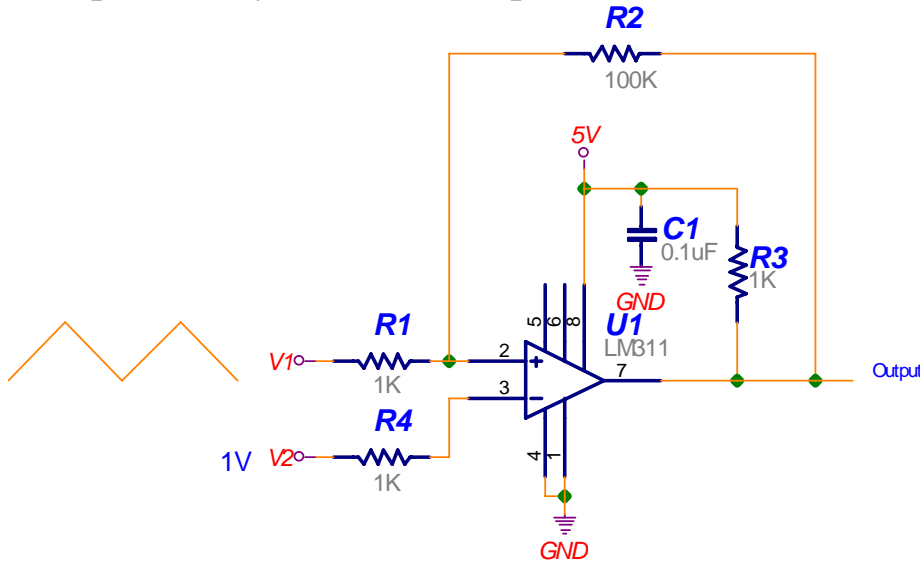


Comparator Hysteresis Example:



Like the demo done in class V1 is a ramp signal provided by the function generator. The ramp goes between 0 & 4V. V2 is a constant 1V therefore the inverting input is a constant 1V. A small portion of the output is fed back to the positive input to keep the output from oscillating when V1 and V2 are at the same voltage.

Initially V1 is at zero volts so the output is zero. Because the output is zero the voltage at pin 2 will be about 1% less than the ramp voltage at V1. This 1% comes from the ratio $R2/R1$. As the ramp voltage increases the voltage on pin 2 will increase. Once pin 2 reaches the same voltage as pin 3 the output will go high ($V1 = 1.01V$, pin 2 = 1V). Since part of the output is fed back to the input the voltage at pin 2 jumps from 1V to 1.05V (1% of the 5V output swing is fed back). This ensures that the inputs don't linger at the same voltage and keeps the output from oscillating. When the ramp is decreasing it must go to 0.96V for get pin 2 to reach 1V. The output then goes low causing pin 2 to jump from 1V to 0.95V (again, 1% of the 5V output swing is fed back).

