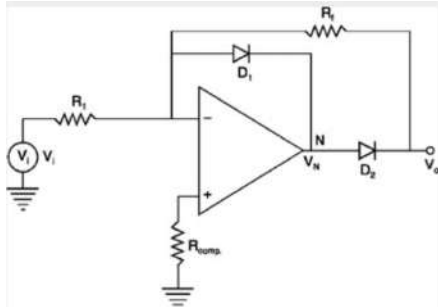**PRECISION HALF-WAVE RECTIFIER :**

INTRODUCTION:
The precision half-wave rectifier inverts and transfers only the negative-half input of a time varying input signal (preferably sinusoidal) to its output. By appropriately selecting the feedback resistor values, different gains can be achieved.

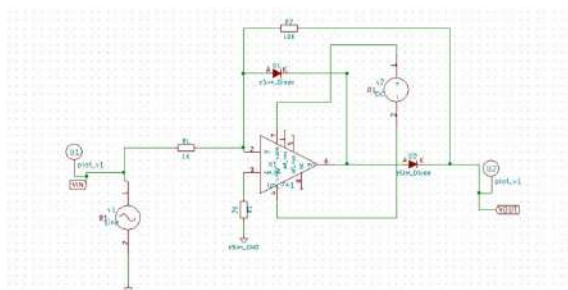**Circuit diagram:**

THEORY:
Combining the rectifying action of a diode with the accuracy of an op amp, this circuit creates a precision rectifier. During the negative half-cycle of a sinewave input, the output should be positive. ... The other simply keeps the op amp in control while the signal output holds at zero.only the positive-going portions of the output waveform, which correspond to the negative-going portions of the input signal, actually reach the output.
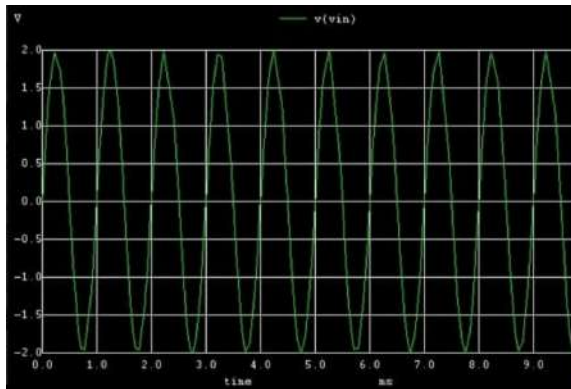
WORKING:
During the negative half-cycle of a sinewave input, the output should be positive. During the positive half-cycle, the output should be zero. The circuit that accomplishes this amazing feat looks like the inverting amplifier with a couple of diodes added. Why two? Only one actually does the rectifying action. The other simply keeps the op amp in control while the signal output holds at zero.

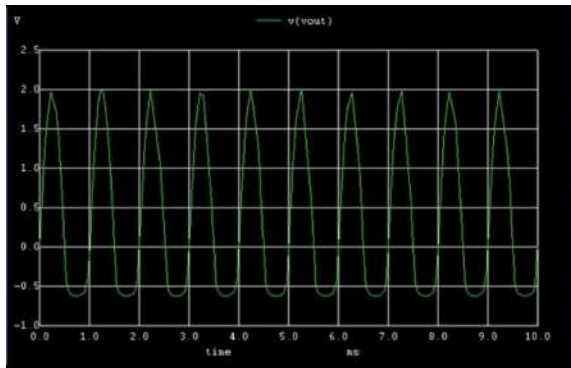For the negative half-cycle input, the op amp output goes positive forcing D1 to turn ON and D2 to shut OFF.
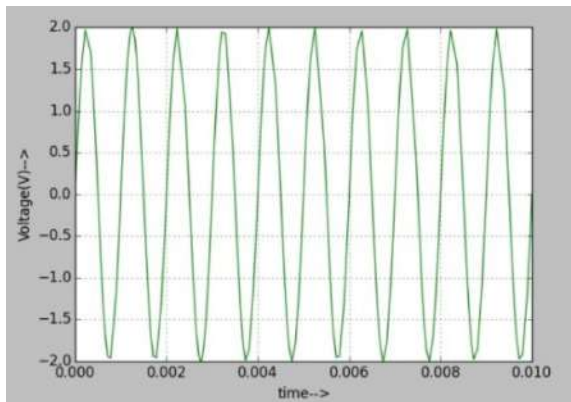
CIRCUIT DIAGRAM:
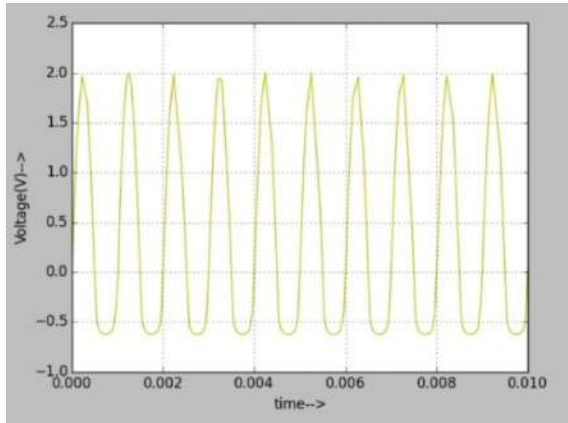
INPUT WAVEFORM:

OUTPUT WAVEFORM:

PHYTHON PLOT:

INPUT:

OUTPUT:

REFERENCE: **https://mycircuits9.blogspot.com/2012/08/precision-rectifiers-half-wave-and-full.html?m=1**