Homework #1

I/O pins are the microcontroller's connections to the outside world. It is through them that it can perceive the world or respond to a specific event or trigger an actuator.

In this experiment you will create a bar graph using a potentiometer and 4 LEDs. The value of the potentiometer can be read using the embedded analog to digital converter in the Arduino board. The value of potentiometer should be mapped to a LED array like the following: if the potentiometer value is between 0-25% no LED should be on, if it is between 25-50% one of them should turn on, if between 50-75% two of them should light up and if between 75-90% three of them and if it is higher than 90% all of them should be on. Note that by adjusting the potentiometer LEDs should turn on and off dynamically and accordingly.

Since the Arduino's ADC is 10-bit resolution ADC, a mapping is necessary to map it's value to the range of 0-100. This can be achieved by using "**map**" function from Arduino's core library (read more about this in the Arduino's API reference).

Components used in proteus:

SIMULINO UNO, POT-HG, LED-'desired color'

Good Luck

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