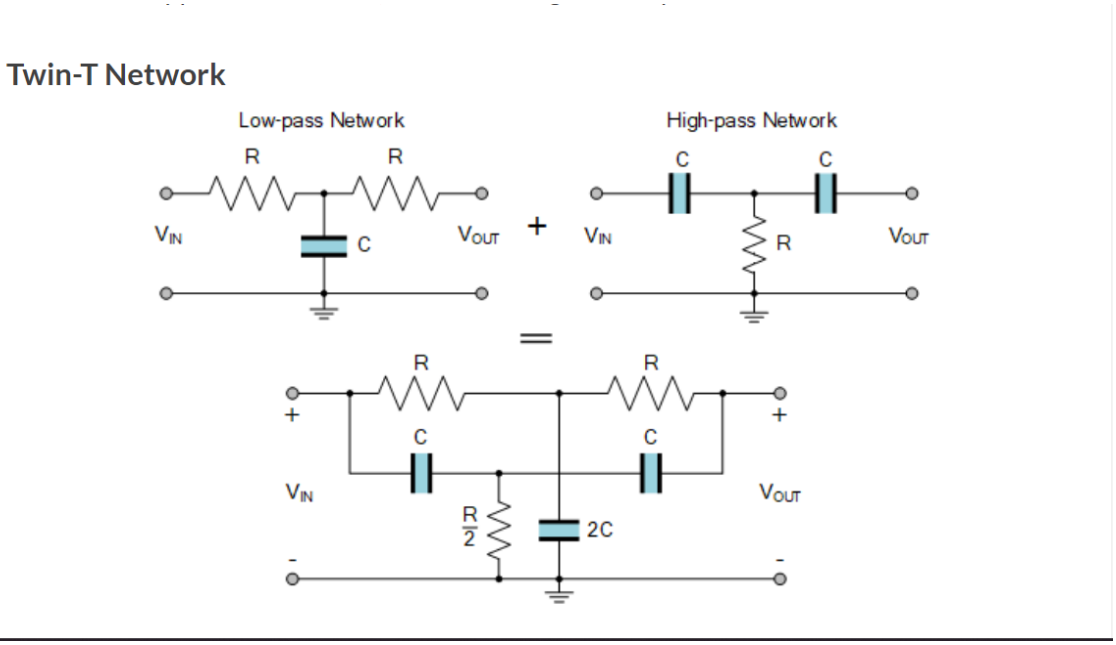
Twin-T Oscillator

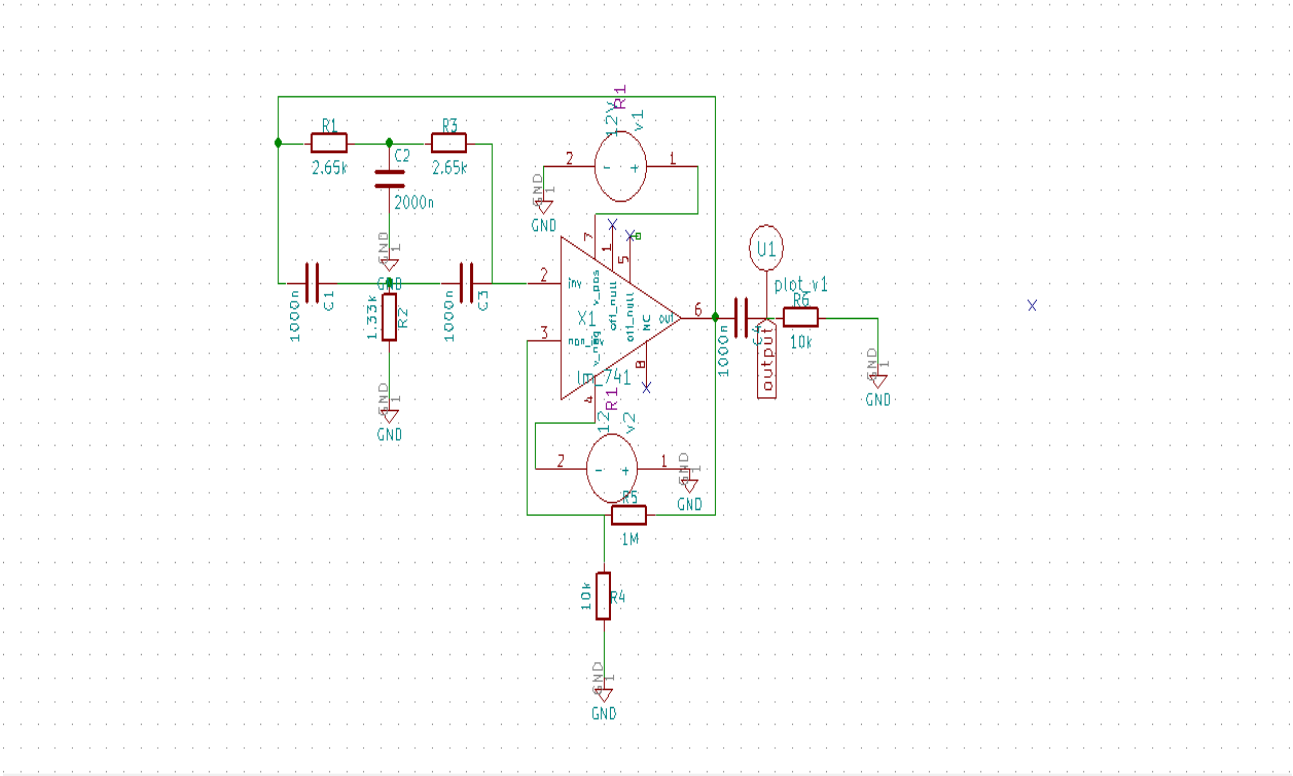
Theory:

The Twin-T oscillator is a Sine wave producing oscillator with RC combinations similar to the Wein's bridge oscillator. Instead of a bridge which produces a oscillatory type signal in the circuit, the Twin-T Oscillator has two T shaped oscillators with RC combinations in such a way that when two capacitors are placed with a resistor between them grounded and two resistors with a capacitor grounded in between them and are connected to the Inverting port of an Op-Amp and feedback is to the Non Inverting port of the Op-Amp.



This is the typical T Type connection of the Twin-T Oscillator.

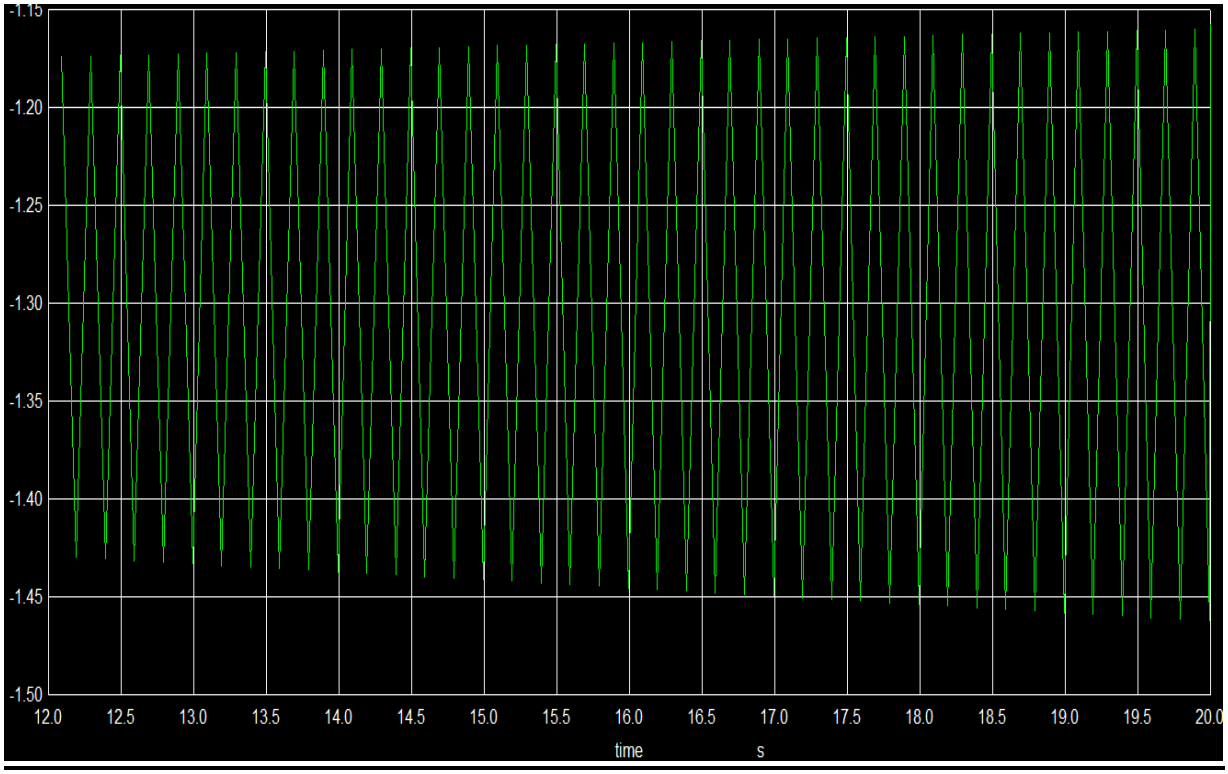
Schematic Diagram:



Components used:

- OP-Amp LM_741
- 3 1000nF capacitors
- 1 2000nF capacitor
- 2 2.65K ohm resistors
- 1 1.33K ohm resistor
- 12V DC voltage
- 2 10K ohm resistor
- 1 1M ohm resistor

NgSpice Ouput Plot:



Reference:

- https://www.electronics-tutorials.ws/oscillator/twin-t-oscillator.html
- https://www.chegg.com/homework-help/definitions/twin-t-oscillator-4
- https://www.ee-diary.com/2021/12/how-does-twin-t-oscillator-work.html

Conclusion:

We have thus produced a Twin-T oscillator using eSim Software and have produced a Sine wave oscillating circuit with a LM_741 OP Amp in a specific time period.

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