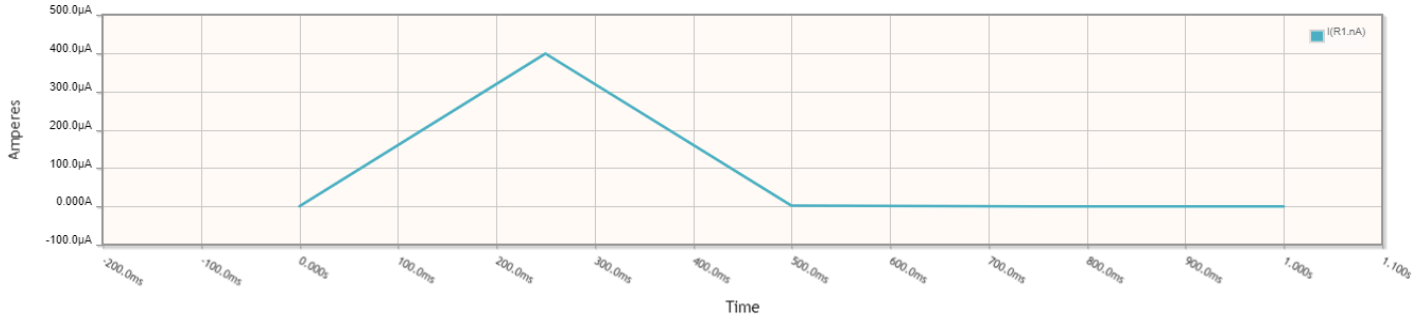
     Step Function:



- Link: https://www.circuitlab.com/circuit/vrjv7bsrzqjt/lab-7-circuit-5/

6) RC circuit
   - Observation: When the resistance and Capacitance is varied the overall shape of the voltage and current graphs remains similar. The time constant is the only thing that changes.





- Link: https://www.circuitlab.com/circuit/5qpspf3526yn/lab-7_6/
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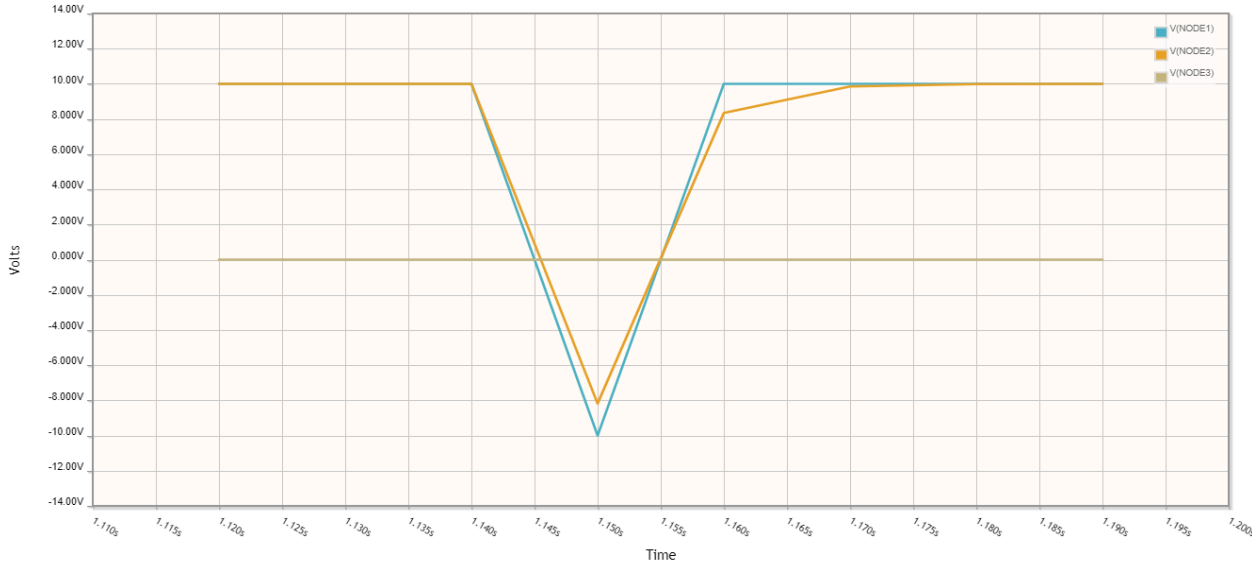
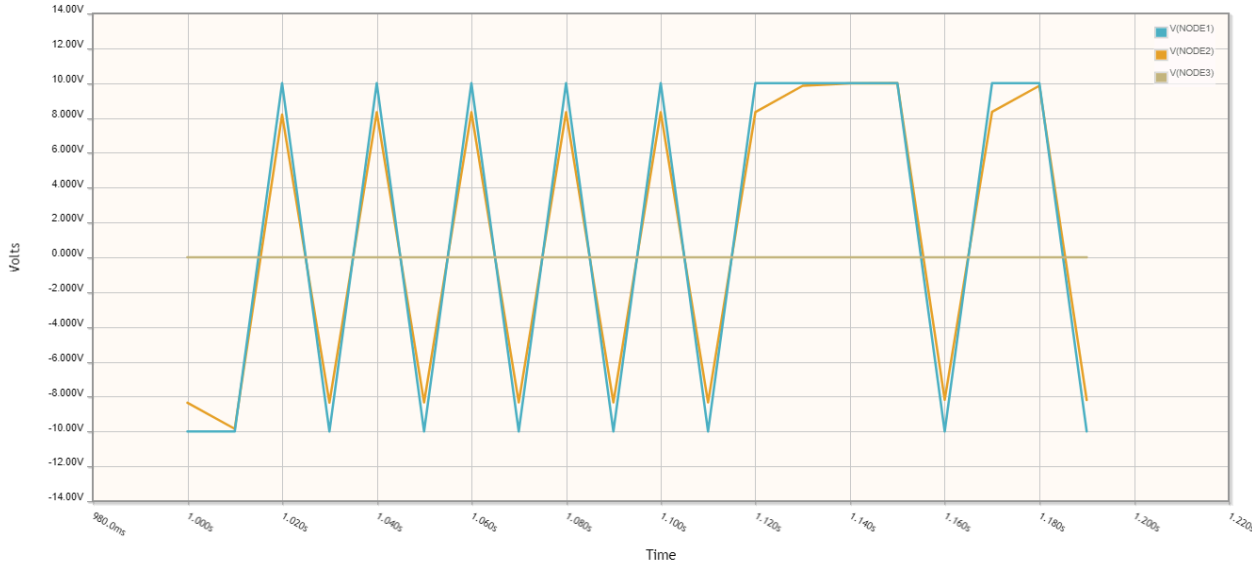
7) RC filter
   - Observations: When the resistance was increased the output voltage of the circuit did not change. The frequency of discharges from the capacitor increased when the voltage increased.

Plot with given parameters



Plot with a frequency of 250Hz and both resistance and capacitance kept constant



- Link: https://www.circuitlab.com/circuit/du955pcjsddg/lab-7-circuit-7/