

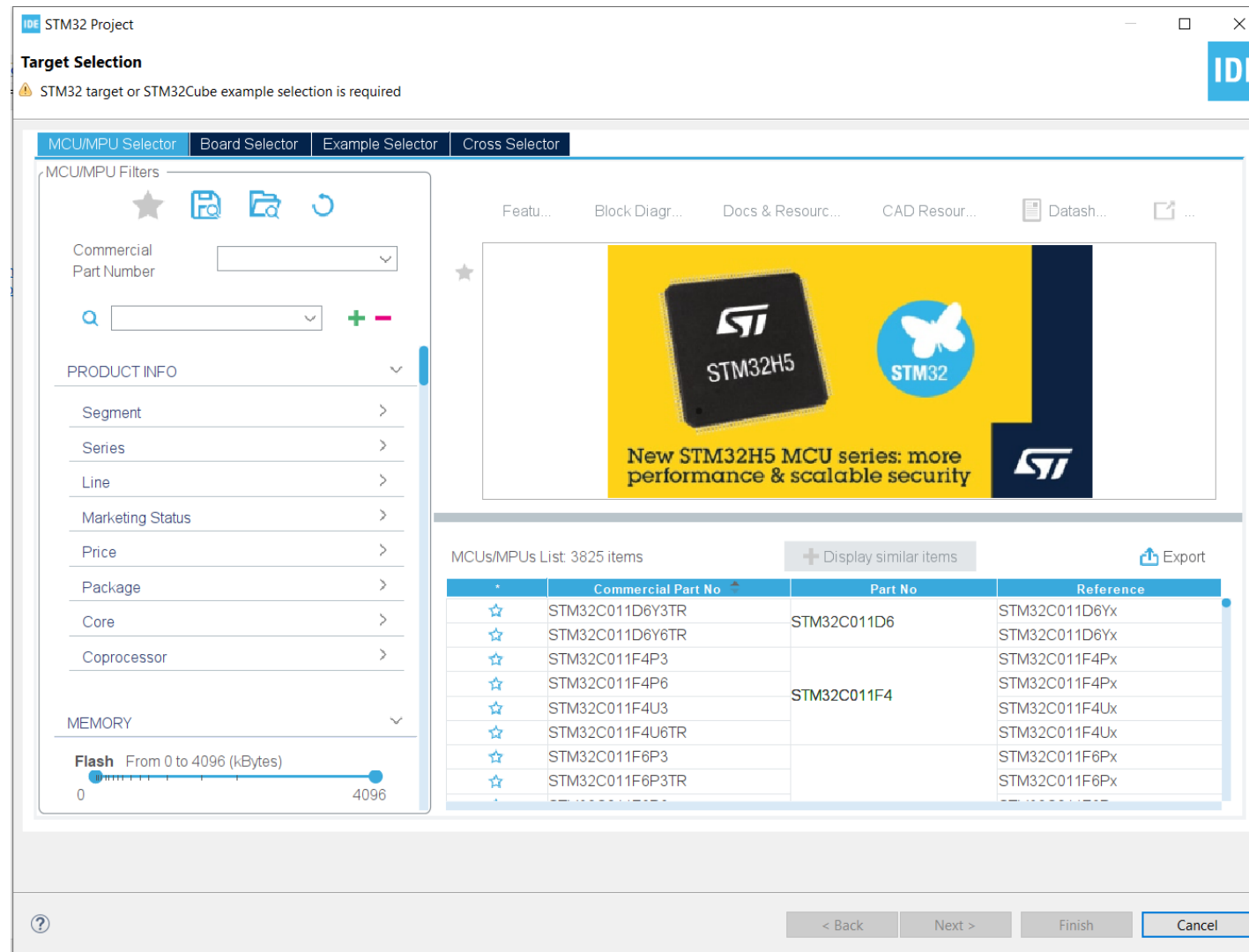
UCSD Embedded C Assignment 7

By

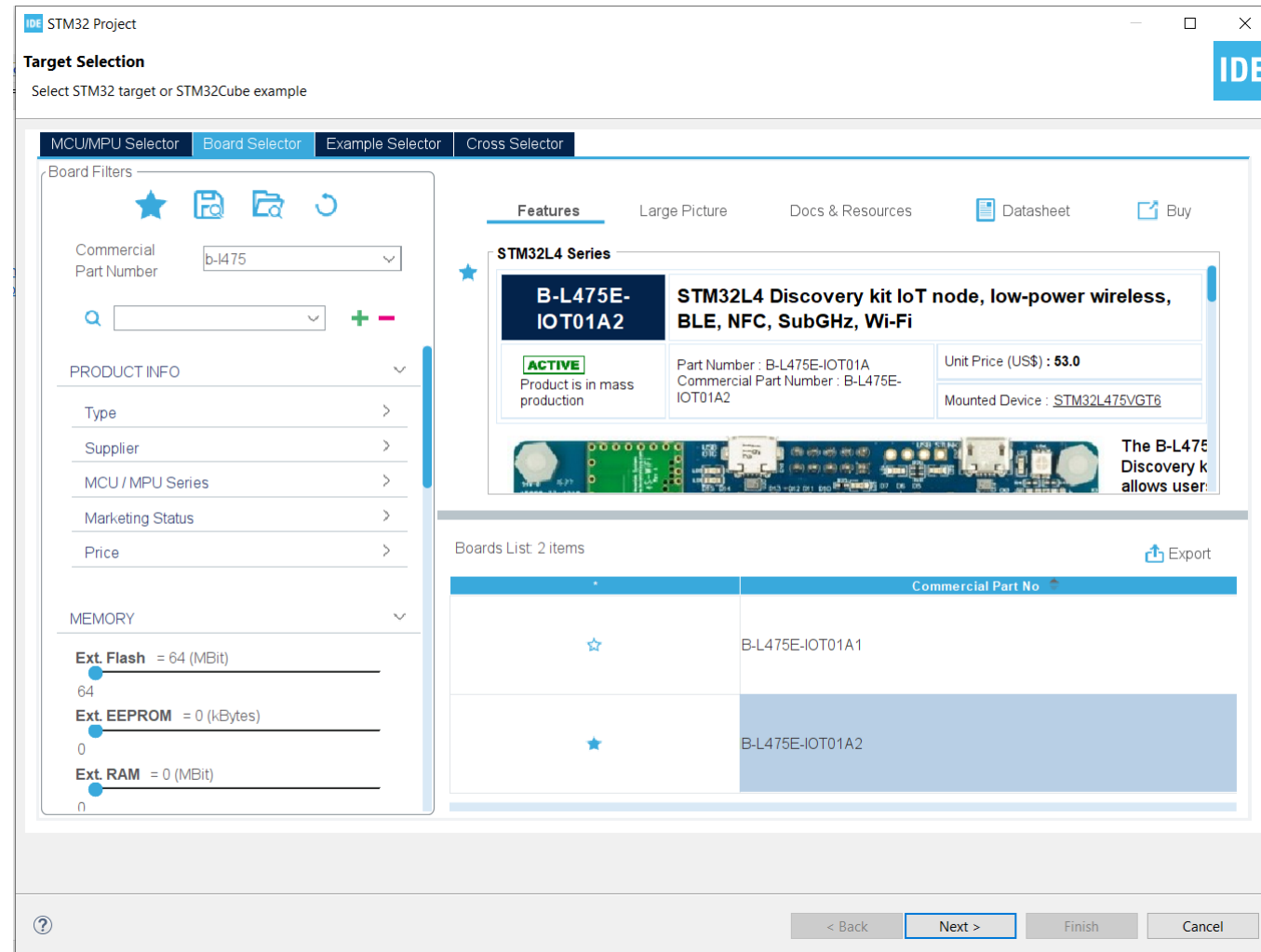
Hsuankai Chang

hsuankac@umich.edu

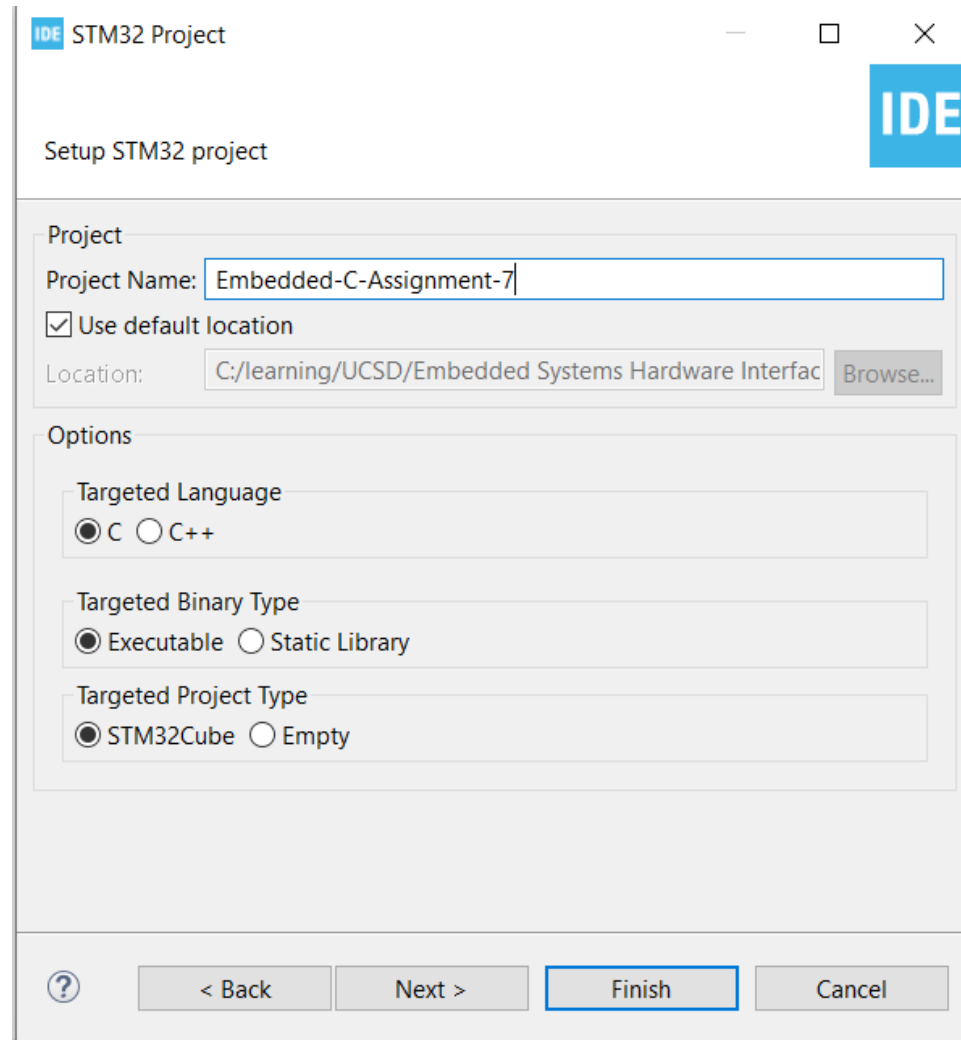
Step 1. Startup STM32CubeIDE and create new STM32 project



Step 2. Access board selector and type in the board you use, click Next



Step 3. Enter the project name then click Next



The image shows a 'Setup STM32 project' dialog box from the IDE. The window title is 'IDE STM32 Project'. The dialog is divided into two main sections: 'Project' and 'Options'. In the 'Project' section, the 'Project Name' field contains 'Embedded-C-Assignment-7'. The 'Use default location' checkbox is checked. The 'Location' field shows 'C:/learning/UCSD/Embedded Systems Hardware Interfac' with a 'Browse...' button to its right. The 'Options' section contains three groups of radio buttons: 'Targeted Language' with 'C' selected, 'Targeted Binary Type' with 'Executable' selected, and 'Targeted Project Type' with 'STM32Cube' selected. At the bottom, there are four buttons: a help icon (?), '< Back', 'Next >', and 'Finish' (which is highlighted with a blue border), and a 'Cancel' button.

IDE STM32 Project

Setup STM32 project

Project

Project Name: Embedded-C-Assignment-7

☒ Use default location

Location: C:/learning/UCSD/Embedded Systems Hardware Interfac Browse...

Options

Targeted Language

☒ C ☐ C++

Targeted Binary Type

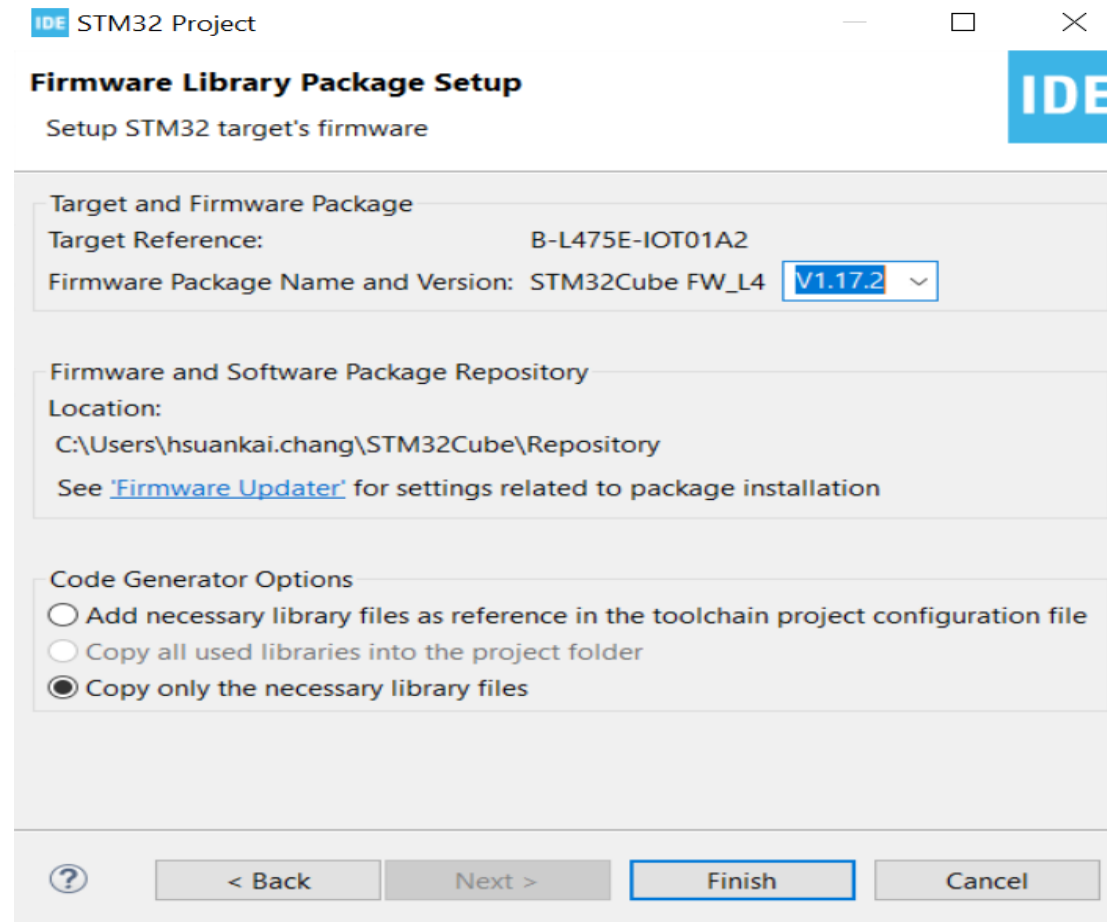
☒ Executable ☐ Static Library

Targeted Project Type

☒ STM32Cube ☐ Empty

? < Back Next > Finish Cancel

Step 4. See the firmware package name, version and location



The screenshot shows a dialog box titled "STM32 Project" with a subtitle "Firmware Library Package Setup". The main text says "Setup STM32 target's firmware". The dialog is divided into three sections: "Target and Firmware Package", "Firmware and Software Package Repository", and "Code Generator Options".

Target and Firmware Package

Target Reference: B-L475E-IOT01A2

Firmware Package Name and Version: STM32Cube FW_L4 V1.17.2

Firmware and Software Package Repository

Location:
C:\Users\hsuankai.chang\STM32Cube\Repository

See ['Firmware Updater'](#) for settings related to package installation

Code Generator Options

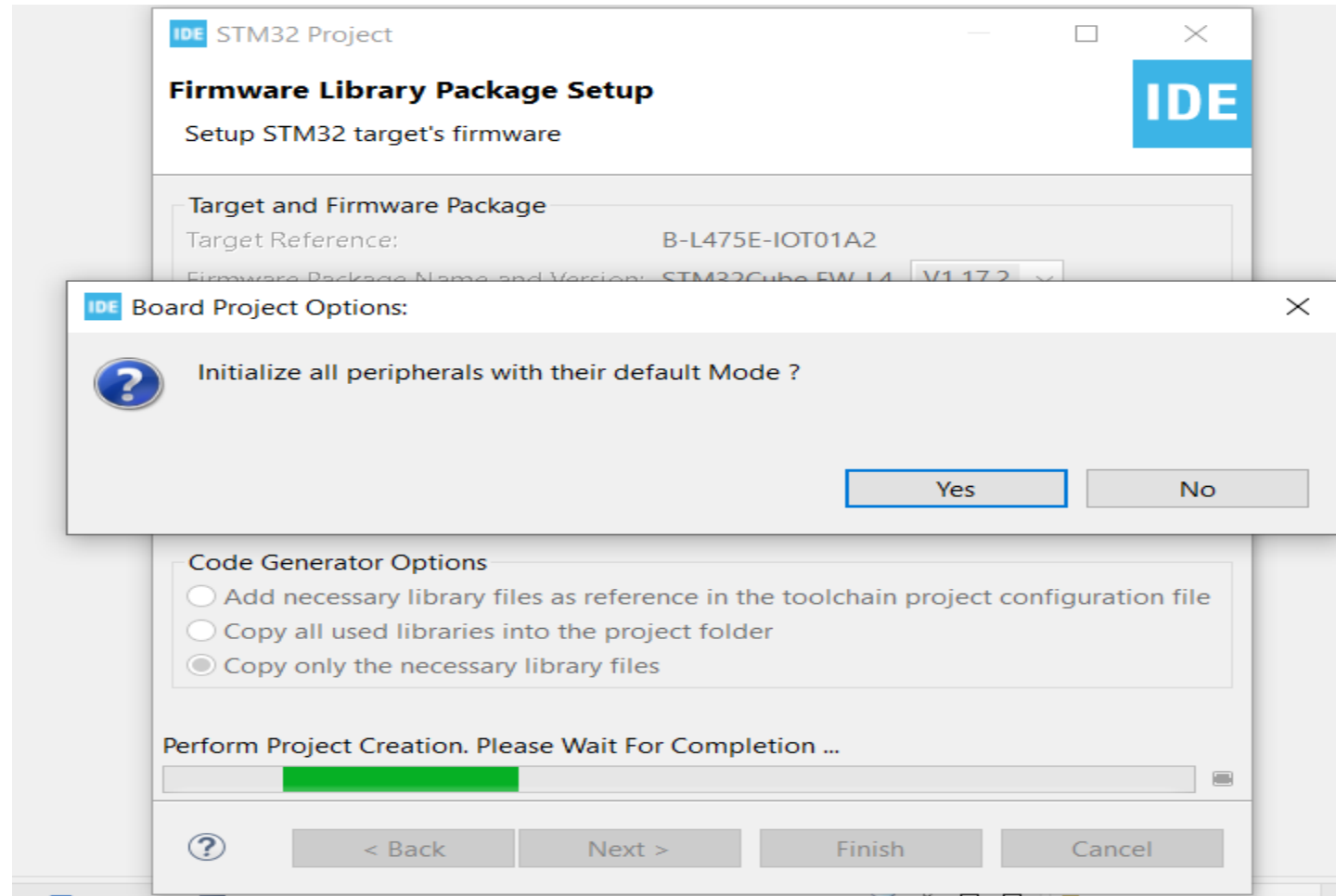
☐ Add necessary library files as reference in the toolchain project configuration file

☐ Copy all used libraries into the project folder

☒ Copy only the necessary library files

At the bottom, there are four buttons: a help button (question mark icon), "< Back", "Next >", and "Finish" (highlighted with a blue border). A "Cancel" button is also present.

Step 5. Click yes to initialize all peripherals to default



Step 6. When in .ioc file, remember to enable the SPI3 interrupt, otherwise we will get stuck in endless loop

Embedded-C-Assignment-7.ioc x

Embedded-C-Assignment-7.ioc - Pinout & Configuration

Pinout & Configuration

Categories A-Z

- System Core
- Analog
- Timers
- Connectivity

- ☒ CAN1
- ☒ FMC
- ☒ I2C1
- ☒ I2C2
- ☒ I2C3
- IRTIM
- ☒ LPUART1
- ☒ QUADSPI
- ☒ SDMMC1
- SPI1
- ☒ SPI2
- ☒ SPI3
- ☒ SWPMI1
- UART4
- ☒ UART5
- ☒ USART1
- ☒ USART2
- ☒ USART3
- ☒ USB_OTG_FS

SPI3 Mode and Configuration

Mode

Mode Full-Duplex Master

Hardware NSS Signal Disable

Configuration

Reset Configuration

<input checked="" type="checkbox"/> DMA Settings	<input checked="" type="checkbox"/> GPIO Settings
<input checked="" type="checkbox"/> Parameter Settings	<input checked="" type="checkbox"/> User Constants
<input checked="" type="checkbox"/> NVIC Settings	

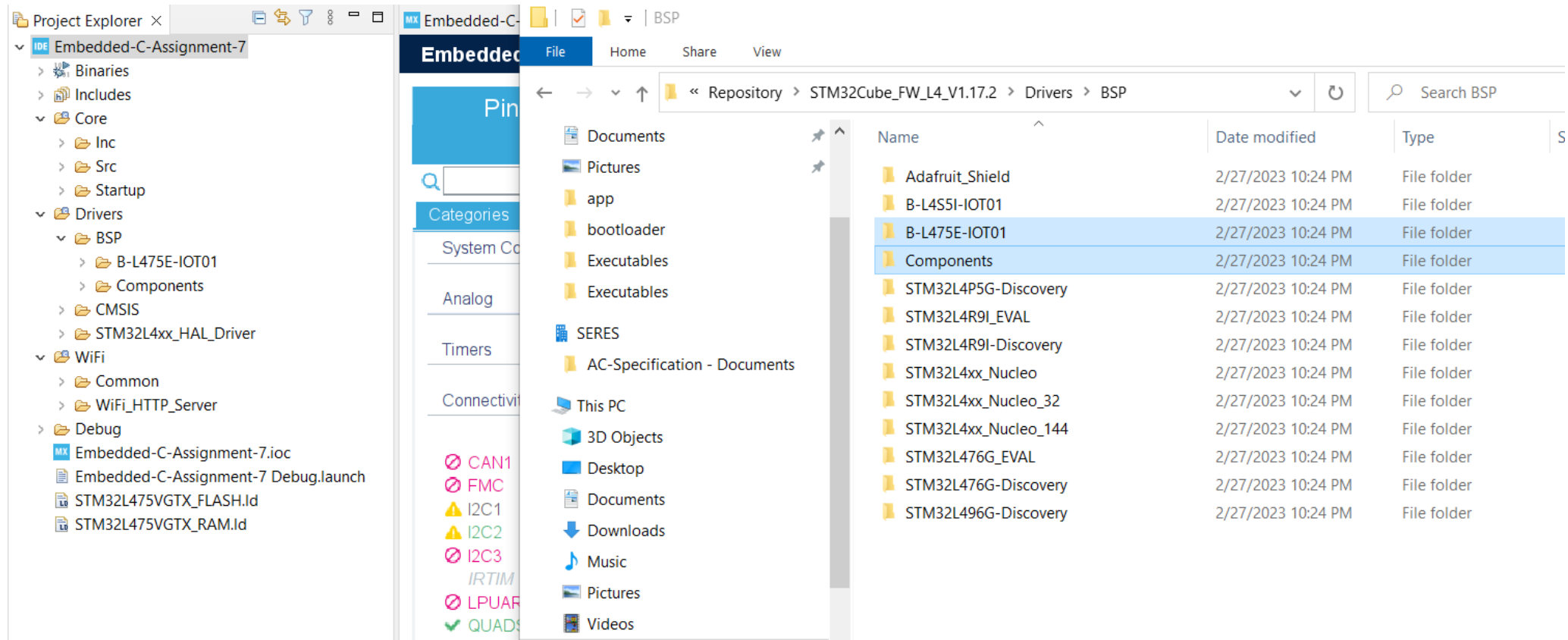
NVIC Interrupt Table	Enabled	Preemption Priority	Sub P
SPI3 global interrupt	<input checked="" type="checkbox"/>	0	0

Pinout view

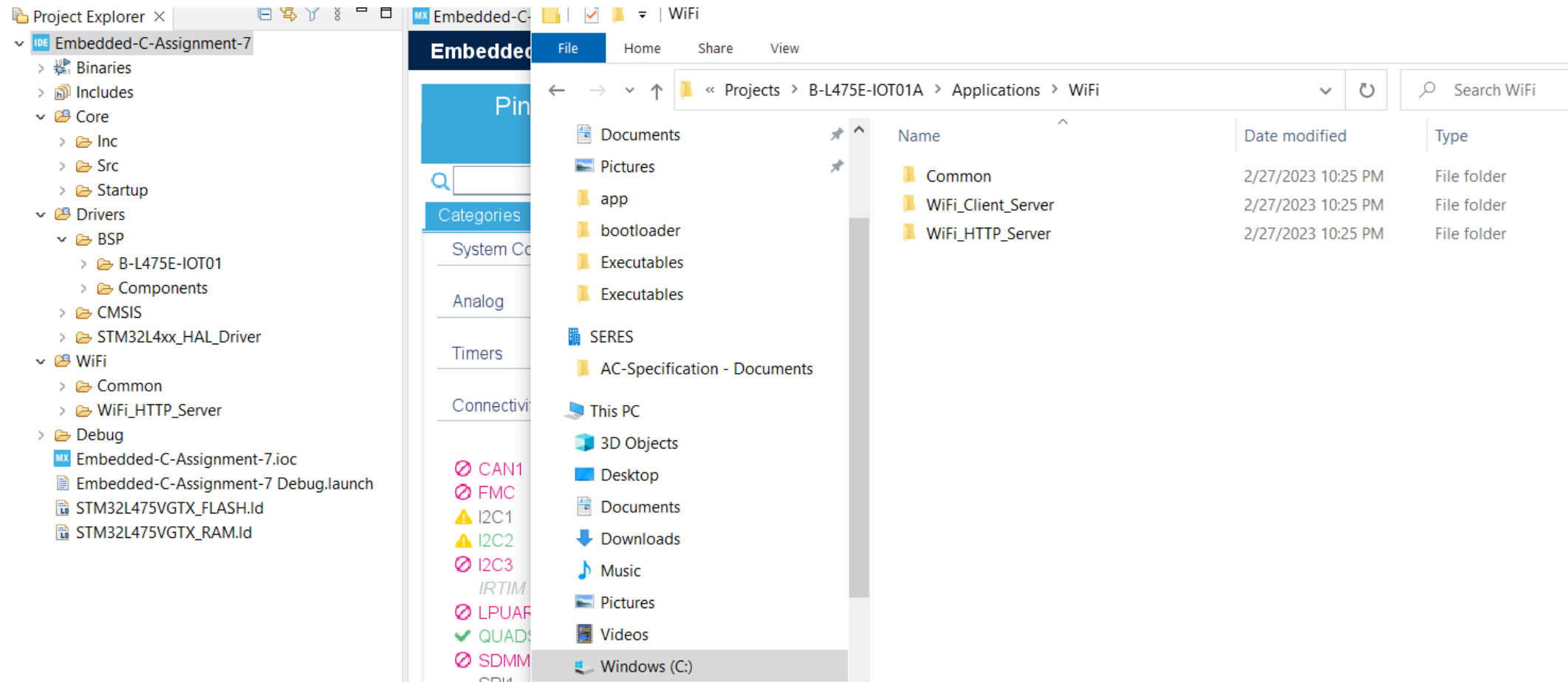
System view

STM32L475VGTx LQFP100

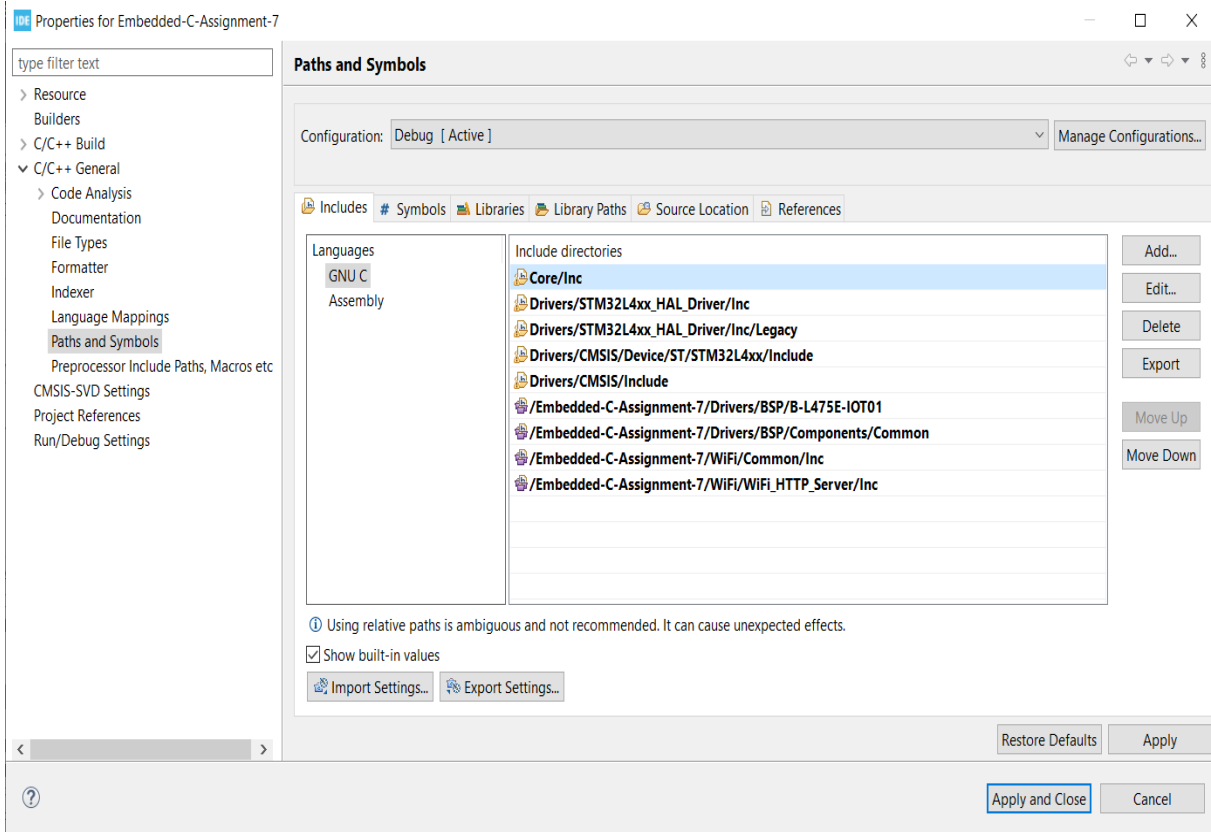
Step 7. Copy the necessary BSP folders into the project



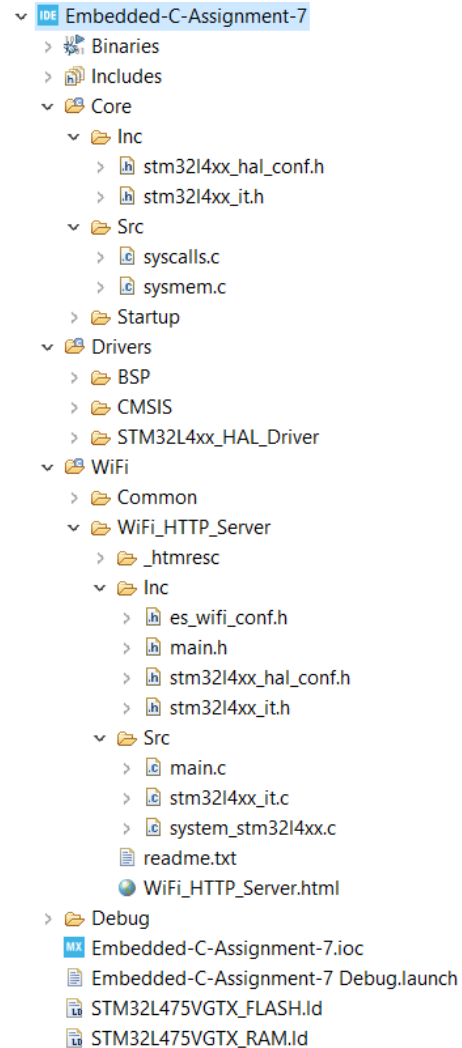
Step 8. Copy the WIFI project into the assignment project



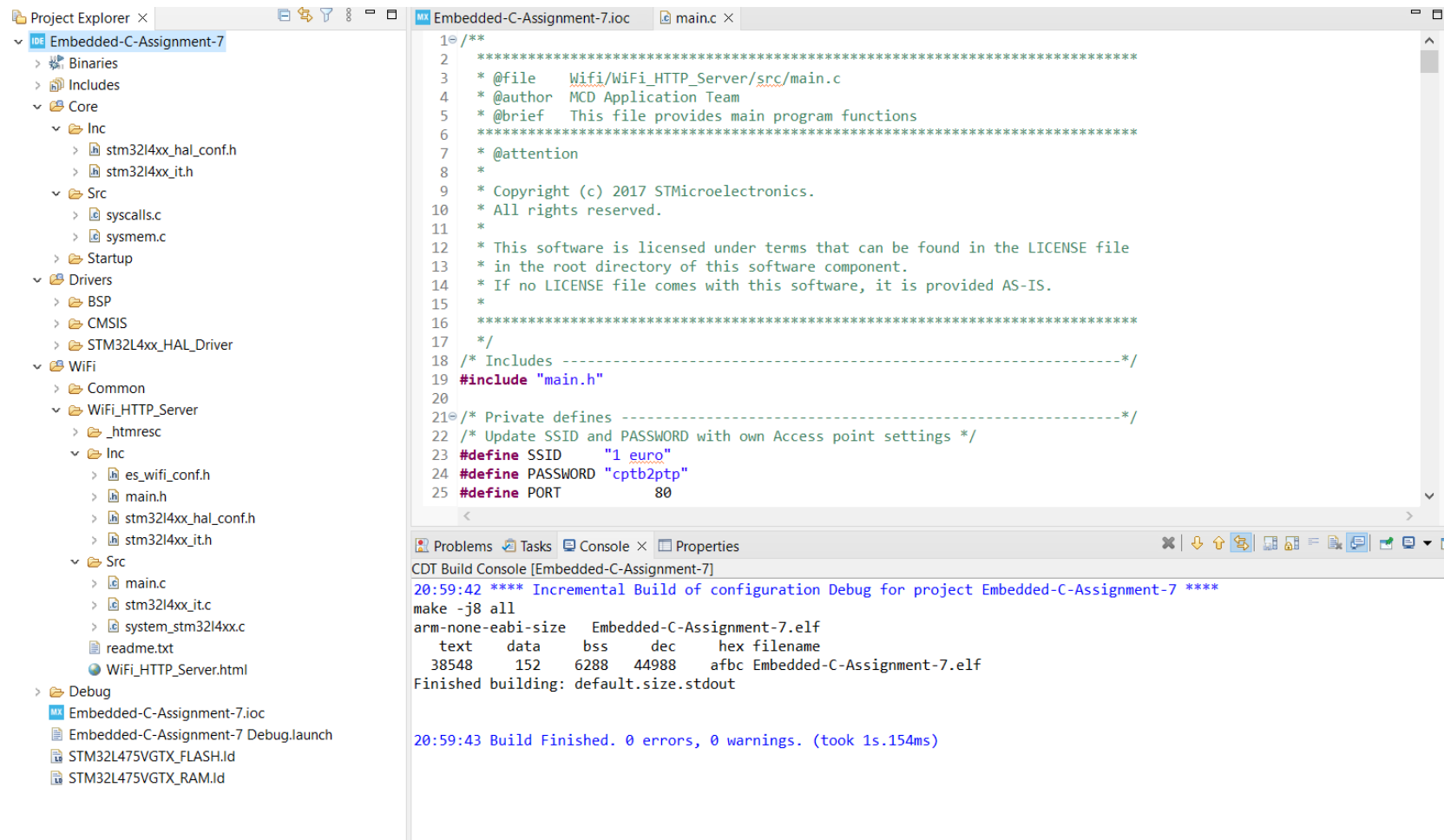
Step 9. Add the include path and the source path



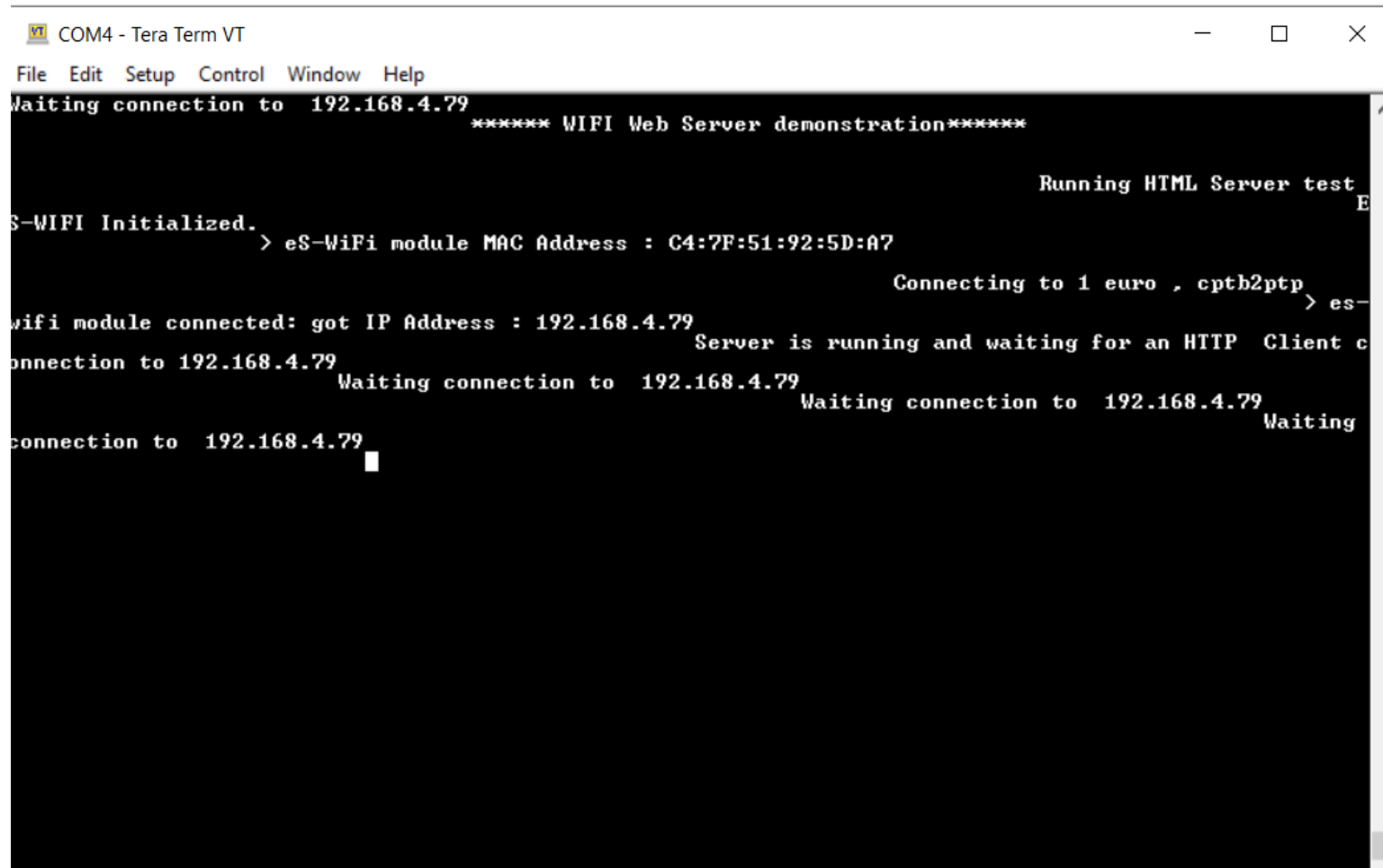
Step 10. Delete unnecessary files to make the compilation success



Step 11. Change the SSID and password to match your WIFI point, then compile and run the code



Step 12. Open the tera term and see the IP address



The screenshot shows a Tera Term window titled "COM4 - Tera Term VT". The menu bar includes "File", "Edit", "Setup", "Control", "Window", and "Help". The terminal output displays the following text:

```
Waiting connection to 192.168.4.79
***** WIFI Web Server demonstration*****
Running HTML Server test
E
S-WIFI Initialized.
> eS-WiFi module MAC Address : C4:7F:51:92:5D:A7
Connecting to 1 euro , cpth2ptp
> es-
wifi module connected: got IP Address : 192.168.4.79
Server is running and waiting for an HTTP Client c
onnection to 192.168.4.79
Waiting connection to 192.168.4.79
Waiting connection to 192.168.4.79
Waiting
connection to 192.168.4.79
```

A cursor is visible at the end of the last line of output.

Step 13. Open the IP address and test the button functions, test is successful

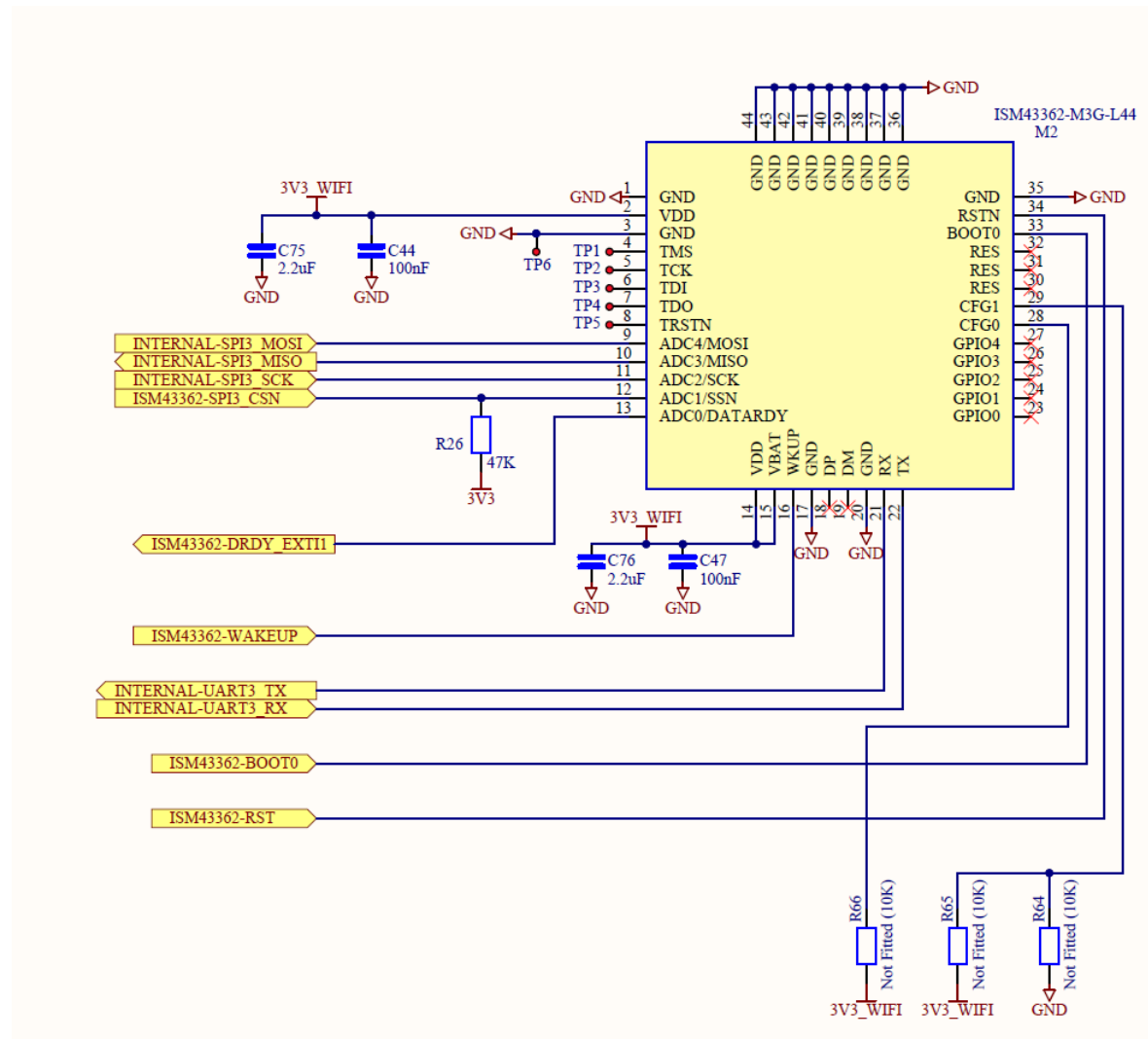
← → ↻ 🏠 ⚠ Not secure | 192.168.4.79

InventekSys : Web Server using Es-Wifi with STM32

Temp: °C

☒ LED off
☐ LED on

Appendix, schematic for WIFI module



Appendix, schematic for WIFI module, processor side view

