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 $Feq_{ADC} = \frac{16000000}{128} = 125000$
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