ALL-PASS FILTER USING OP-AMP

THEORY:

The All-Pass-Filter Design is one that passes all frequency components of the input signal without attenuation. Any ordinary wire can be used to perform this characteristic but the most important factor in an all-pass filter is that it provides predictable phase shifts for different frequencies of the input signal. These filters are widely used in communications. For example, when signals are transmitted over transmission lines, such as telephone wires, from one point to another, they undergo a change in phase. All pass filters are used to compensate for these phase changes. They are also called delay equalizers or phase correctors.

SCHEMATIC DIAGRAM:

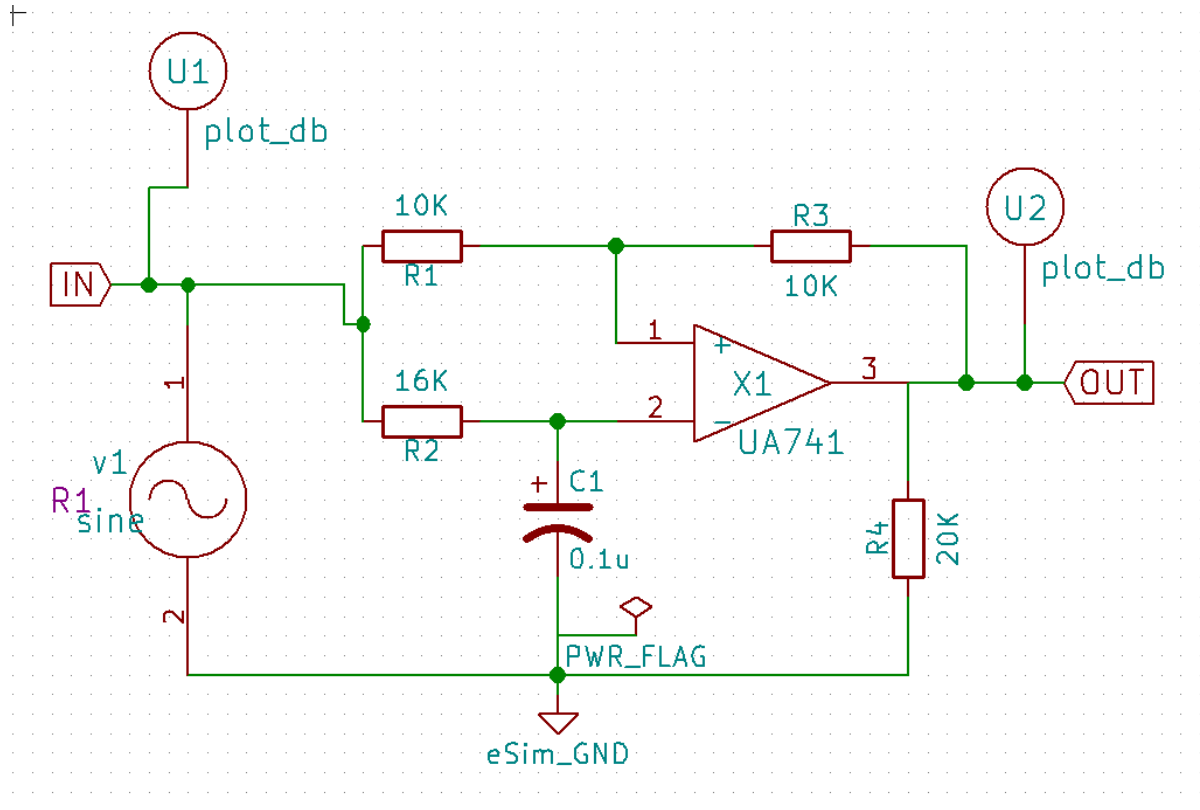The circuit schematic of All-Pass-Filter with op-amp in eSim is show in the figure below:

Figure 1: schematic diagram of All-Pass Filter with op-amp

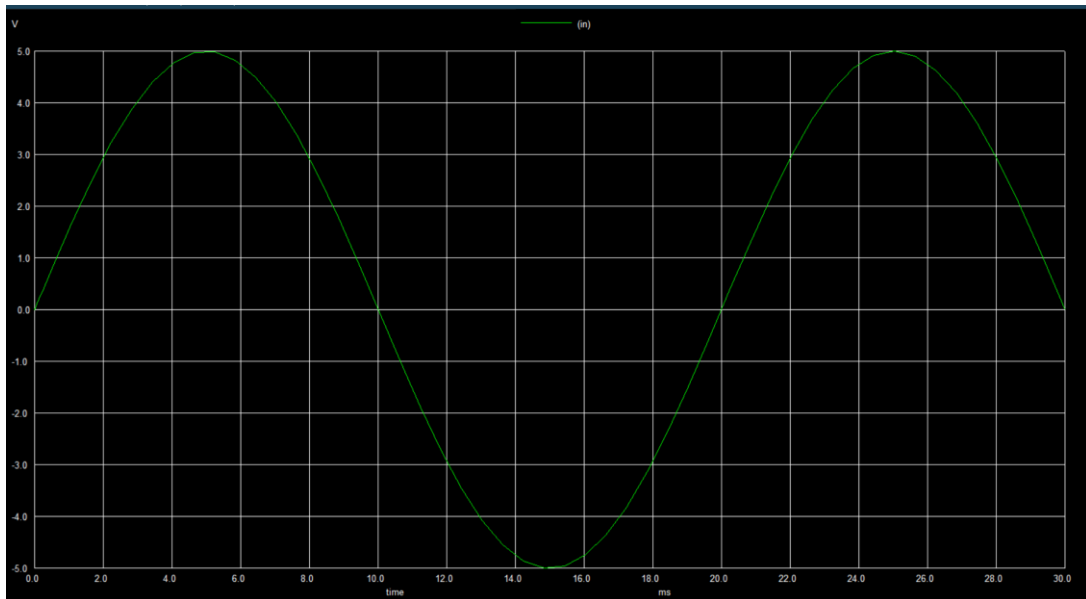**SIMULATION RESULT:**

1. NGSPICE PLOT:
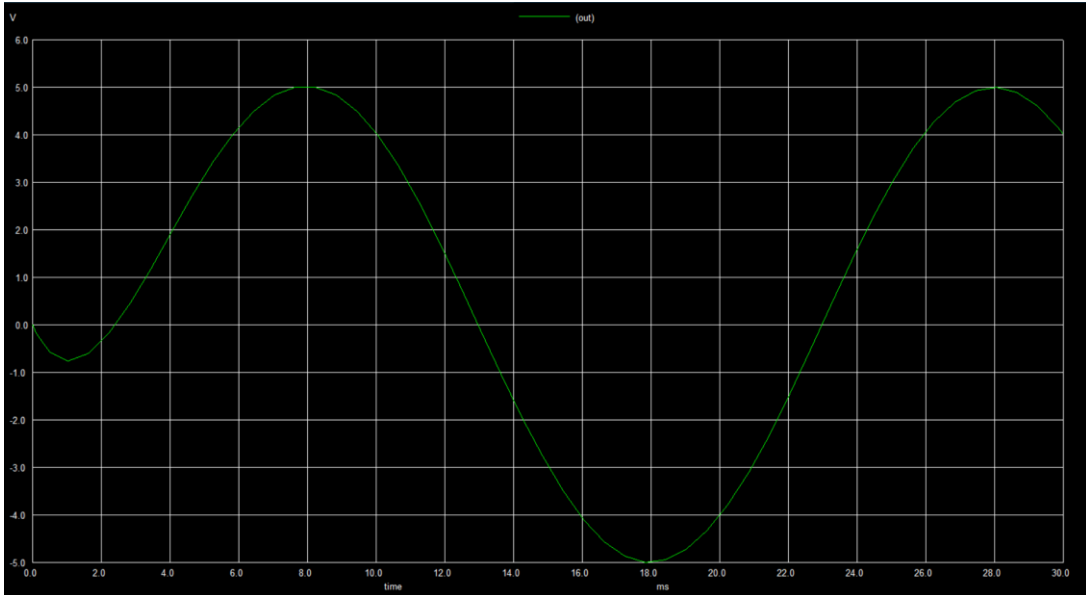

Figure 2: NgSpice input plot
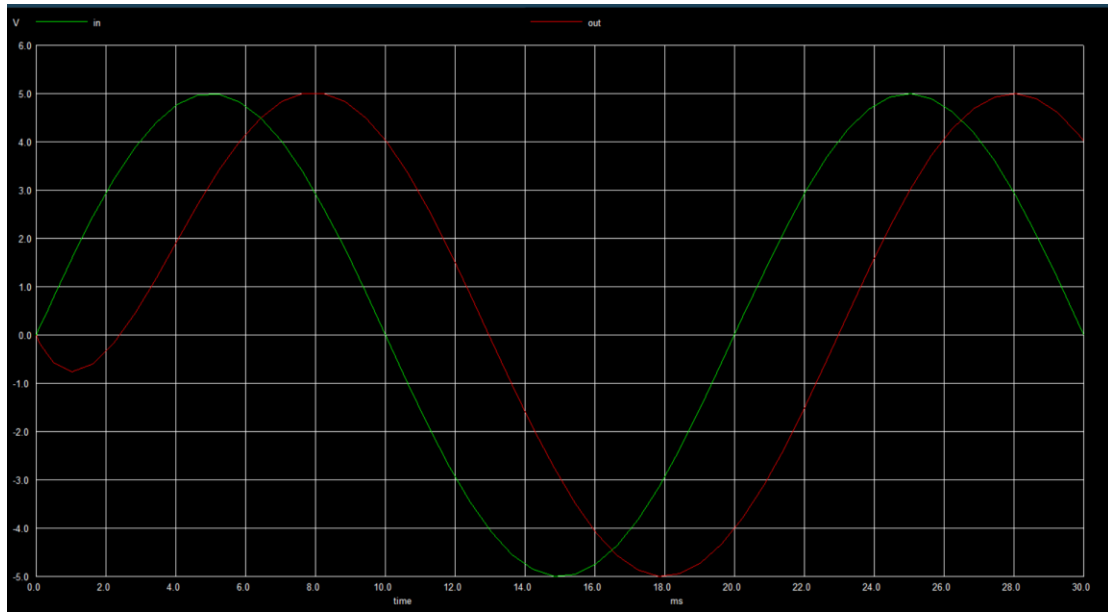

Figure 3: NgSpice output plot

Figure 4: NgSpice Change of phase between input and output plot
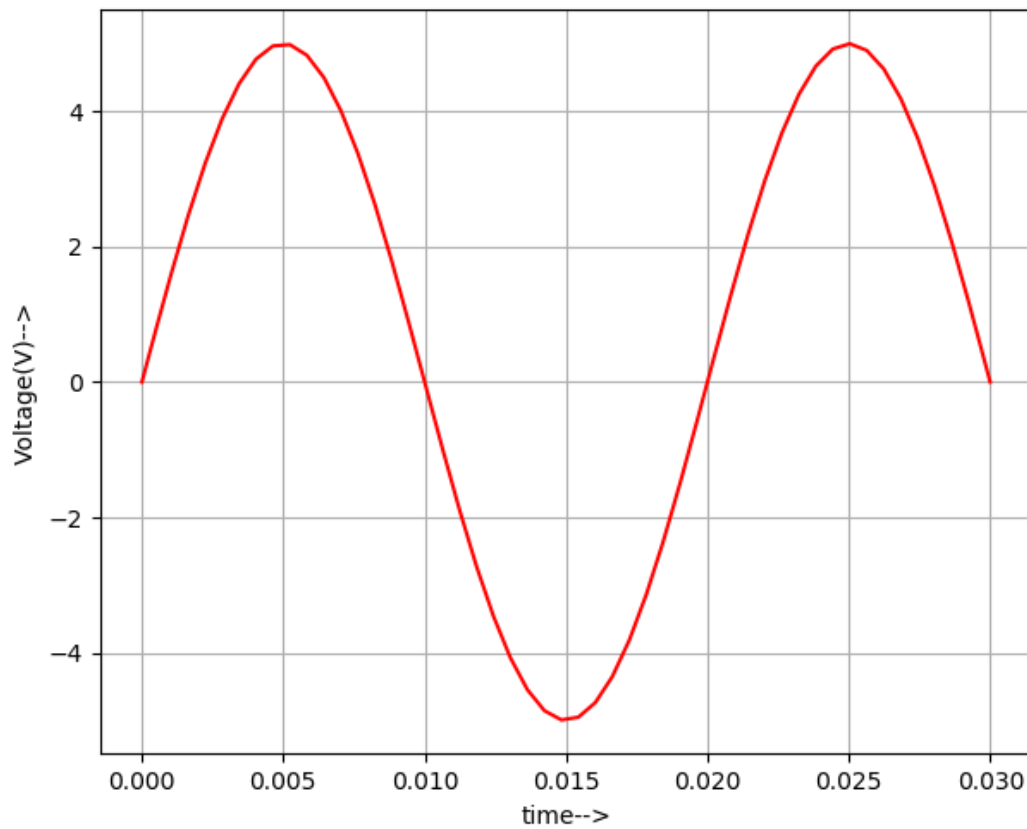
2. PYTHON PLOT:
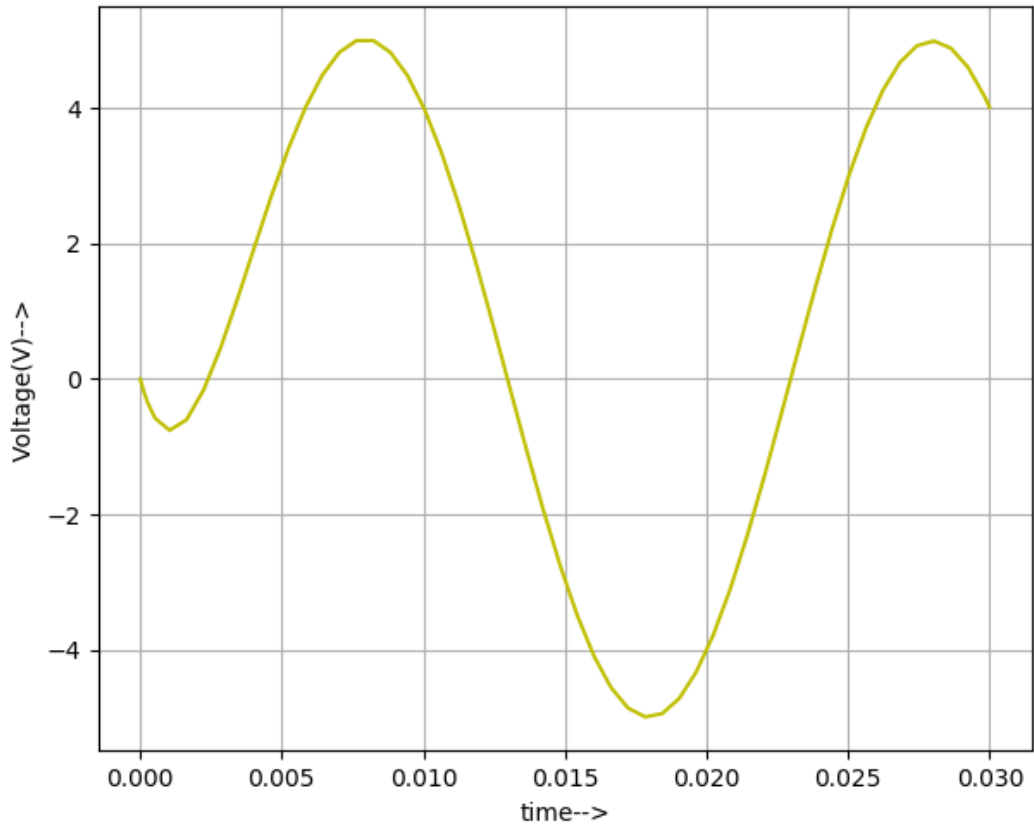

Figure 5: python input plot
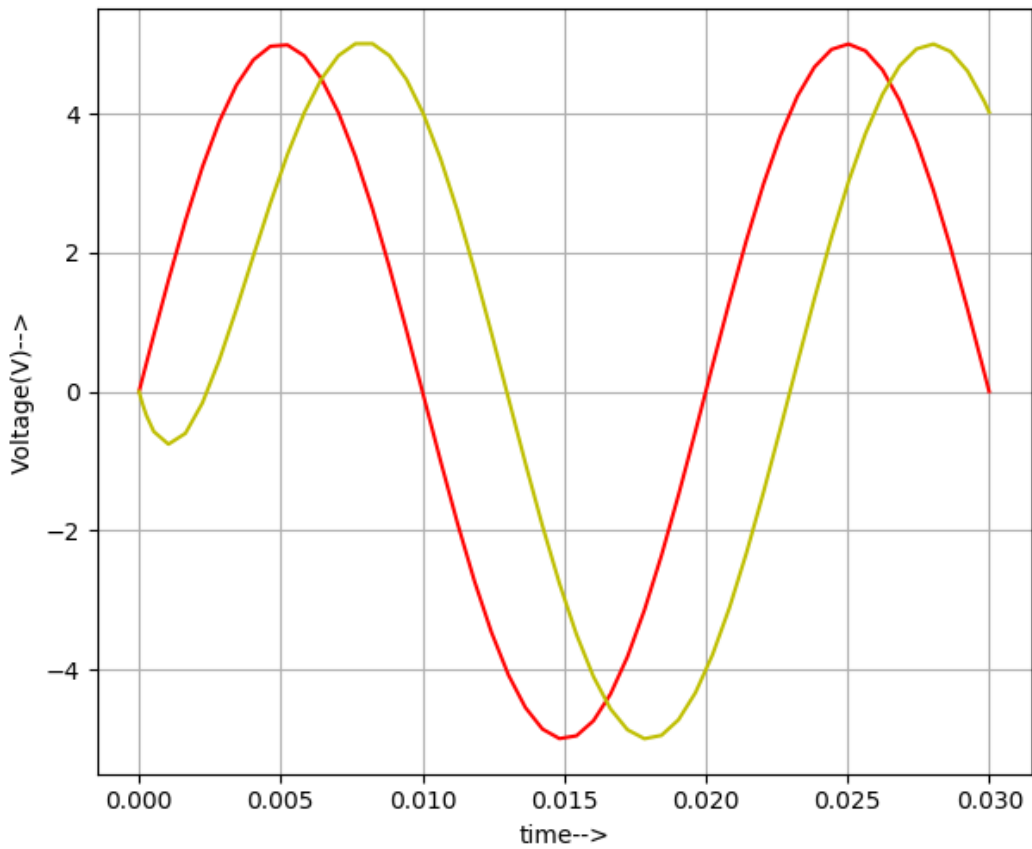
Figure 6: python output plot

Figure 7: python Change of phase between input and output plot

Reference(s) :

https://www.circuitstoday.com/all-pass-filters