For Project 3 you will design and build a 4 bit flash converter. Your Final design should have a single input for an analog signal. The analog signal will vary from 0-5V. Your design should take the analog input and change it to a binary number that corresponds to the amplitude of the analog input.

To do this you will need to sample the analog signal, for this portion of the project you will use a LM339 comparator. Figure 1 is the circuit that you will use for sampling. From here you must design the logic circuit that will be needed to encode the output D0-D1 into a binary format. Your binary output will be reported via LEDs, Figure 2 shows an example of how to hook an LED to a Logic IC.

**NOTE:** Logic IC’s sink current better than source so your output should be active low: IE True = 0V and False = 5V.

Documentation:

Please have the instructor verify that the circuit works as described. The turn in any design documentation that you have written including truth tables, and k-maps. You will also need to turn in a circuit diagram of you finish project.