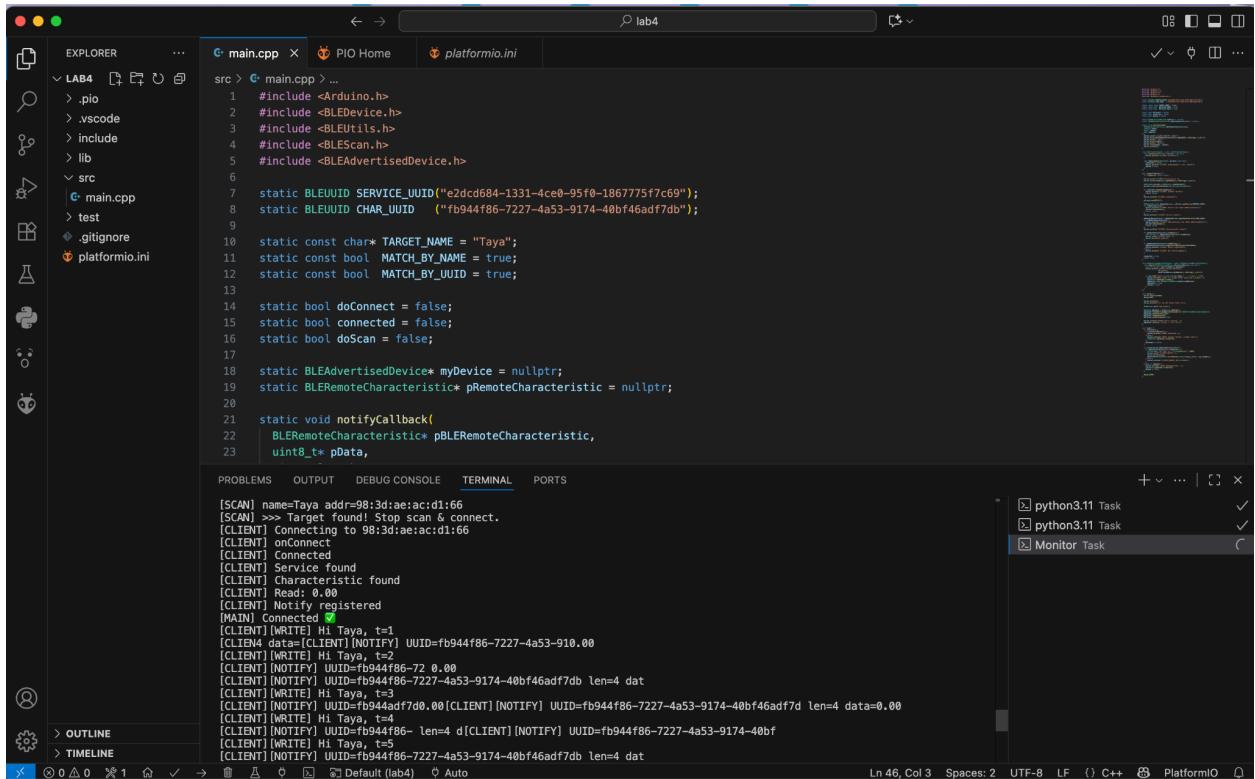
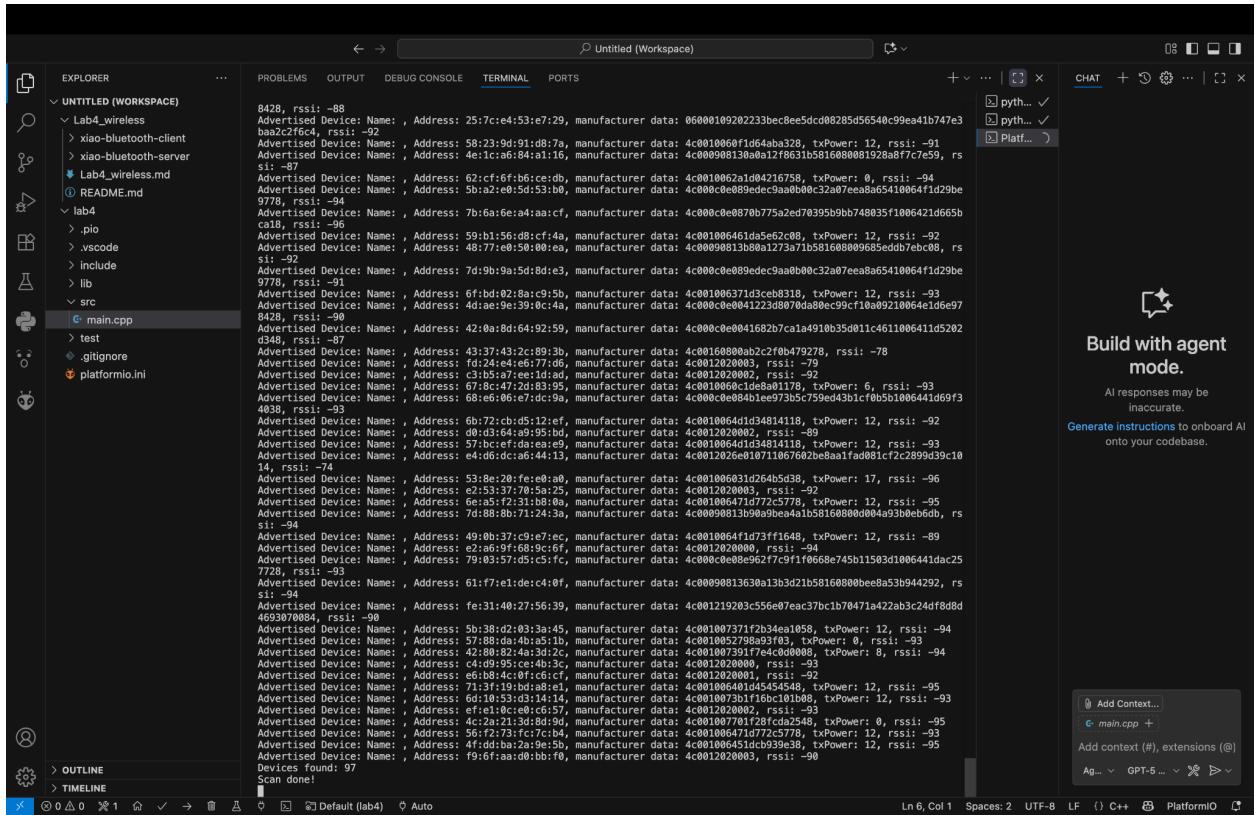


Team members: Taya Li, Yan Zhang



The screenshot shows a code editor interface with the following details:

- EXPLORER** panel on the left displays the project structure:
 - UNTITLED (WORKSPACE)
 - TECHIN514_W26
 - Lab4_wireless
 - xiao-bluetooth-client
 - xiao-bluetooth-server
 - include
 - lib
 - src
 - main.cpp
 - test
 - .gitignore
 - platformio.ini
 - Lab4_wireless.md
 - README.md
 - Lab5_power-management
 - Lab6_enclosure_design
 - Lab7_tinyml
 - PCB_resources
 - .gitignore
 - LICENSE
 - README.md
 - hello_xiao
 - .pio
 - .vscode
 - include
 - lib
 - src
 - main.cpp
 - test
 - .gitignore
 - platformio.ini
 - OUTLINE
 - TIMELINE
- EDITOR** panel shows the main.cpp file content:

```
hello_xiao > src > main.cpp > applyMovingAverage(float)
166 float applyMovingAverage(float newReading) {
176     if (validCount < FILTER_SIZE) {
179         validCount++;
180
181         // Not ready until buffer is full
182         if (validCount < FILTER_SIZE) return 0;
183
184         // Once full, set readIndex correctly for circular updates
```
- TERMINAL** panel on the right shows a terminal session:
 - zsh hello_xiao
 - python3.11 Task
 - python3.11 Task
 - python3.11 Task
 - PlatformIO: Monitor (hello_xia)
- STATUS BAR** at the bottom shows: Ln 189, Col 36, Spaces: 4, UTF-8, LF, C++, PlatformIO.

The screenshot shows the PlatformIO IDE interface with the main.cpp file open. The code implements a BLE client to connect to a target device and read its characteristic values. The terminal window displays the raw data being received from the device, which is then converted into centimeters (cm) for distance measurement.

```
main.cpp
src > C:\main.cpp > (e) pRemoteChar
#include "Arduino.h"
#define SERVICE_UUID "e2dd684-1331-4ce0-95f0-1867775f7c69"
#define CHARACTERISTIC_UUID "fb944f86-7227-4a53-9174-40bf46adf7db"
static const uint32_t SERIAL_BAUD = 9600;
static BLEScan* pScan = nullptr;
static BLEClient* pClient = nullptr;
static BLEAdvertisedDevice* target = nullptr;
static BLERemoteCharacteristic* pRemoteChar = nullptr;
static bool connected = false;
static bool hasTarget = false;
static uint32_t lastHeartbeatMs = 0;
static uint32_t lastReadMs = 0;
static float currentDistance = 0.0f;
static float maxDistance = 0.0f;
static float minDistance = 999.0f;
static uint32_t dataCount = 0;
[HB] connected=1 hasTarget=1 clientLink=YES
[read] len=4
[read] raw=83 F9 5C 41
[read] float=13.81 cm
===== NOTIFY =====
len=4
raw=C2 1B 52 41
Data #542
Current: 13.43 cm
Max: 29.79 cm
Min: 3.52 cm
=====
===== NOTIFY =====
len=4
raw=88 88 46 41
Data #543
Current: 12.42 cm
Max: 29.79 cm
Min: 3.52 cm
=====

===== NOTIFY =====
len=4
raw=88 88 46 41
Data #543
Current: 12.42 cm
Max: 29.79 cm
Min: 3.52 cm
=====

===== NOTIFY =====
len=4
raw=EA CE 7E 41
Data #631
Current: 15.59 cm
Max: 29.79 cm
Min: 3.52 cm
=====
===== NOTIFY =====
len=4
raw=EA CE 7E 41
Data #633
Current: 15.93 cm
Max: 29.79 cm
Min: 3.52 cm
=====
===== NOTIFY =====
len=4
raw=9D 80 93 41
Data #634
Current: 18.38 cm
Max: 29.79 cm
Min: 3.52 cm
=====
===== NOTIFY =====
len=4
raw=27 E2 98 41
Data #635
Current: 18.11 cm
Max: 29.79 cm
Min: 3.52 cm
=====
```

This screenshot is nearly identical to the first one, showing the same code and terminal output. The only difference is the timestamp at the bottom of the terminal window, indicating the sequence of data packets over time.

```
Ln 17, Col 37 Spaces: 2 UTF-8 LF () C++ PlatformIO
```