

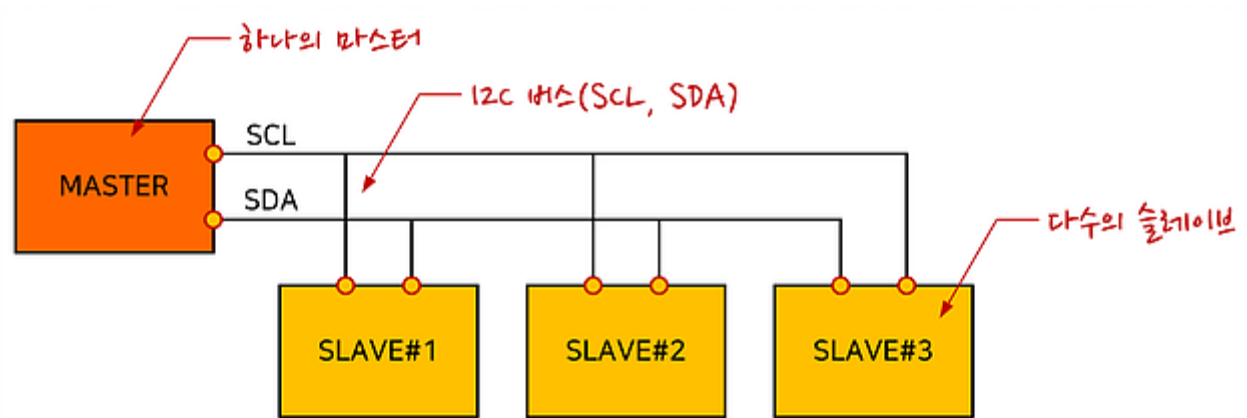
비접촉식 온도센서 실험

MLX90614

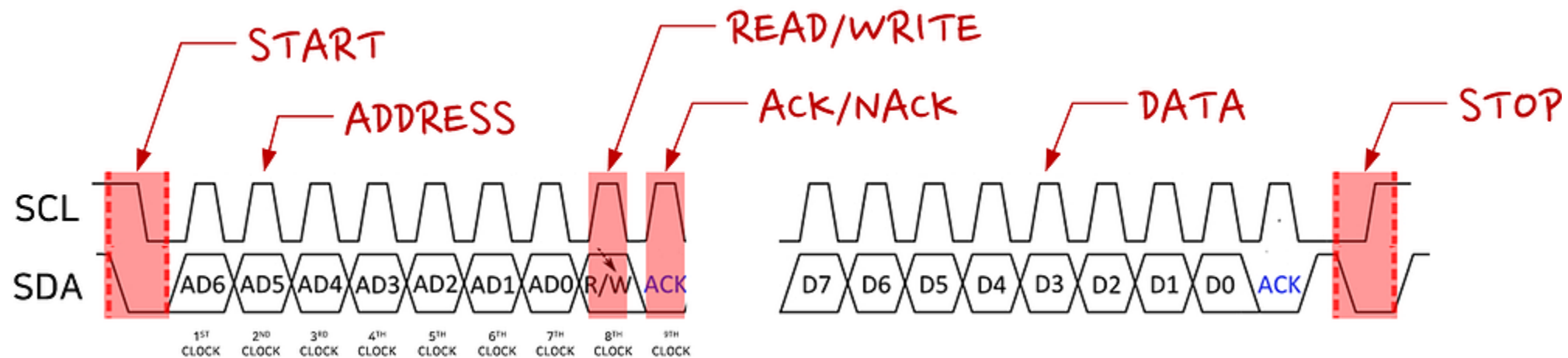
- 비접촉식 온도센서 모듈
- FOV 90°
- 측정범위 : -70°C ~ 380°C
- 인터페이스 : I2C



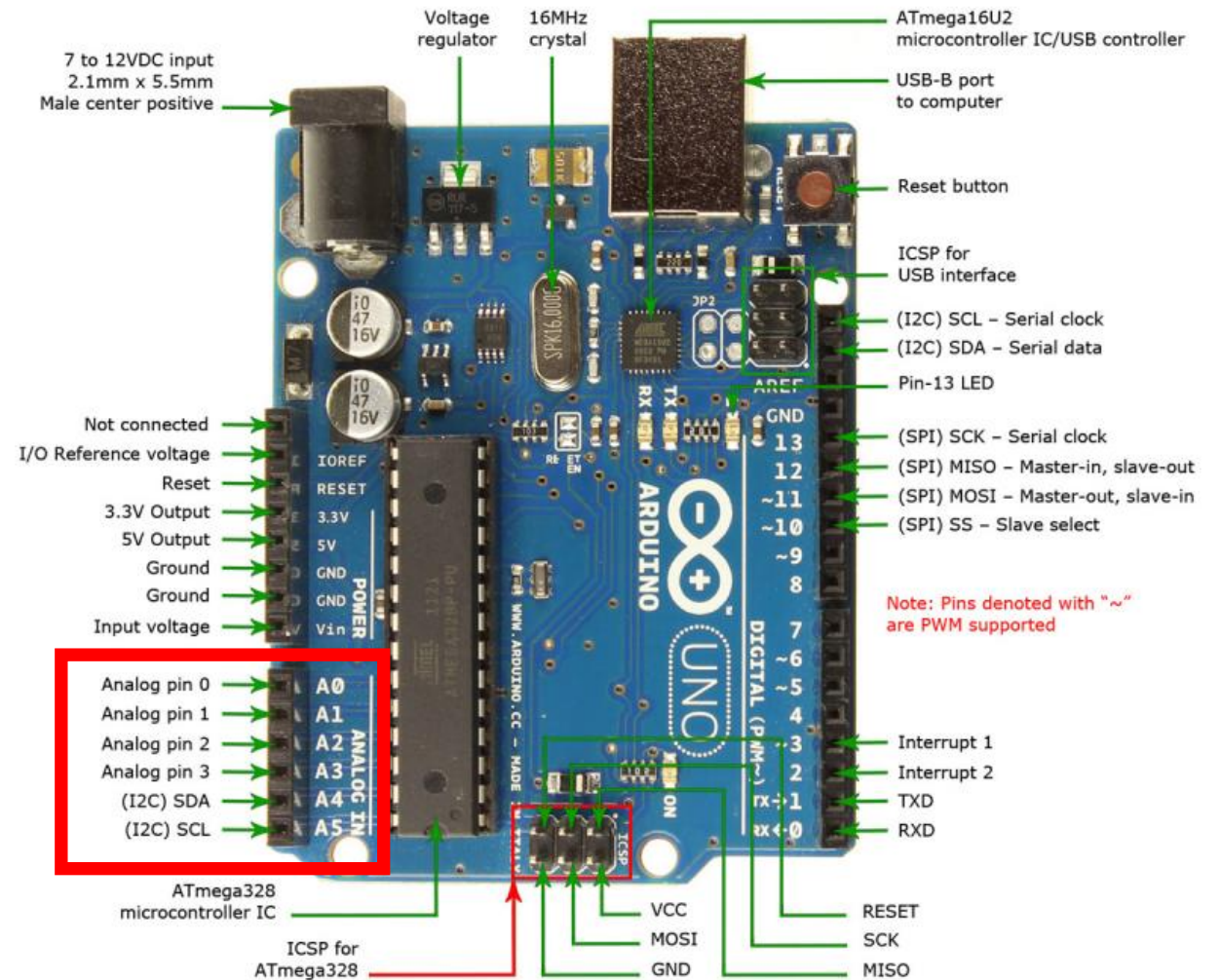
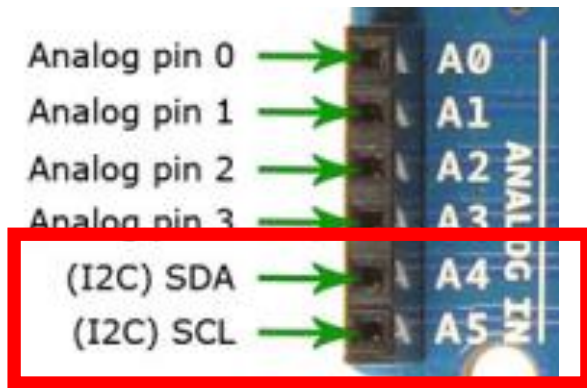
I2C 통신



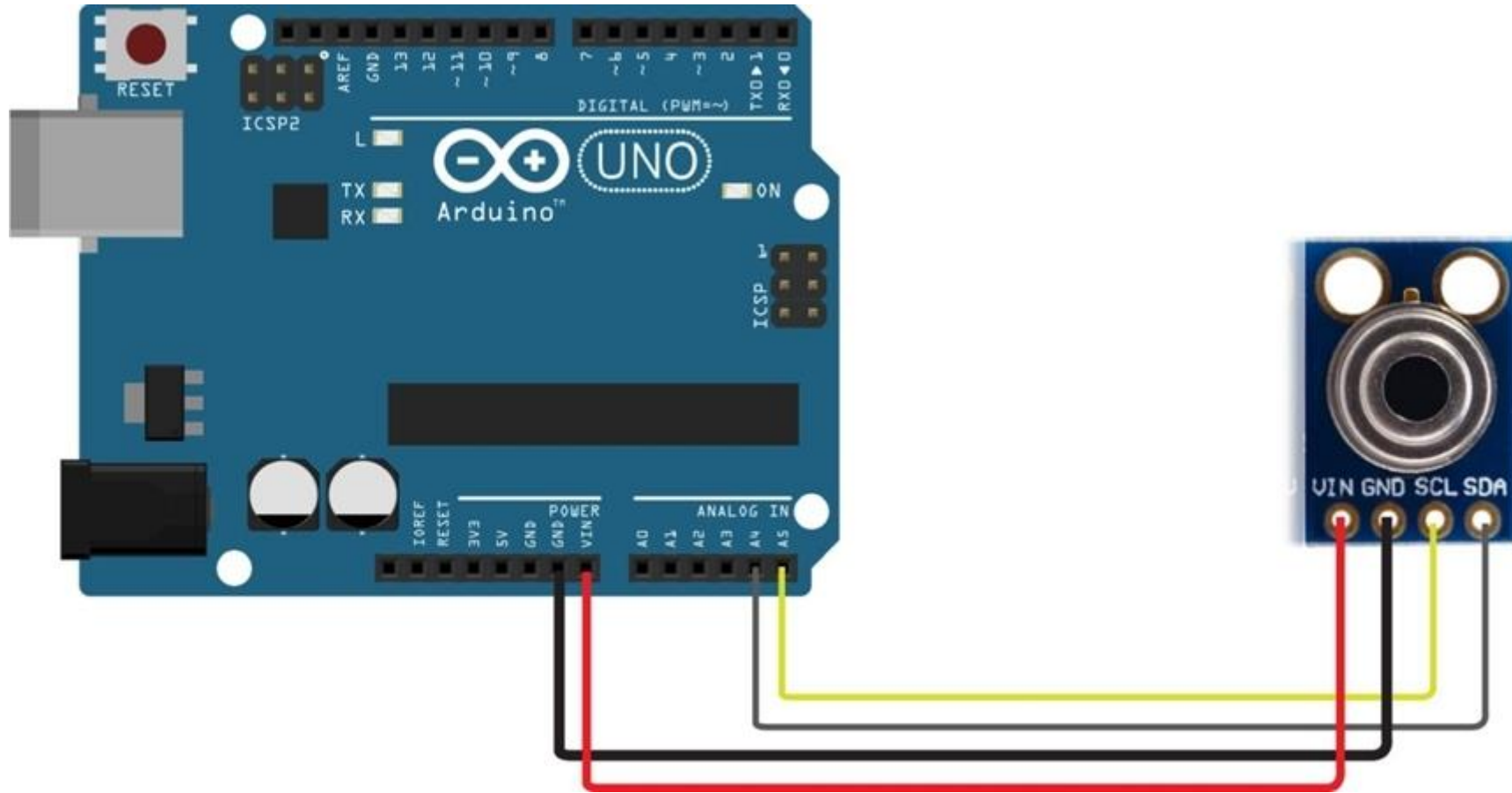
I2C 통신



아두이노의 I2C통신

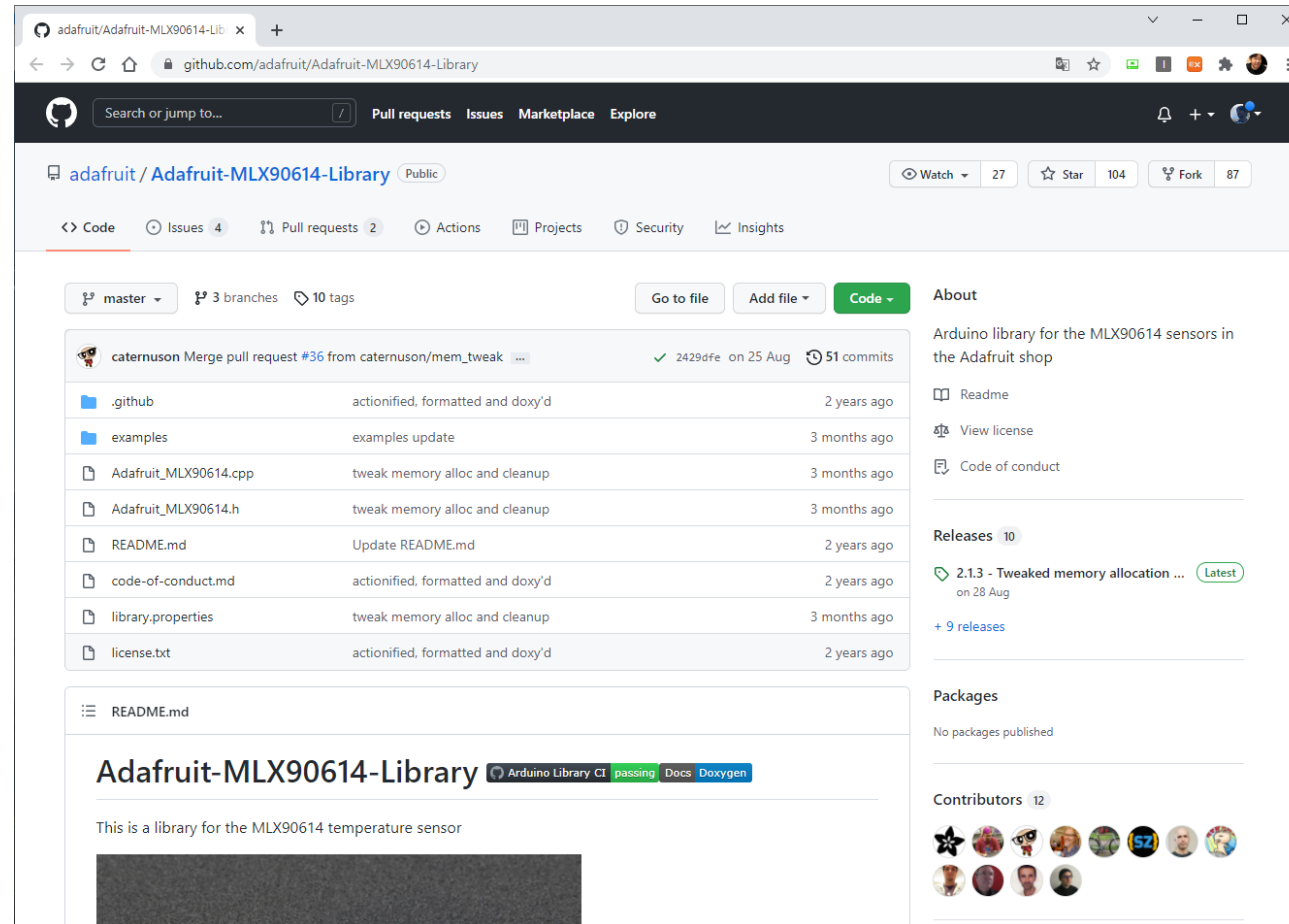


MLX90614 테스트



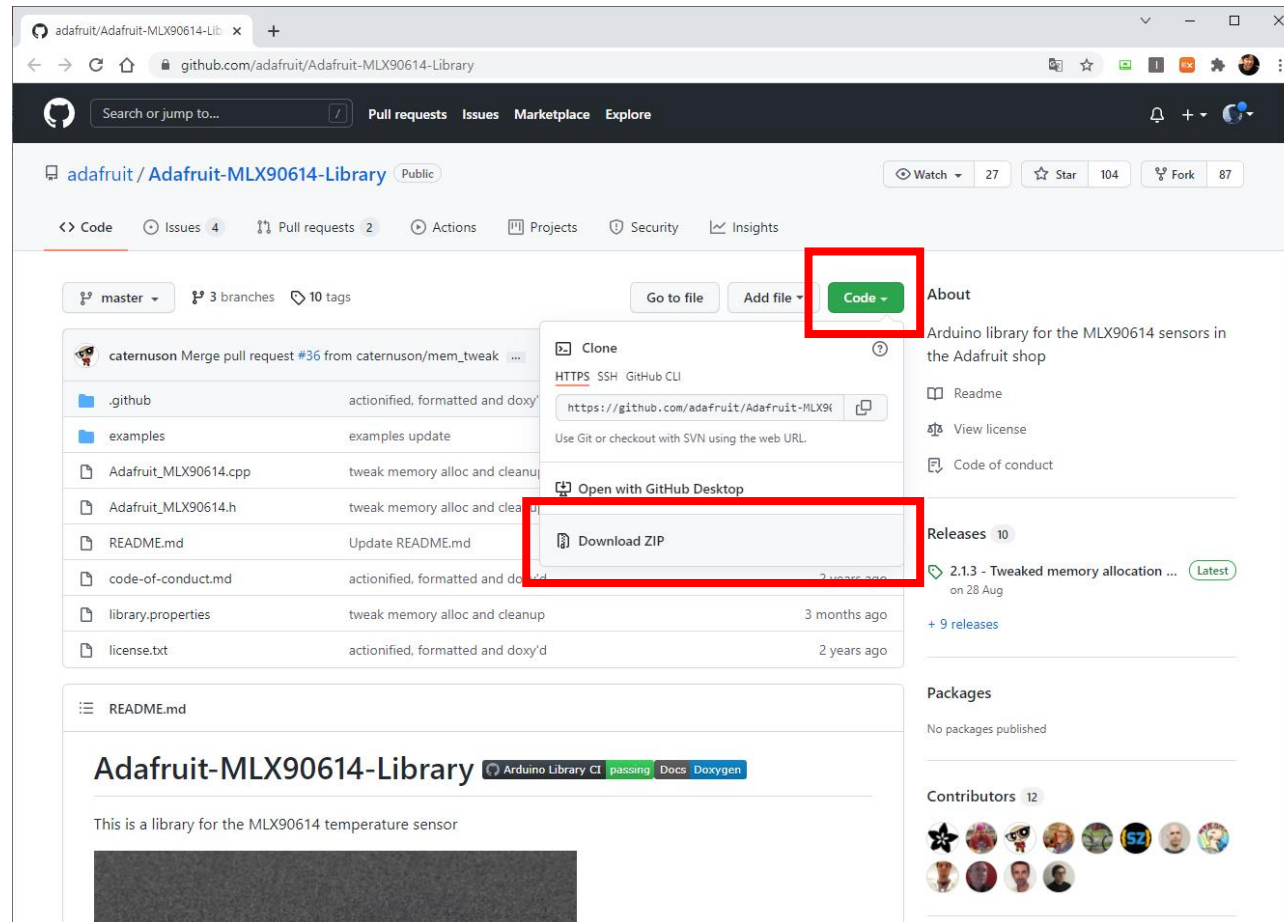
MLX90614 라이브러리 사용

- <https://github.com/adafruit/Adafruit-MLX90614-Library>

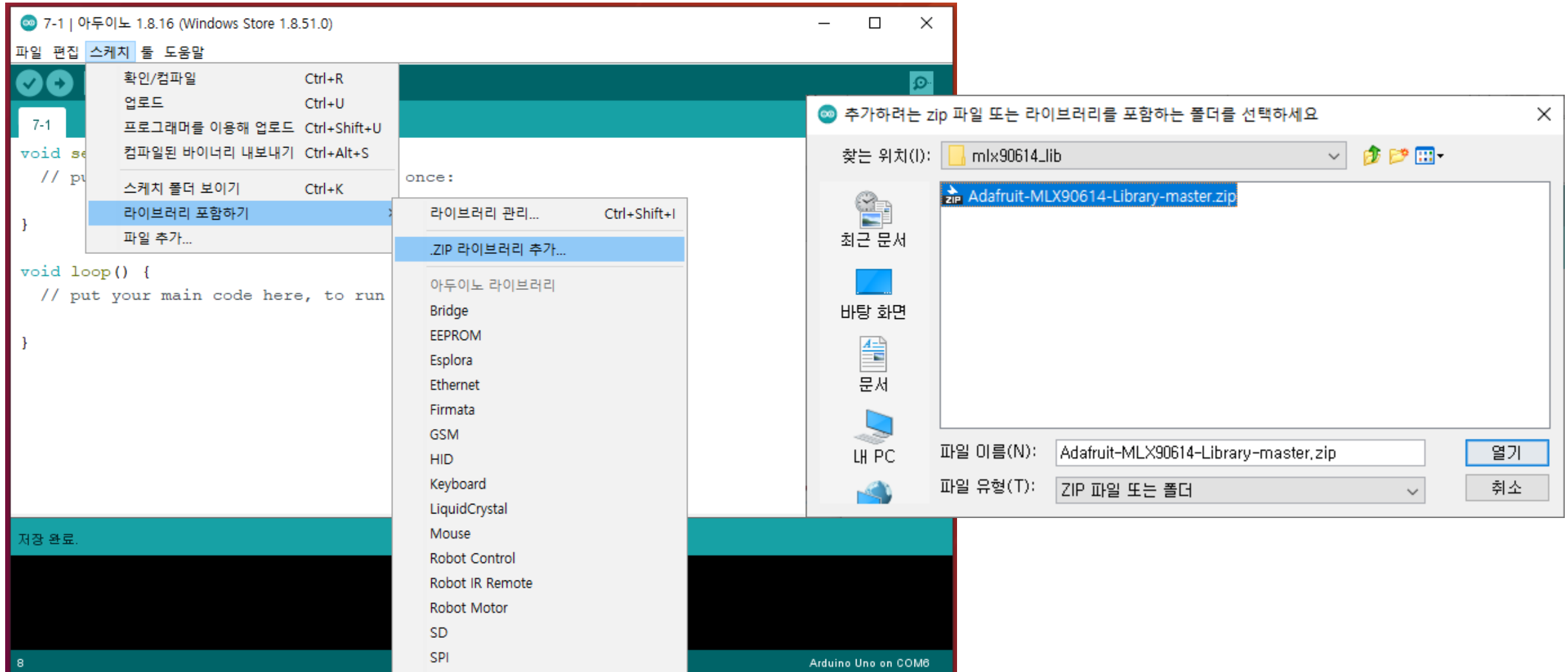


MLX90614 라이브러리 사용

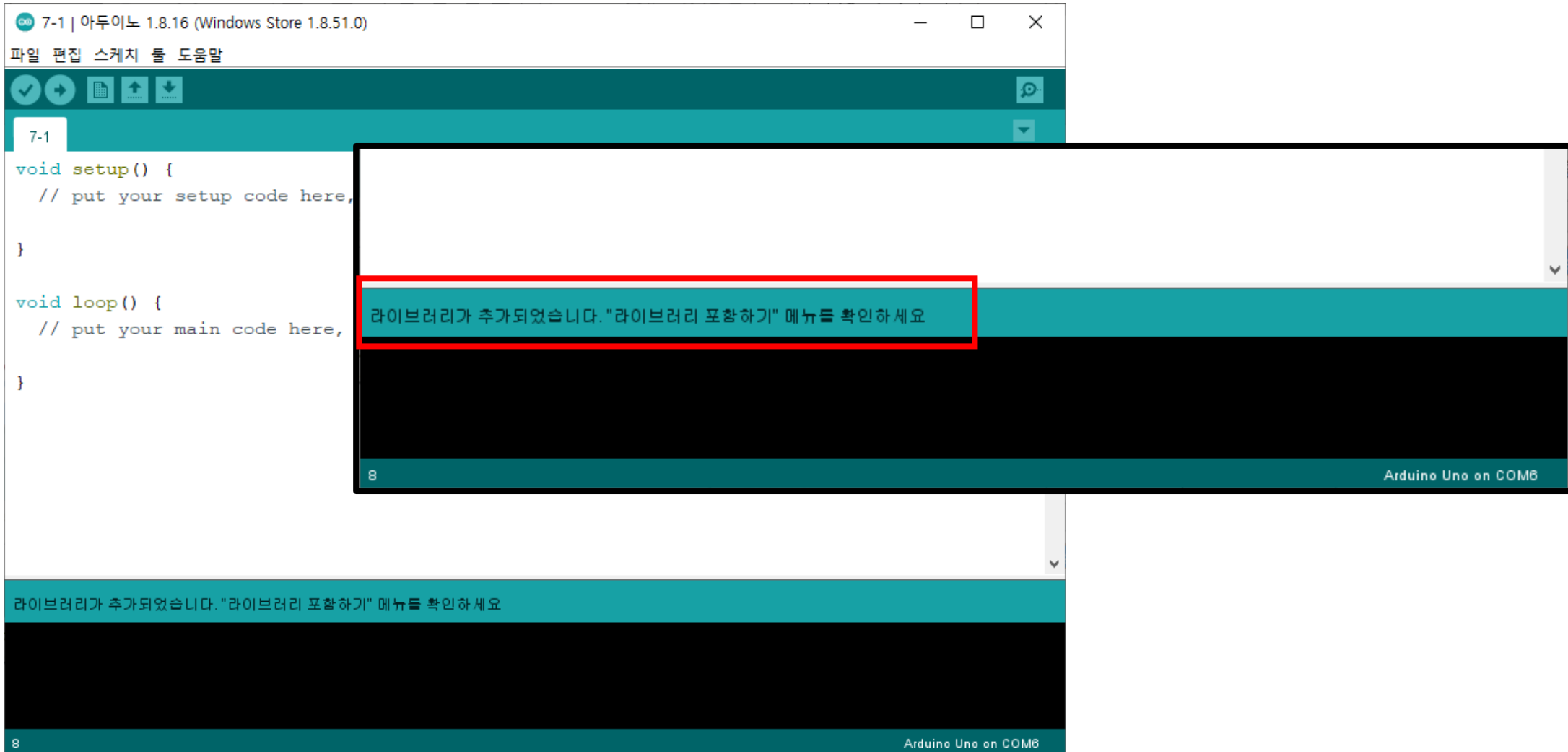
- <https://github.com/adafruit/Adafruit-MLX90614-Library>



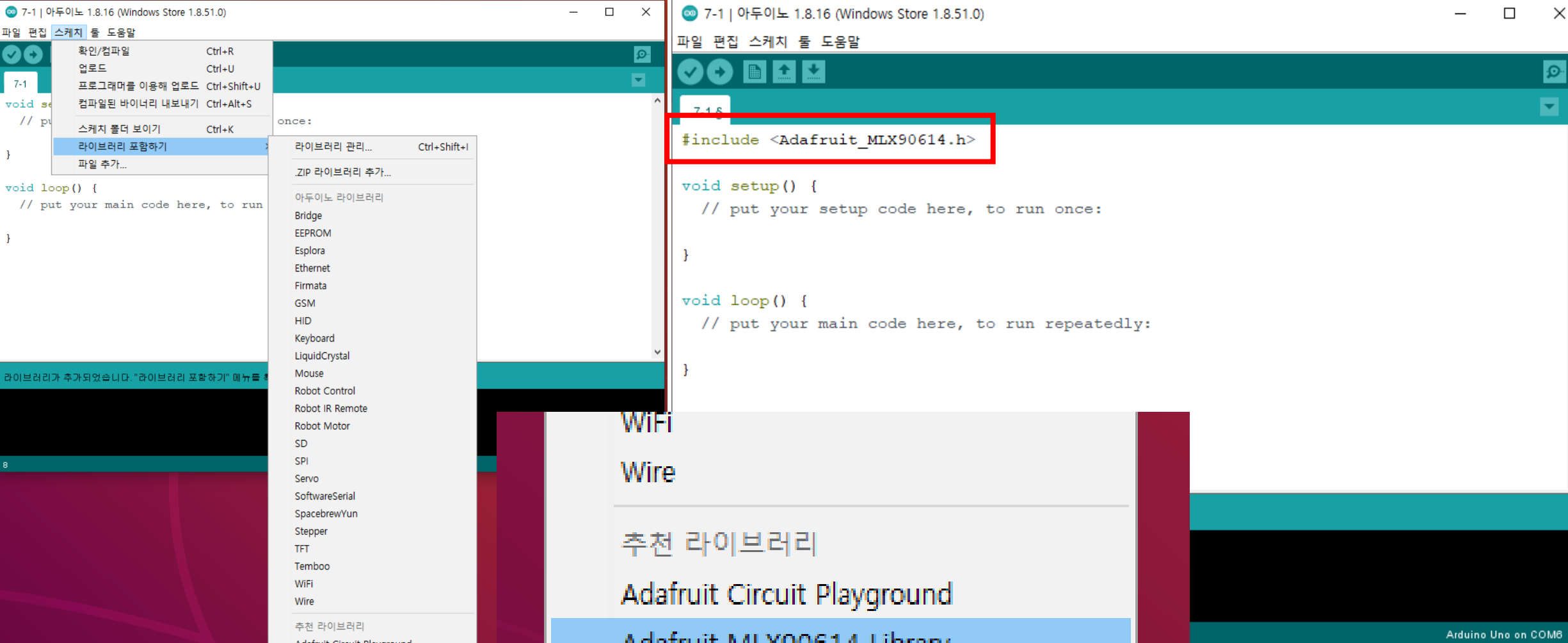
MLX90614 라이브러리 사용



MLX90614 라이브러리 사용



MLX90614 라이브러리 사용



The image shows the Arduino IDE interface with the 'Sketch' menu open. The 'Include Library' option is selected, and a list of libraries is displayed. The 'Adafruit MLX90614 Library' is highlighted. The code editor shows the following code:

```
#include <Adafruit_MLX90614.h>

void setup() {
  // put your setup code here, to run once:
}

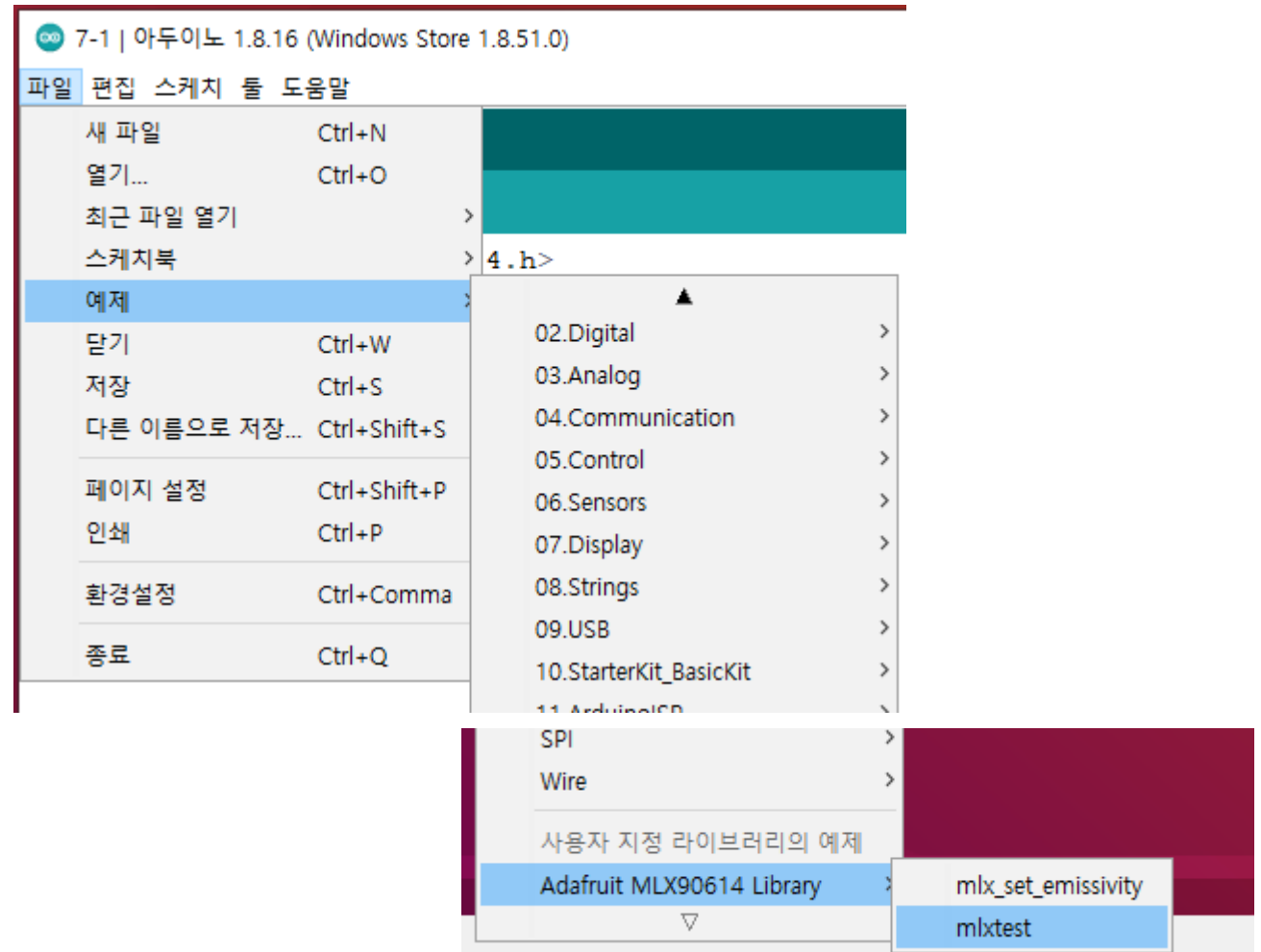
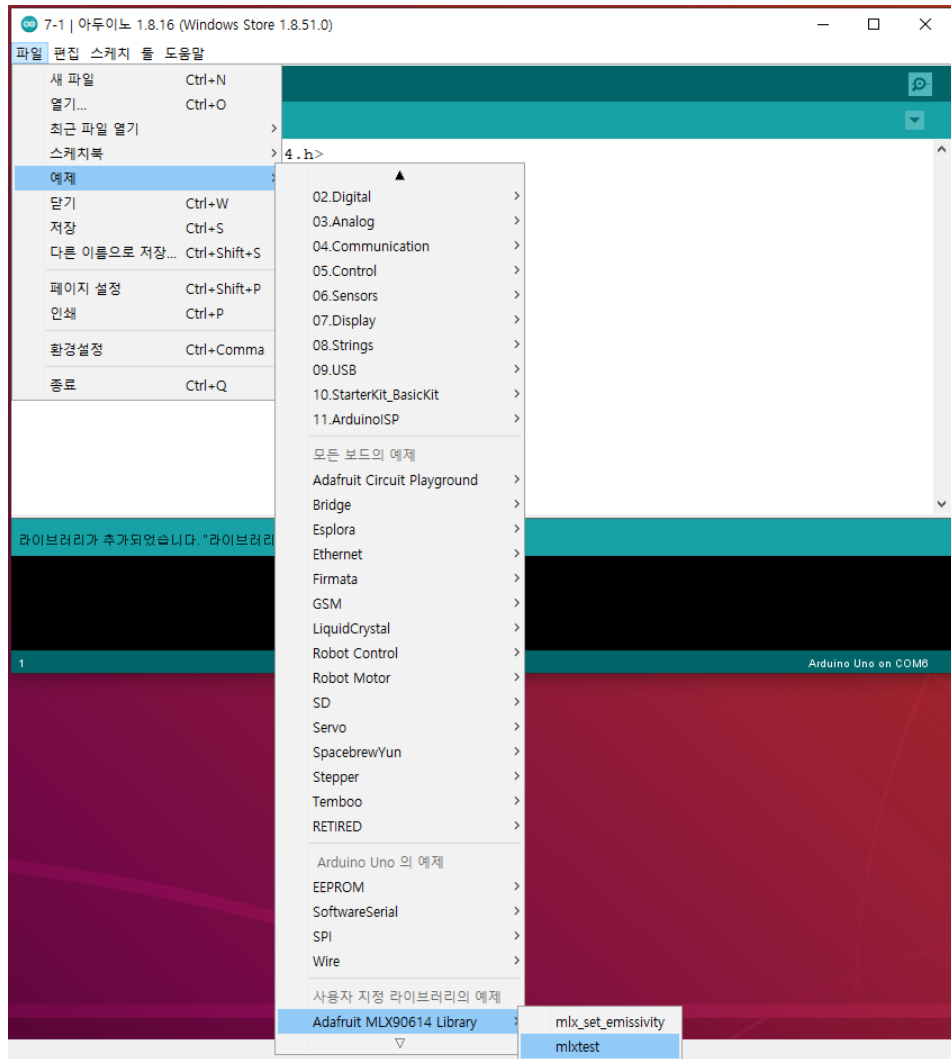
void loop() {
  // put your main code here, to run repeatedly:
}
```

Below the code editor, a list of recommended libraries is shown:

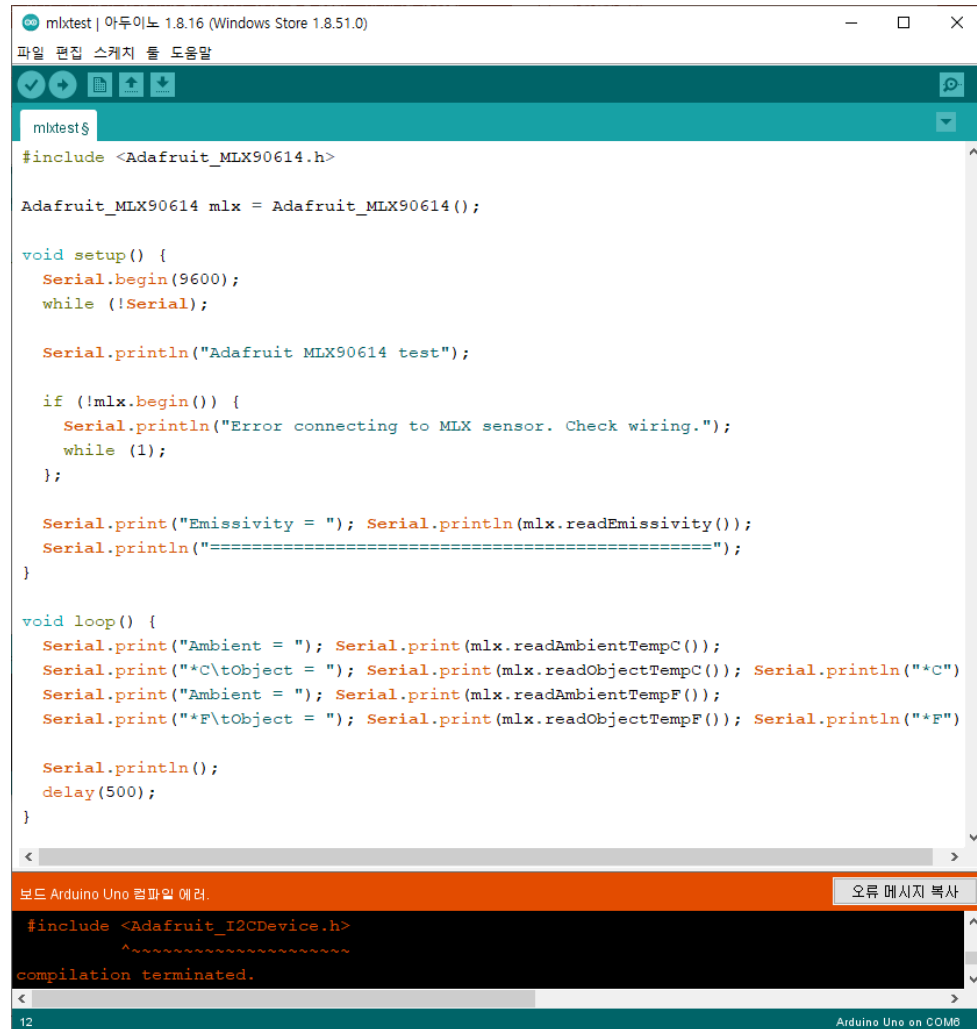
- WIFI
- Wire
- 추천 라이브러리
- Adafruit Circuit Playground
- Adafruit MLX90614 Library

The status bar at the bottom right indicates 'Arduino Uno on COM8'.

MLX90614 라이브러리 예제 테스트



MLX90614 라이브러리 예제 테스트



```
mlxtest | 아두이노 1.8.16 (Windows Store 1.8.51.0)
파일 편집 스케치 툴 도움말
mlxtest$
#include <Adafruit_MLX90614.h>

Adafruit_MLX90614 mlx = Adafruit_MLX90614();

void setup() {
  Serial.begin(9600);
  while (!Serial);

  Serial.println("Adafruit MLX90614 test");

  if (!mlx.begin()) {
    Serial.println("Error connecting to MLX sensor. Check wiring.");
    while (1);
  };

  Serial.print("Emissivity = "); Serial.println(mlx.readEmissivity());
  Serial.println("=====");
}

void loop() {
  Serial.print("Ambient = "); Serial.print(mlx.readAmbientTempC());
  Serial.print("C\tObject = "); Serial.print(mlx.readObjectTempC()); Serial.println("C");
  Serial.print("Ambient = "); Serial.print(mlx.readAmbientTempF());
  Serial.print("F\tObject = "); Serial.print(mlx.readObjectTempF()); Serial.println("F");

  Serial.println();
  delay(500);
}
```

보드 Arduino Uno 컴파일 에러. 오류 메시지 복사

```
#include <Adafruit_I2CDevice.h>
^~~~~~
compilation terminated.
```

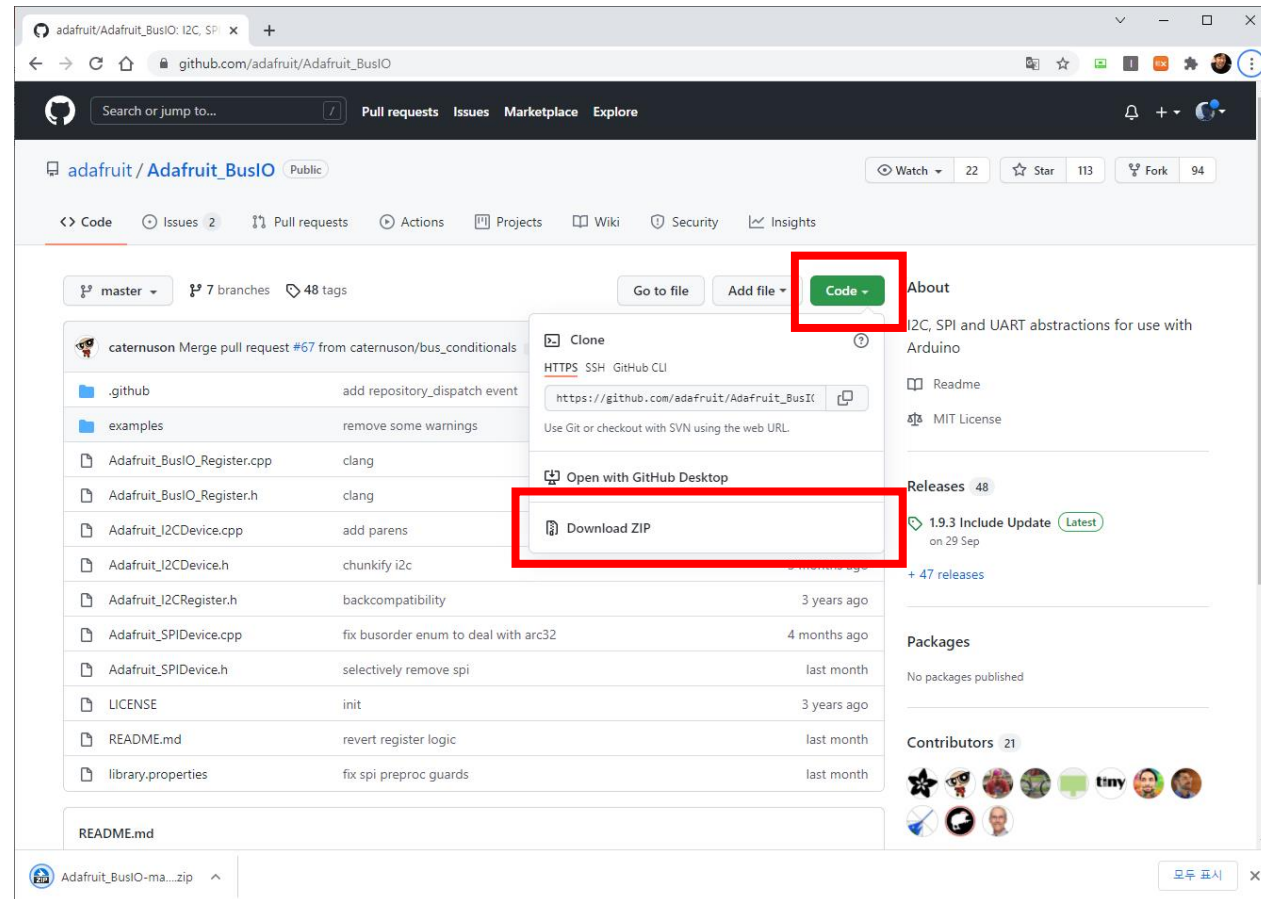
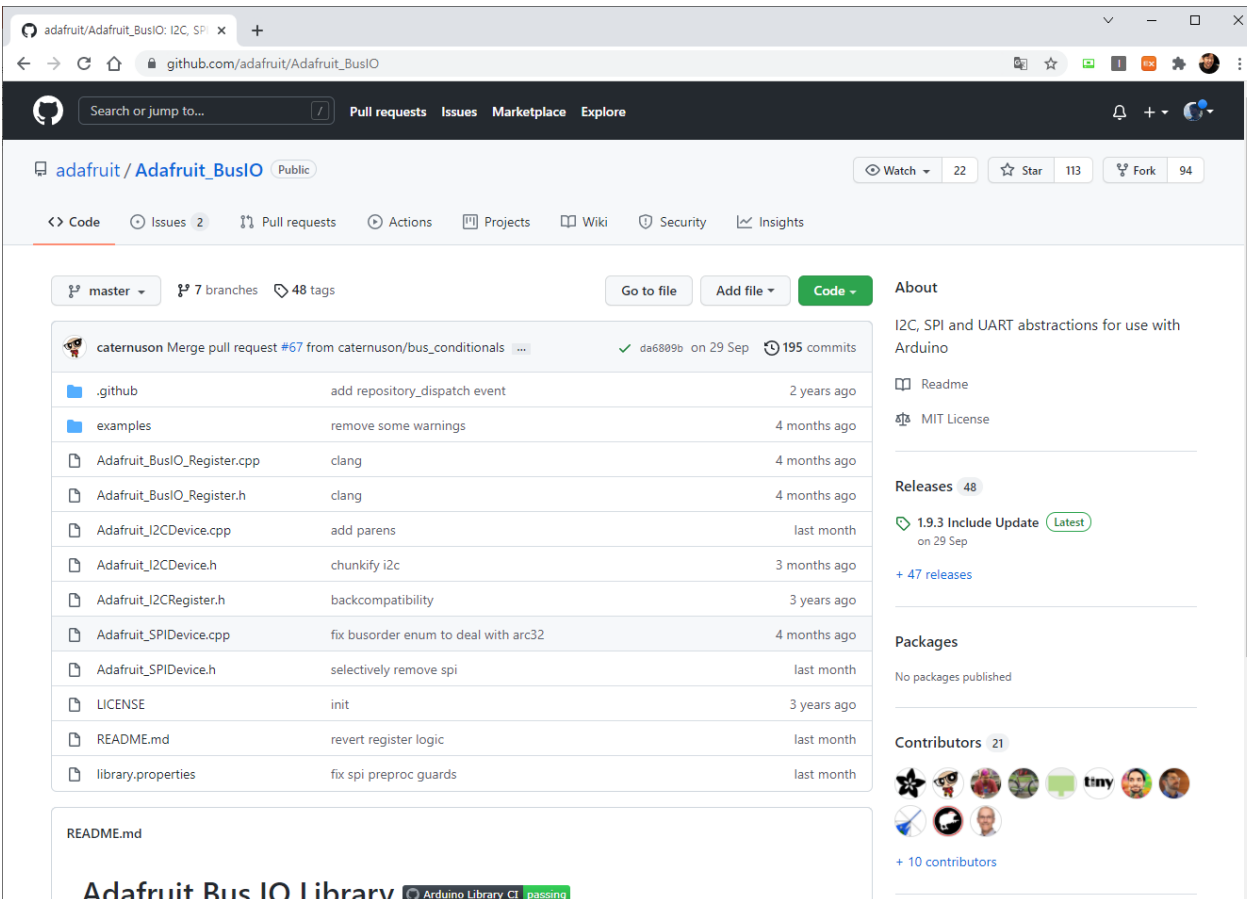
12 Arduino Uno on COM8

보드 Arduino Uno 컴파일 에러.

```
#include <Adafruit_I2CDevice.h>
^~~~~~
compilation terminated.
```

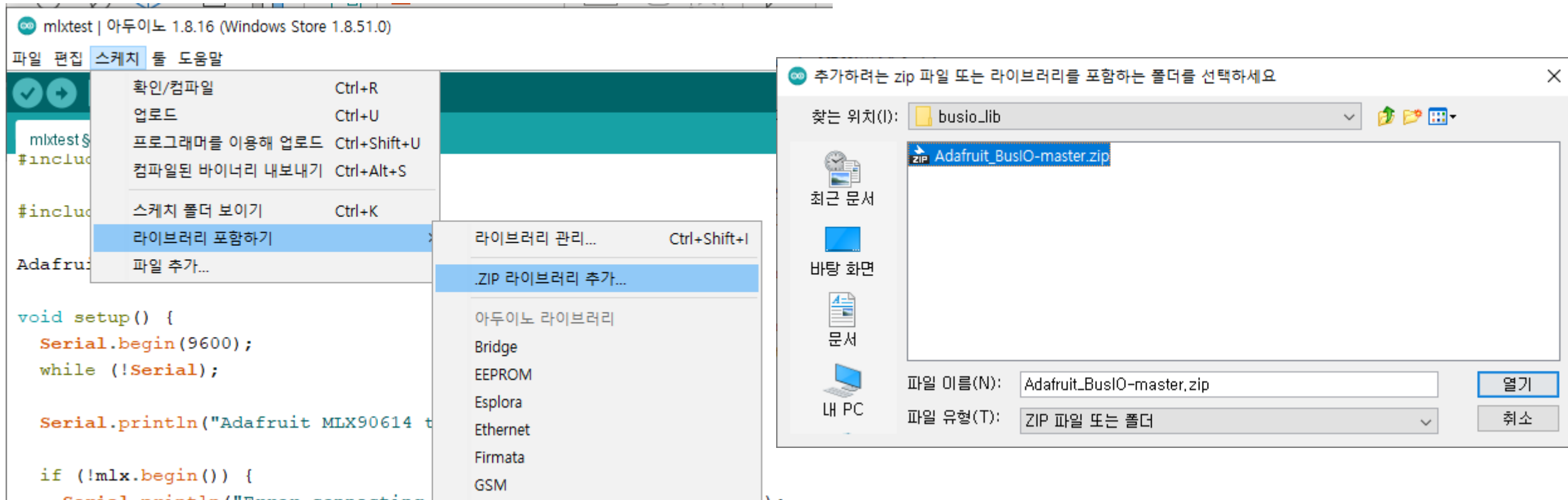
MLX90614 라이브러리 예제 테스트

- https://github.com/adafruit/Adafruit_BusIO 라이브러리 다운로드



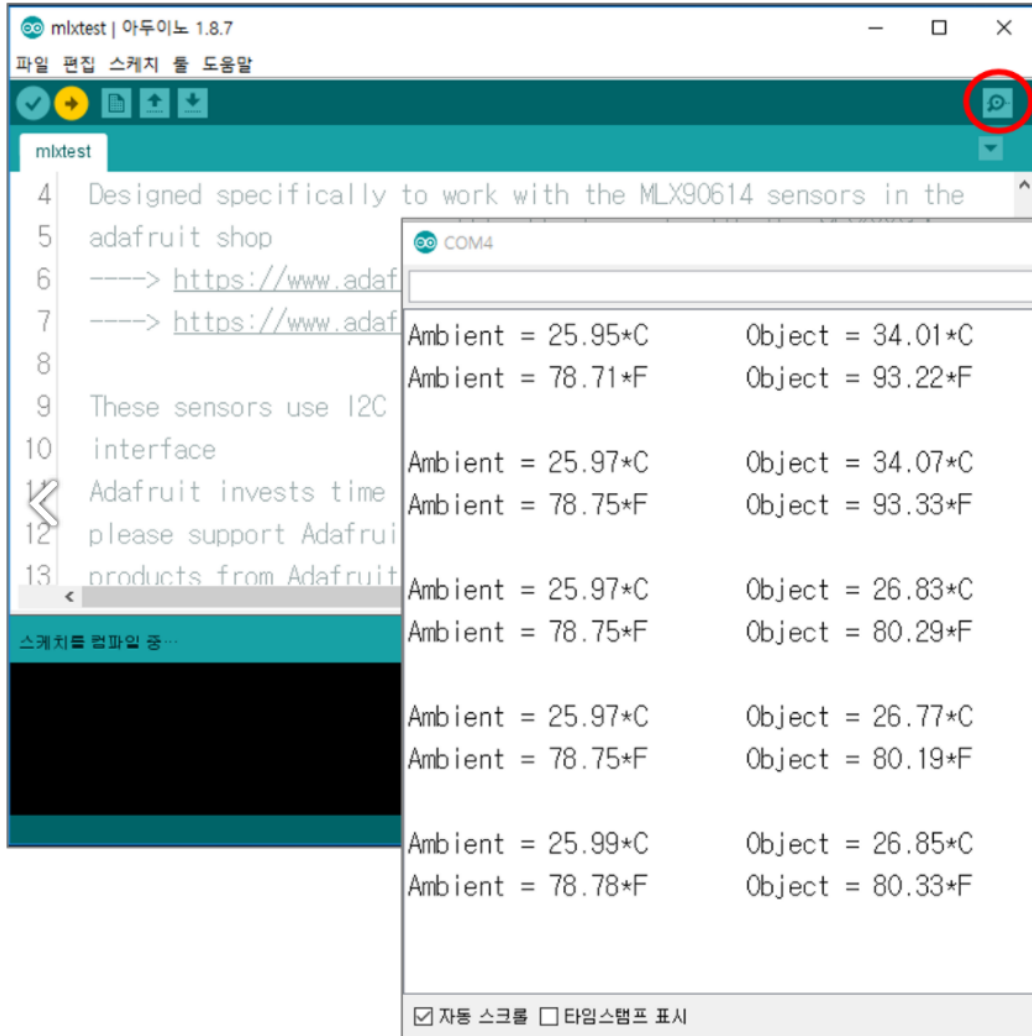
MLX90614 라이브러리 예제 테스트

- https://github.com/adafruit/Adafruit_BusIO 라이브러리 추가



MLX90614 라이브러리 예제 테스트

예제 7-1



The screenshot shows the Arduino IDE interface. The main window displays the 'mlxtest' sketch, which is a library example for the MLX90614 sensor. The code includes comments and two URLs for more information. The serial monitor, connected to COM4, shows the output of the sensor readings. The output consists of pairs of ambient and object temperatures in both Celsius and Fahrenheit. A red circle highlights the 'Serial' icon in the top toolbar, indicating where to click to open the serial monitor.

```
4 Designed specifically to work with the MLX90614 sensors in the
5 adafruit shop
6 ----> https://www.adafruit.com/product/251
7 ----> https://www.adafruit.com/product/251
8
9 These sensors use I2C
10 interface
11 Adafruit invests time and resources into developing and
12 please support Adafruit and open-source software by
13 products from Adafruit
```

Ambient (C)	Object (C)	Ambient (F)	Object (F)
25.95	34.01	78.71	93.22
25.97	34.07	78.75	93.33
25.97	26.83	78.75	80.29
25.97	26.77	78.75	80.19
25.99	26.85	78.78	80.33



응용 : 체온 측정 출입 관리

전체 구성

