Lab 6 Pseudo Code

Set up:

- Set Port C 0-4 as outputs for LEDS
- Set Port C 5 as input for potentiometer
- Start with all LEDs off
- Set up A/D conversion
    o Select A/D channel (pin to be used) - ADMUX register
    o Select voltage reference- ADMUX register
    o Turn on power to the ADC - PRR register
    o Enable the ADC - ADCSRA register
    o Set the ADC result location- ADMUX register
    o Set the ADC conversion frequency- ADCSRA register
- Set up H-bridge/motor
    o Set Port D as outputs for motor controls
    o Set OCROA to low to be off to start
    o Set TRRR0A register to non inverting mode and fast PWN
    o Set prescaler to 64 with register TCCR0B

Main:

- Check position of potentiometer
- if voltage is between 0 and 2.5 V
    o motor moves backwards
    o motor speed varies from 50% speed at 0 V to 0% speed at 2.5 V
- if voltage is between 2.5 and 5V
    o motor moves forwards
    o motor speed varies from 0% speed at 2.5V and 50% speed at 5V
- if voltage is 2.5 V: motor is stopped
- Set which LED (out of 5) is on based on voltage:
    o Lowest Voltage(1V)= fast backward (LED 0)
    o Second voltage(2V)= slow backward (LED 1)
    o Middle voltage(3V)= stopped (LED 2)
    o Fourth Voltage(4V)=slow forward (LED 3)
    o Higher voltage(5V)= fast forward (LED 4)