

## ADC Lab

### Example1:

we want to display the corresponding ADC values in the Serial Monitor.  
Connect potentiometer of the kit as the following:

- Connect Pin1 to 5V of Arduino
- Connect Pin3 to GND of Arduino
- Connect Pin2 to PC0

Then display on serial monitor ADC results

`Serial.begin(9600)` used to open UART and set baud rate to 9600.

`Serial.println(reading)` to print ADC on serial monitor

Steps:

1. Initialize adc:
  - ✓ Make ADC Ref=VCC (AREF = AVcc)
  - ✓ Enable ADC
  - ✓ Set prescaler by 128 so  $Freq_{ADC} = \frac{16000000}{128} = 125000$
2. ADC Read function:
  - ✓ Select the corresponding channel 0~7.
  - ✓ Start single conversion by write '1' to ADSC.
  - ✓ Wait for conversion to complete.
  - ✓ Return ADC read value.
3. Main:
  1. Initialize ADC.
  2. Read adc value at PA0.

### Example2:

Do the same above using interrupt