임베디드컴퓨팅
Embedded Computing
(0009488)
Arduino Interfaces

2022년 2학기

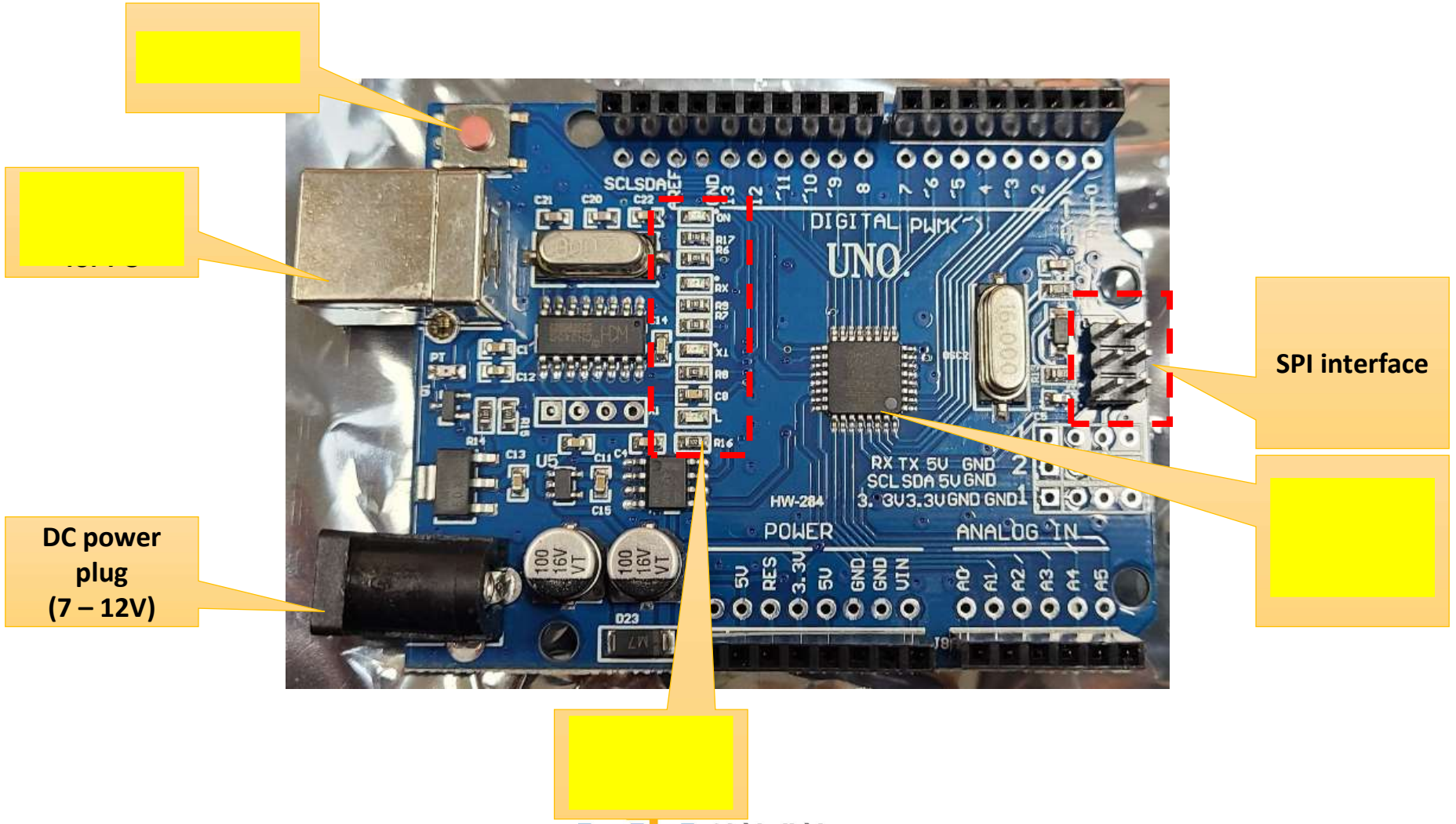
정보기술대학 정보통신공학과
김 영 필
ypkim@inu.ac.kr

인천대학교 INCHEON NATIONAL UNIVERSITY

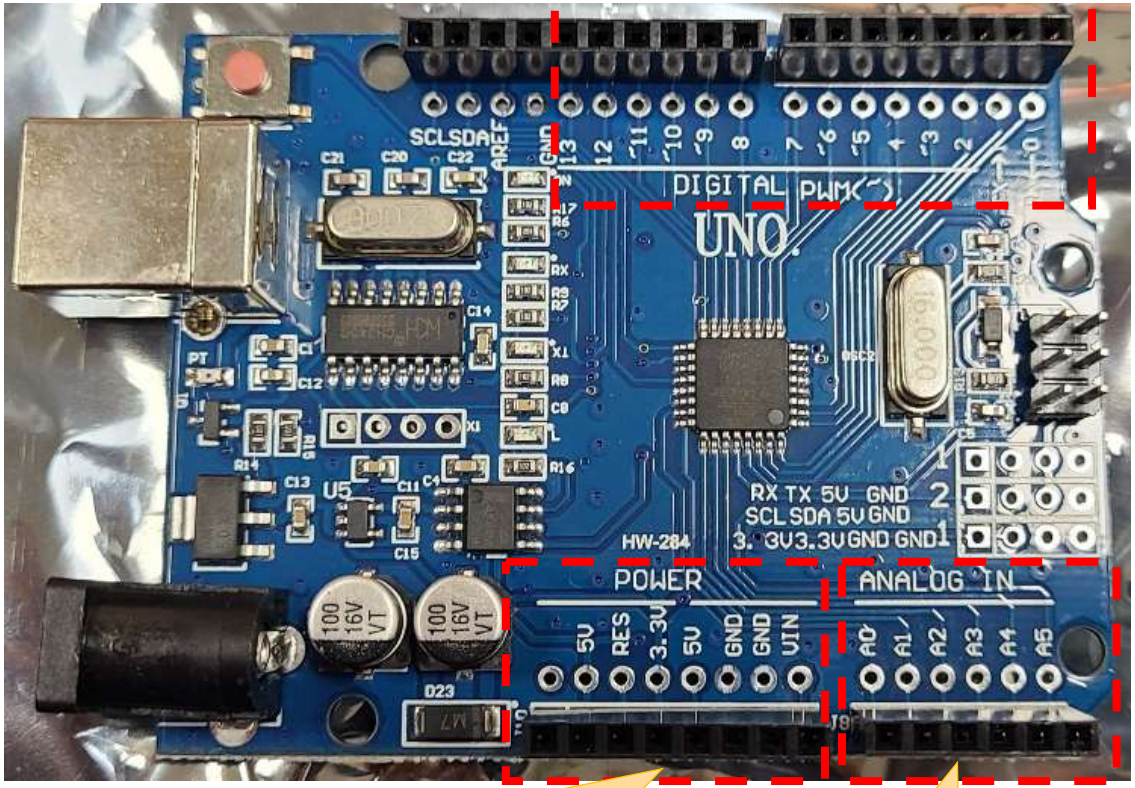
Contents

- Arduino H/W overview
- Arduino IDE overview

Interfaces to Arduino (uC board)

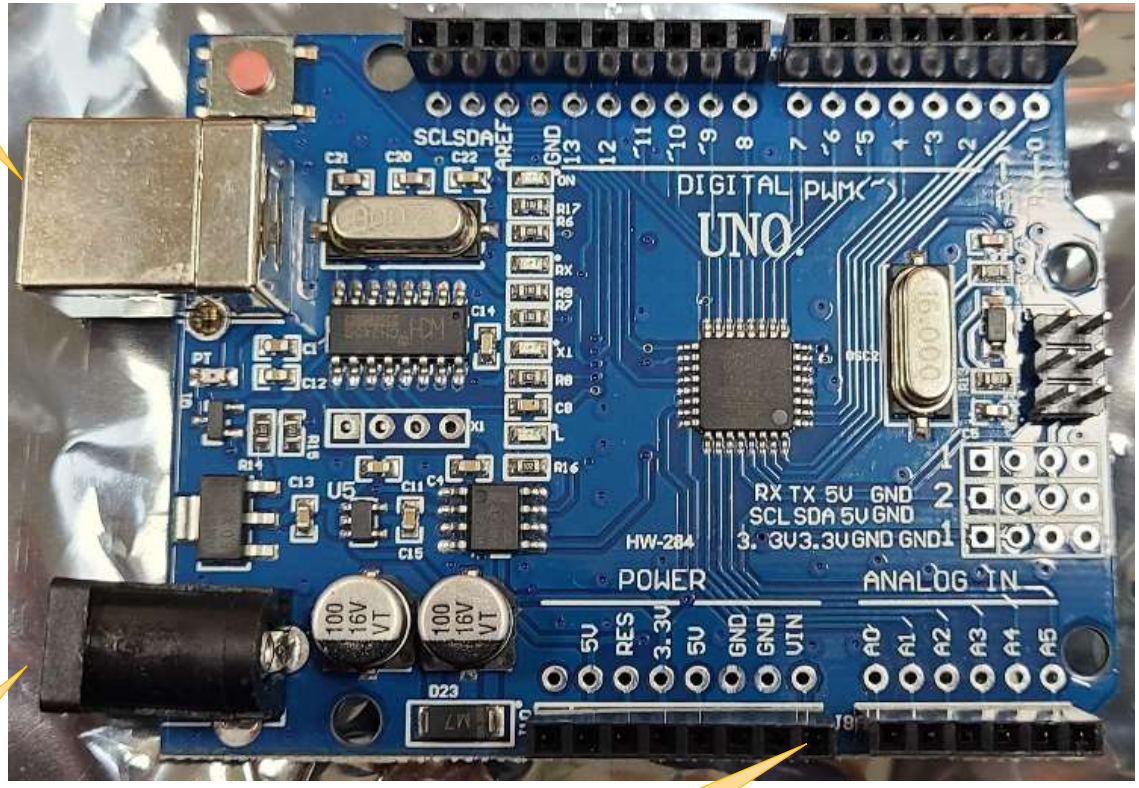


I/O pins


D0 – D13
(D0: RX, D1: TX)
DIGITAL (PWM~)
UNO
POWER
ANALOG IN
IOREF
RESET
3.3V
5V
GND
GND
VIN
A0
A1
A2
A3
A4
A5
IORef(5V), Reset, 3.3V, 5V, 2 x Ground, Other Voltage Input (7 - 12V)
A0 – A5

Power connection ways

USB connector
(5V, 500mA)



DC power
connector
(7 – 12V)

Voltage input
(7 – 12V)

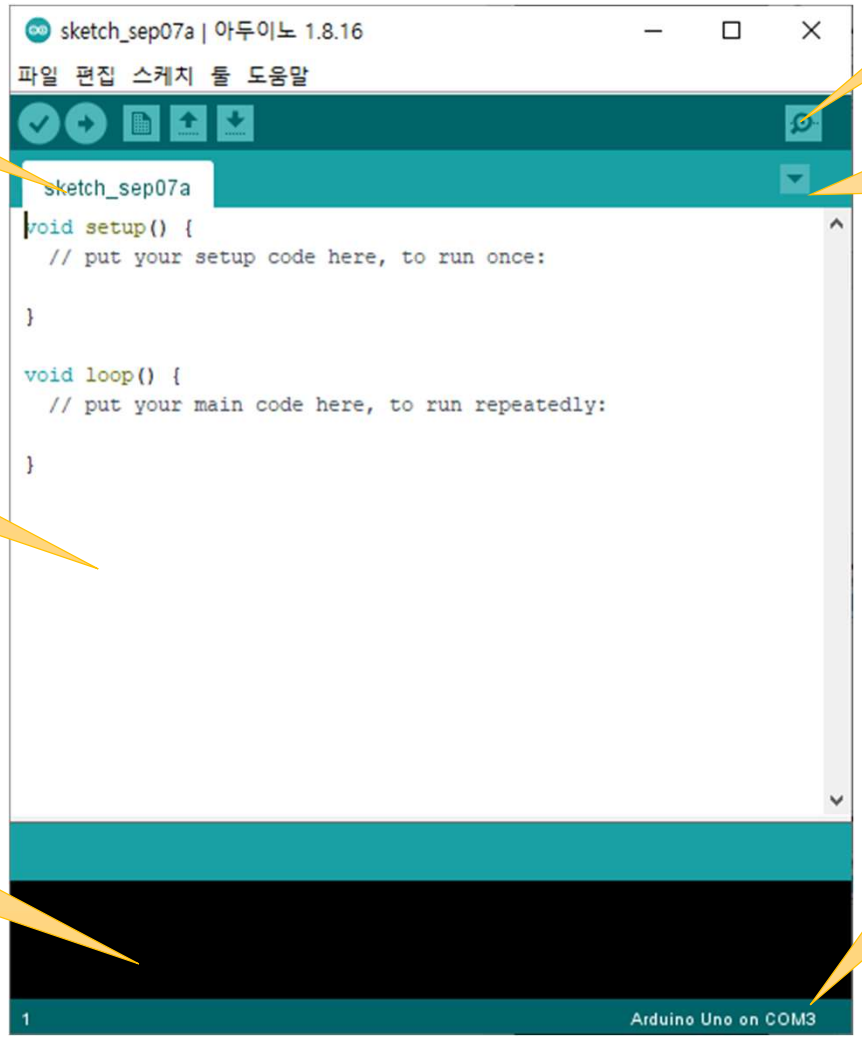
Essential H/W components

- Essential
  - Arduino uC board (Uno R3)
  - USB cables (type)
- Important
  - Jumper wires (wire cables or cables)
  - Standard bread board
- On demand
  - Input devices
    - Light, temperature, ultrasonic distance, infrared distance, switch, etc.
  - Output devices
    - LED, LCD, Speakers
  - Etc.
    - Resistor, variable resistor

Arduino IDE

- Can download IDE from https://www.arduino.cc/en/software
- This course is based on Windows OS
  - Support Linux and Mac OS, also.
- Choose a recent stable version, and install it!

User Interfaces of IDE



Name of sketch
E.g. sketch_****

see data via USB connection
(D0, D1 are used)

Tab button

Text Editor

Text Console

Target serial port

USB-to-serial for Arduino device driver installation

- To use USB-to-serial communication, you need to install the device driver on the computer
- Check the port of device manager program
- If the port (COM & LPT) is already marked as Arduino Uno (COM#) or USB-SERIAL (COM#), so the driver is installed properly.
- If not, install the device driver, go to the drivers folder in the folder where the Arduino is installed. Double-click the **"Arduino.inf"** file to install
- Sometimes, installation may not be worked; then, refer this link.
  - In my Windows 10, I suffered the above problem, and I solved it by installation another driver (https://robojax.com/products.php?pid=133)
- Arduino is H/W, and technical documents are always available. Just google it!