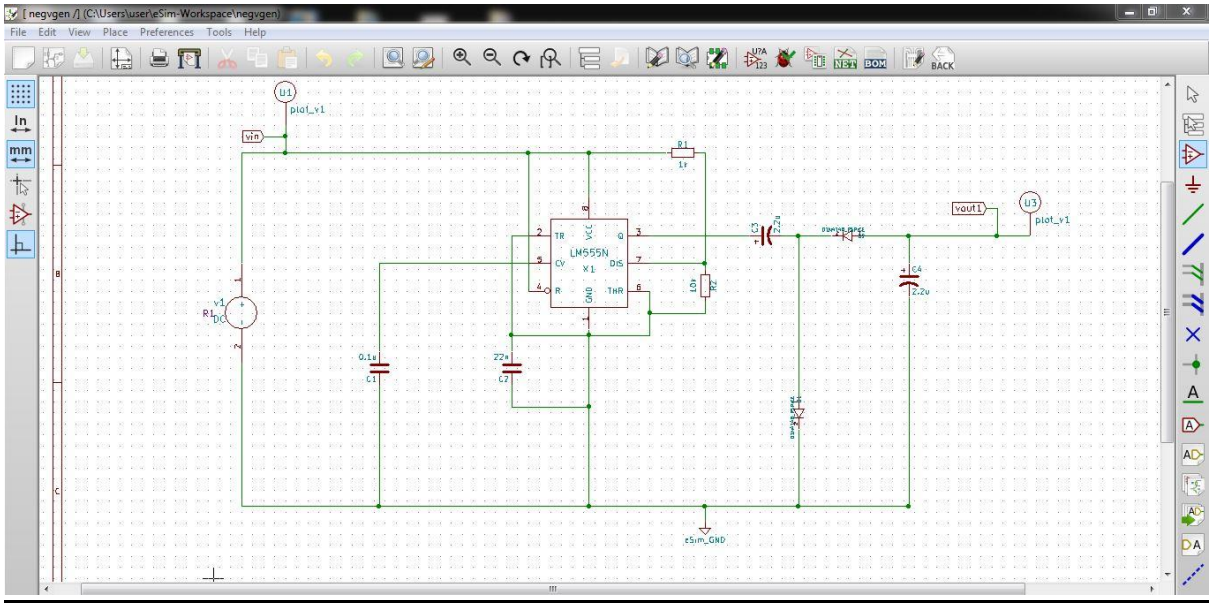
NEGATIVE VOLTAGE GENERATOR

THEORY:

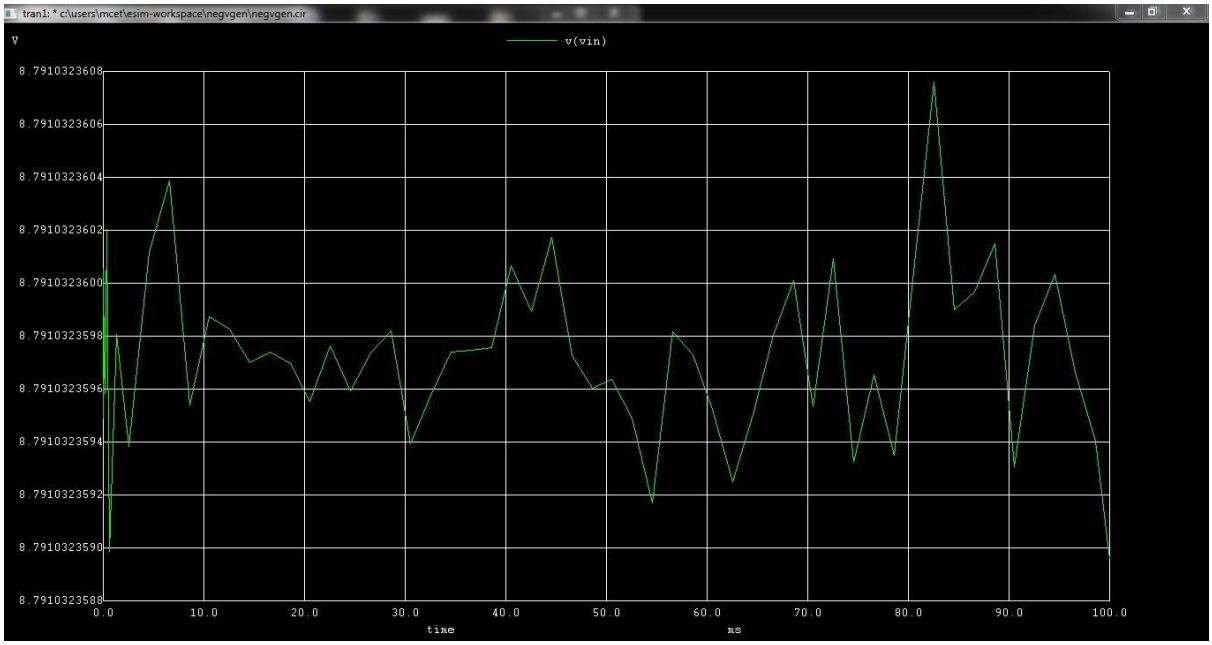
The circuit is Negative voltage generator. Here, the 555IC timer acts as the Astable Multivibrator. Because of this, the capacitor C1 gets charged and voltage VCC appears across it. Now ground appears after the positive peak, will be an current flow. Now, the diode D1 will be reverse biased and the diode D2 will be forward biased. With D2 having forward biased, the capacitor C1 will have a way to flow. So, the capacitor C1 discharge through D2, along it charges the capacitor C2. Hence, during 0V signal there will be an voltage appearing across C2 capacitor. Voltage appeared across C2 will be of negative sign where referred to ground. This charging and discharge occurs at every cycle and there will be negative voltage across the output with respect to ground.

CIRCUIT DIAGRAM:

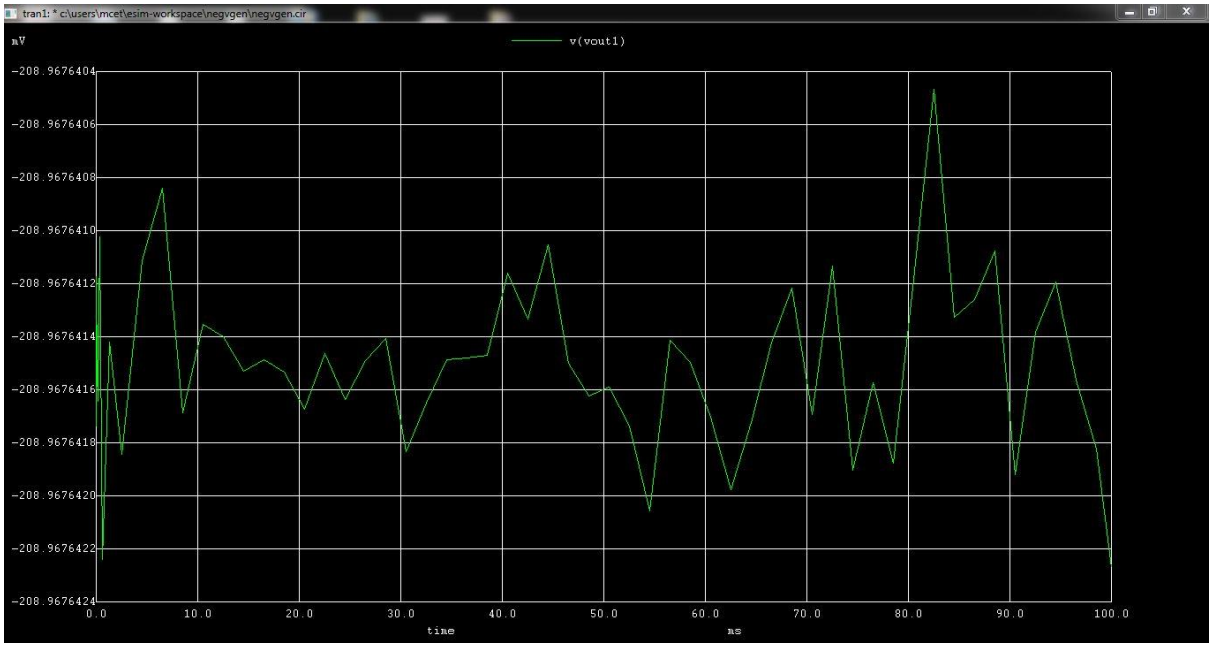


GRAPH:

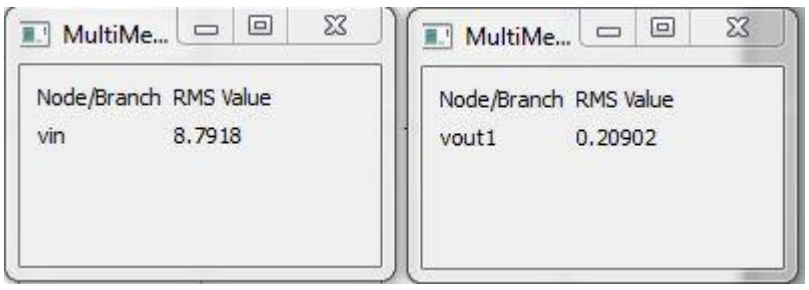
- **INPUT**



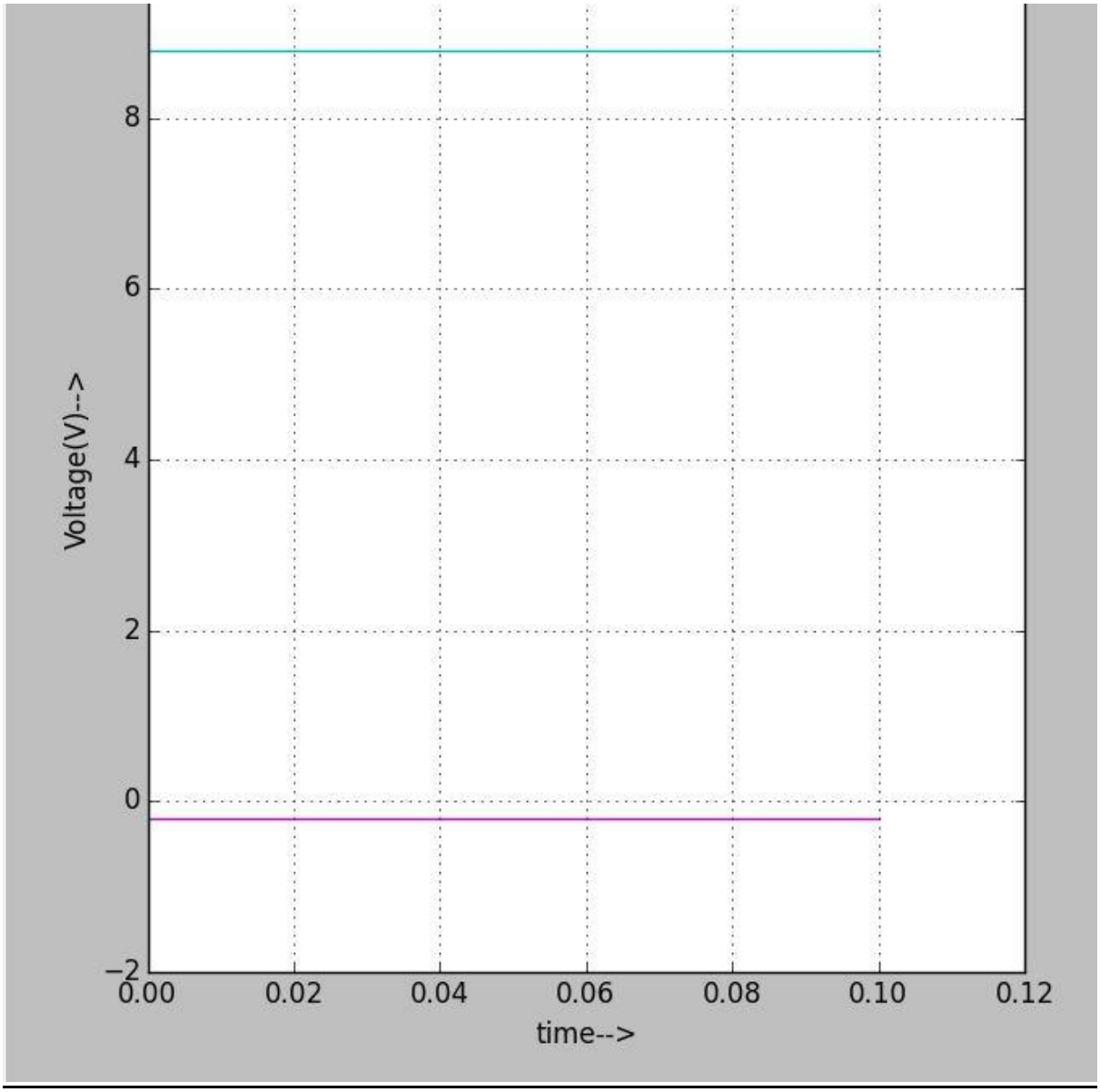
- **OUTPUT**



RMS VALUE:



PYTHON PLOT:



CONCLUSION:

Thus we have we have studied the response of negative voltage generator and we get appropriate waveforms.

REFERENCE: https://circuitdigest.com/electronic-circuits/negative-voltage-generator