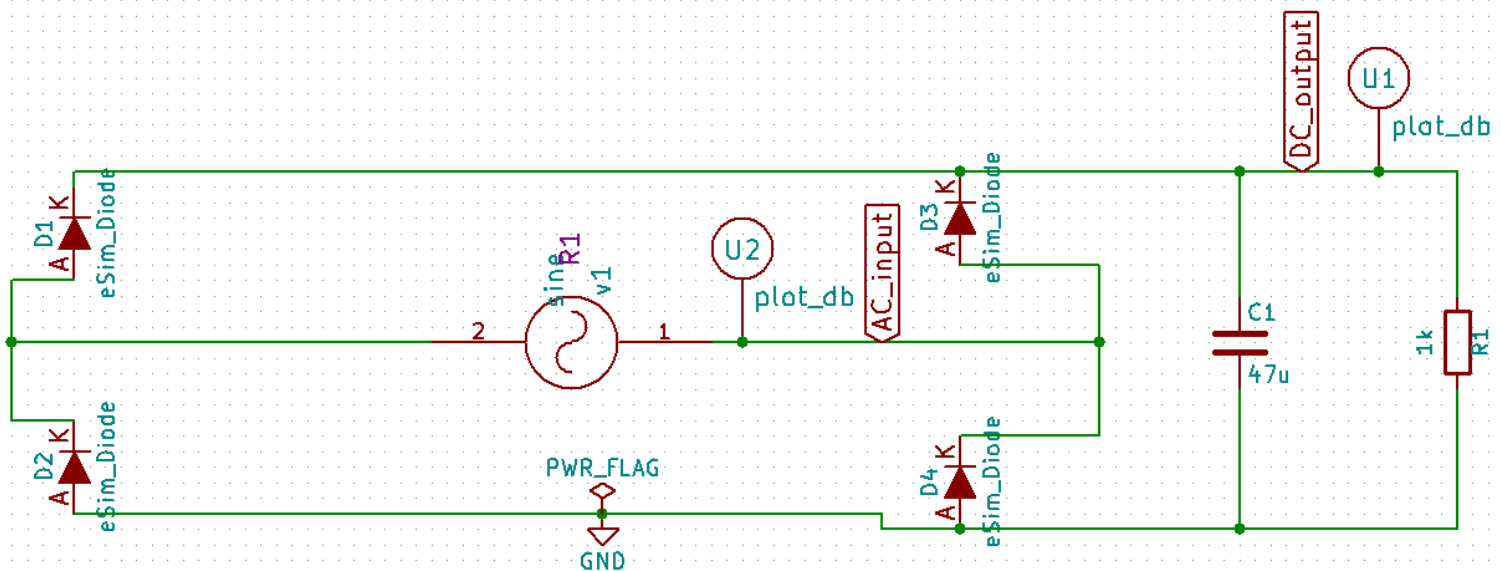# FULL WAVE RECTIFIER USING FILTER

THEORY

The main function of full wave rectifier is to convert an AC into DC. As the name implies, this rectifier rectifies both the half cycles of the i/p AC signal, but the DC signal acquired at the o/p still have some waves. To decrease these waves at the o/p this filter is used.
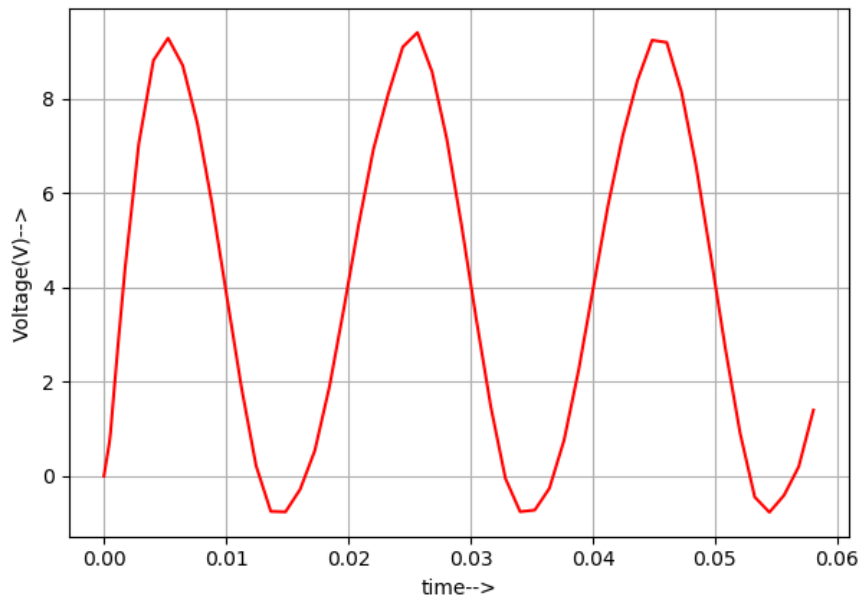
In the full wave rectifier circuit using a capacitor filter, the capacitor C is located across the RL load resistor. The working of this rectifier is almost the same as a half wave rectifier. The only dissimilarity is half wave rectifier has just one-half cycles (positive or negative) whereas in full wave rectifier has two cycles (positive and negative). As excited voltage flows through the connection terminals of the capacitor it gets charged enough and the current is supplied to the load. The capacitor tends to charge enough until reaches the maximum value of the applied input wave. Once the maximum is reached then the voltage of the rectifier slowly gets degraded as well as the capacitor gets discharged. The degradation in the wave occurred is not complete it will just come down but the continuity is present because the next peak occurs simultaneously. Hence this phenomenon is in continuation and the output generated if there are any ripples in it the filter connected to it just removes it in order to make it smooth.
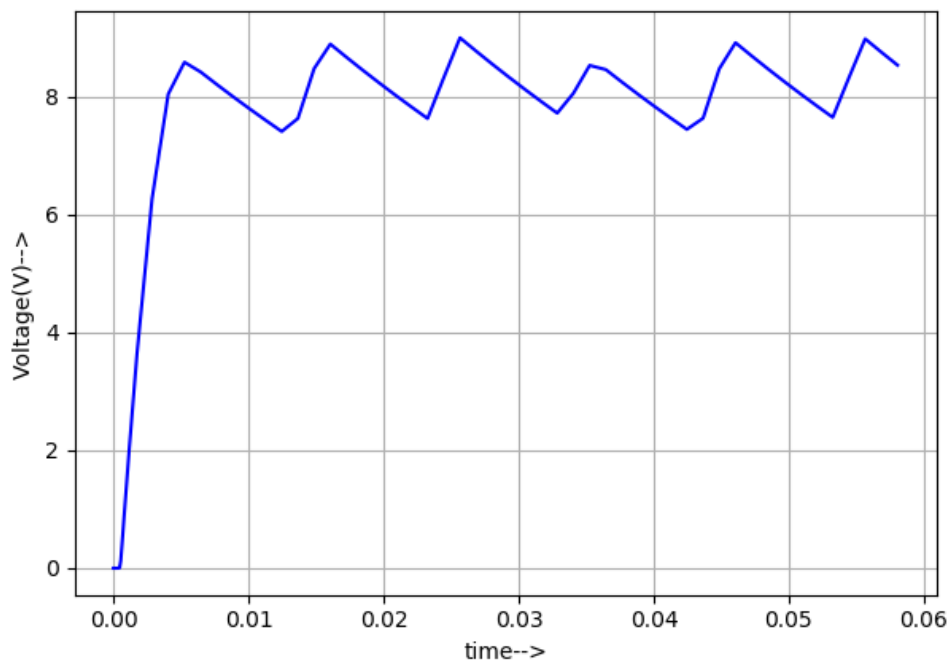
Schematic Diagram

The schematic diagram of the full wave rectifier is:

Input Python Plot:

Output Python Plot:

References:

https://www.elprocus.com/half-wave-and-full-wave-rectifier-with-capacitor-filter/