

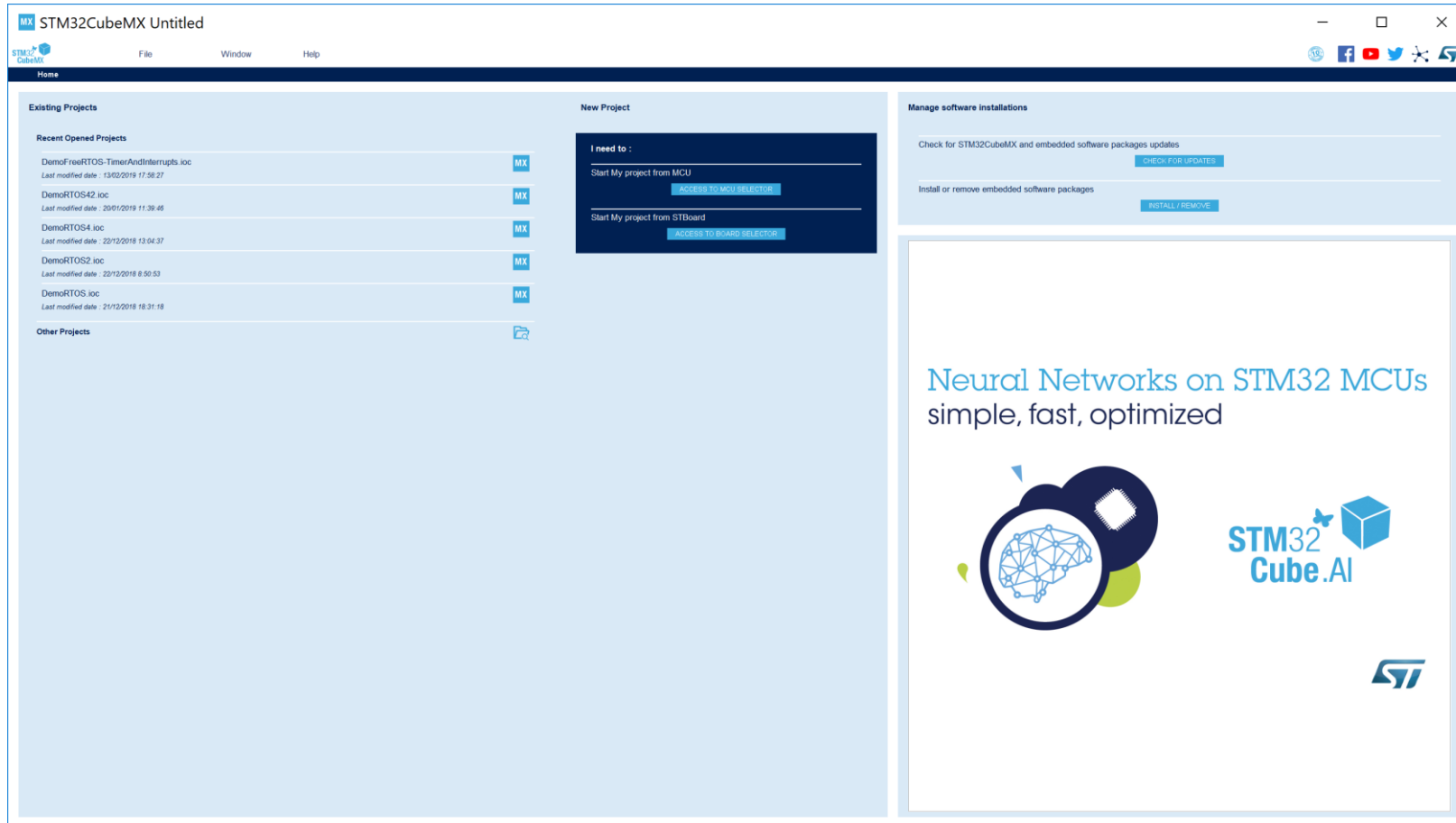
USCD Embedded C Assignment 1

By

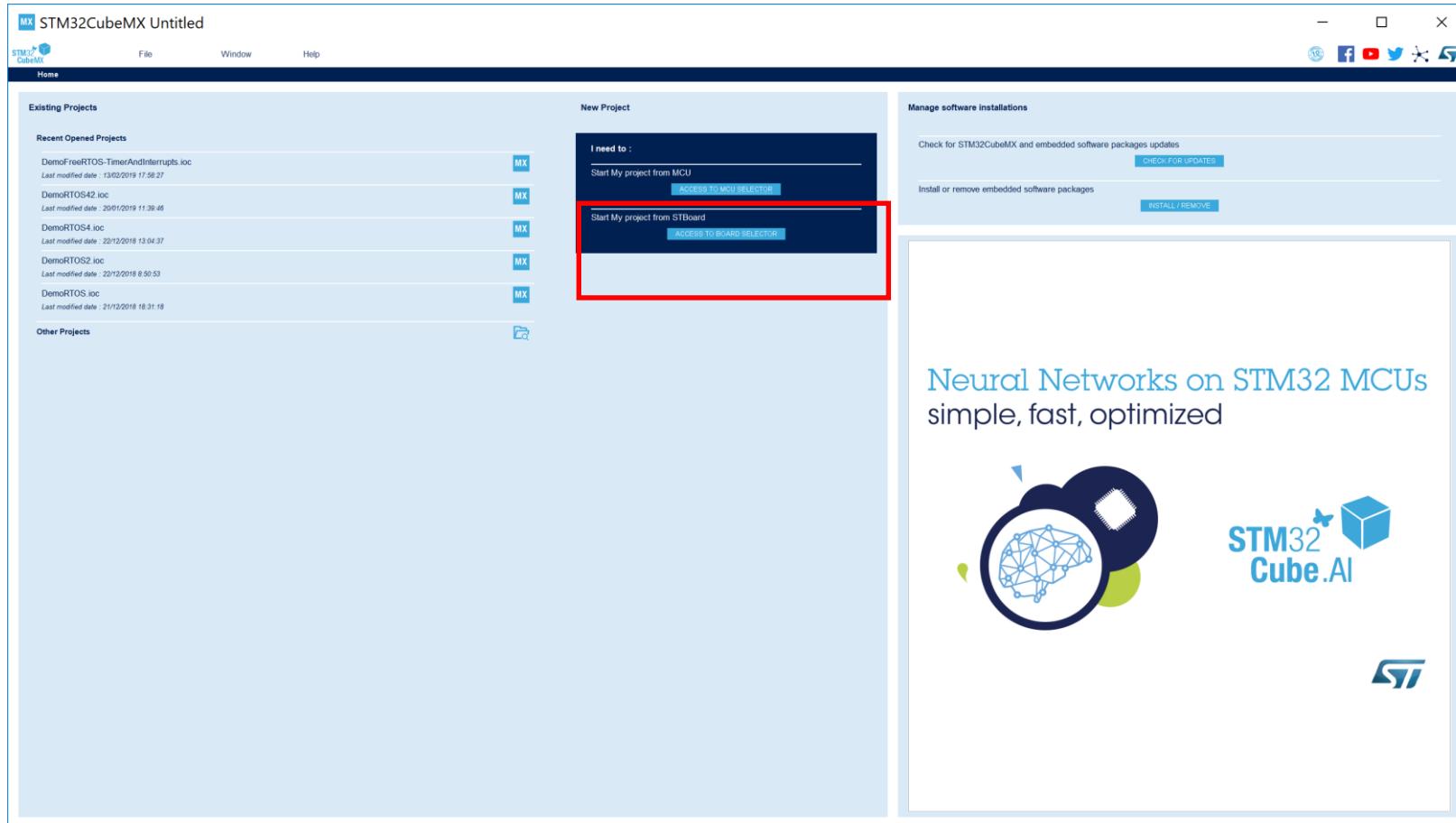
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Step 1. Startup STM32CubeMX



Step 2. Access Board Selector



Step 3. Enter “B-L475E-IOT01A” Board

The screenshot shows the 'New Project from a Board' dialog. On the left, the 'Board Filter' sidebar is active, with a search box containing 'B-L475E-IOT01A'. Below the search box, filters for 'STM32L4' and 'Discovery' are selected. The main panel displays the product page for the 'B-L475E-IOT01A' board, including its features and a table of boards.

Board Filter:

- Search: B-L475E-IOT01A
- Filter: STM32L4
- Type: Discovery
- MCU Series: STM32L4
- Other: Price > \$3.8, Oscillator Freq. > 0 (MHz)
- Peripheral: Accelerometer, Gyroscope, Magnetometer, Microphone, On-board Display, Other, Power Source, Pressure Sensor, ROM, RS-232, RTC, SPI, I2C, Temperature Sensor, USB

Product Page:

B-L475E-IOT01A

STM32electronics B-L475E-IOT01A IOT Discovery Board Support and Examples

ACTIVE Active
Product is in mass production

Unit Price (USD): \$3.8
Mounted device: STM32L475E-IOT01A

The B-L475E-IOT01A Discovery kit for IoT node allows users to develop applications with direct connection to cloud servers. The Discovery kit enables a wide diversity of applications by exploiting the power communication, multi-sensing and ARM Cortex-M4 core-based STM32L4 Series features. The support for Arduino Uno V3 and PMOD connectivity provides unlimited expansion capabilities with a large choice of specialized add-on boards.

Features

- On-board ST-LINKV2-1
- Supply through ST-Link USB
- USB OTG (Full speed) with micro-AB Connector
- Blue Tooth module
- WiFi module
- 8 MByte QuadSPI Flash
- ST MEMS 3-axis accelerometer (LSM2DS1)
- ST MEMS gyroscope (LSM2DS1)
- ST MEMS magnetometer (LSM2DS1)
- ST MEMS barometer (LPS22DH)
- ST MEMS humidity and temperature (HTS221)
- Digital microphone (MP34DT01)
- RS-232 serial interface
- Two Push-buttons: User and Reset
- Seven LEDs: ST-LINKV2-1 communication, 3.3 V Power, Over current, USB COM (Red/Green), User (2*Green/Yellow/Blue)


Boards List: 1 item

Image	Chipset	Type	Status & Link	Unit Price (USD)	Mounted device
	B-L475E-IOT01A	Discovery	Active	\$3.8	STM32L475E-IOT01A

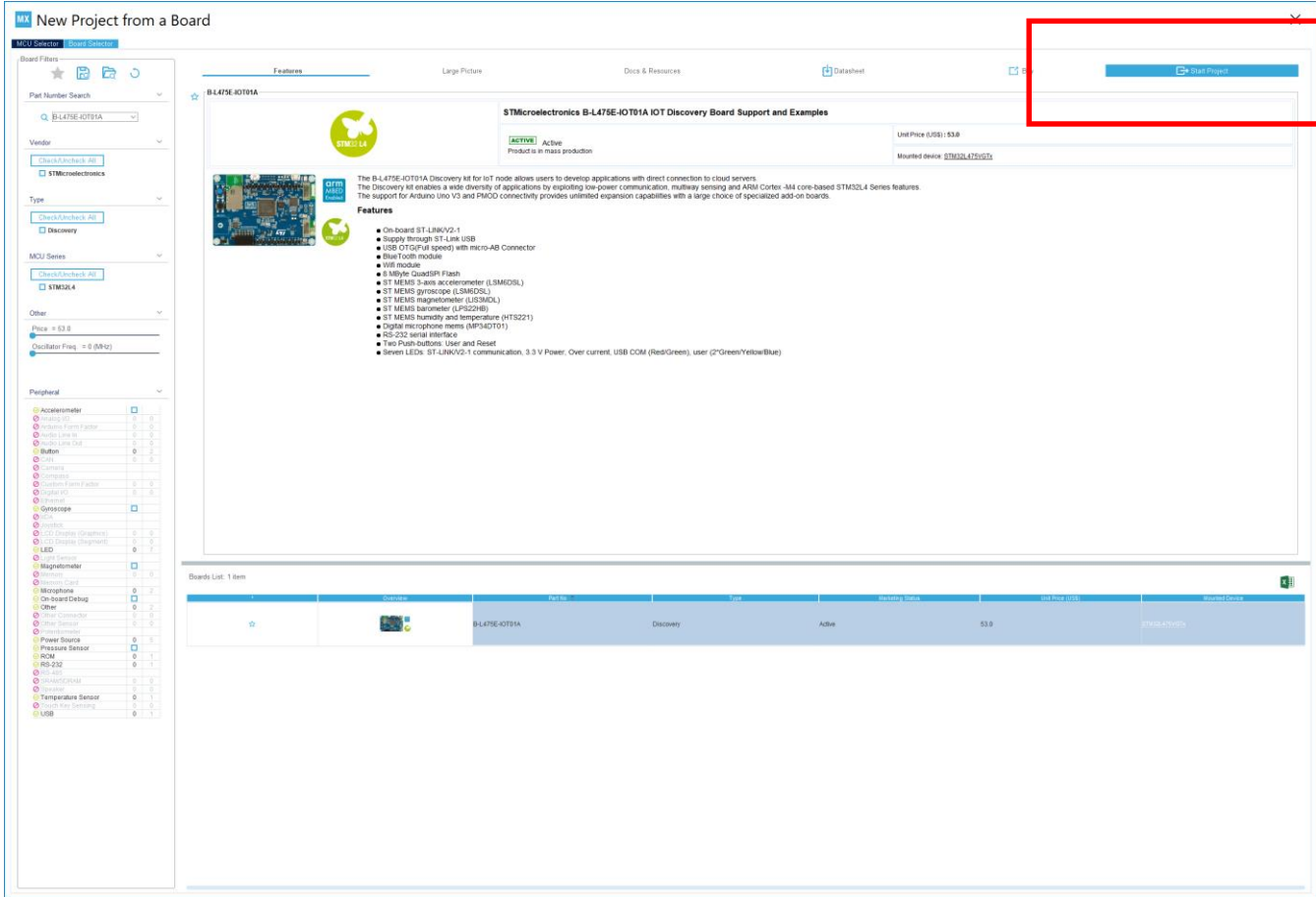
Step 4. Select Board Photo

The screenshot shows the 'New Project from a Board' dialog with the following components:

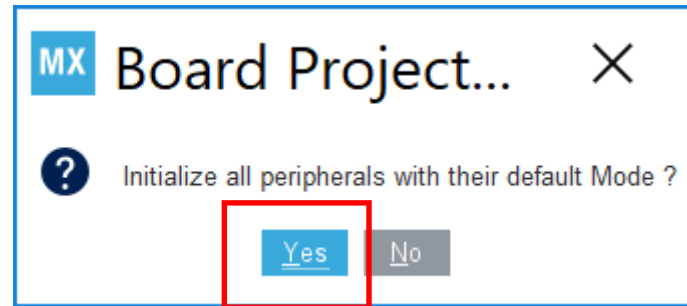
- Board Filters:**
 - Part Number Search: B-L475E-IOT01A
 - Vendor: STMMicroelectronics
 - Type: Discovery
 - MCU Series: STM32L4
 - Price: ~ \$3.8
 - Discontinuation Flag: ~ 0 (0/N/A)
- Peripheral:**
 - Accelerometer: ☒
 - Audio: ☐
 - Button: ☐
 - Gyroscope: ☒
 - LED: ☐
 - Magnetometer: ☐
 - Microphone: ☐
 - On-board Display: ☐
 - Other: ☐
 - Power Source: ☐
 - Pressure Sensor: ☐
 - ROM: ☐
 - RS-232: ☐
 - RTC: ☐
 - Temperature Sensor: ☐
 - USB: ☐
- Board Details (B-L475E-IOT01A):**
 - Features: STM32L475E-IOT01A IOT Discovery Board Support and Examples
 - Unit Price (USD): \$3.8
 - Mounted device: STM32L475E-IOT01A
 - Features list:
 - On-board ST-LINK/V2-1
 - Supply through ST-Link USB
 - USB OTG (Full speed) with micro-AB Connector
 - Blue Tooth module
 - IoT module
 - 8 MByte QuadSPI Flash
 - ST MEMS 3-axis accelerometer (LSM2DS1)
 - ST MEMS gyroscope (LSM2DS1)
 - ST MEMS magnetometer (LSM2DS1)
 - ST MEMS barometer (LPS22DH)
 - ST MEMS humidity and temperature (HTS221)
 - Digital microphone (MP34DT01)
 - RS-232 serial interface
 - Two Push-buttons: User and Reset
 - Seven LEDs: ST-LINK/V2-1 communication, 3.3 V Power, Over current, USB COM (Red/Green), User (2*Green/Yellow/Blue)
- Boards List:**

Icon	Part Number	Type	Status	Unit Price (USD)	Mounted device
	B-L475E-IOT01A	Discovery	Active	\$3.8	STM32L475E-IOT01A

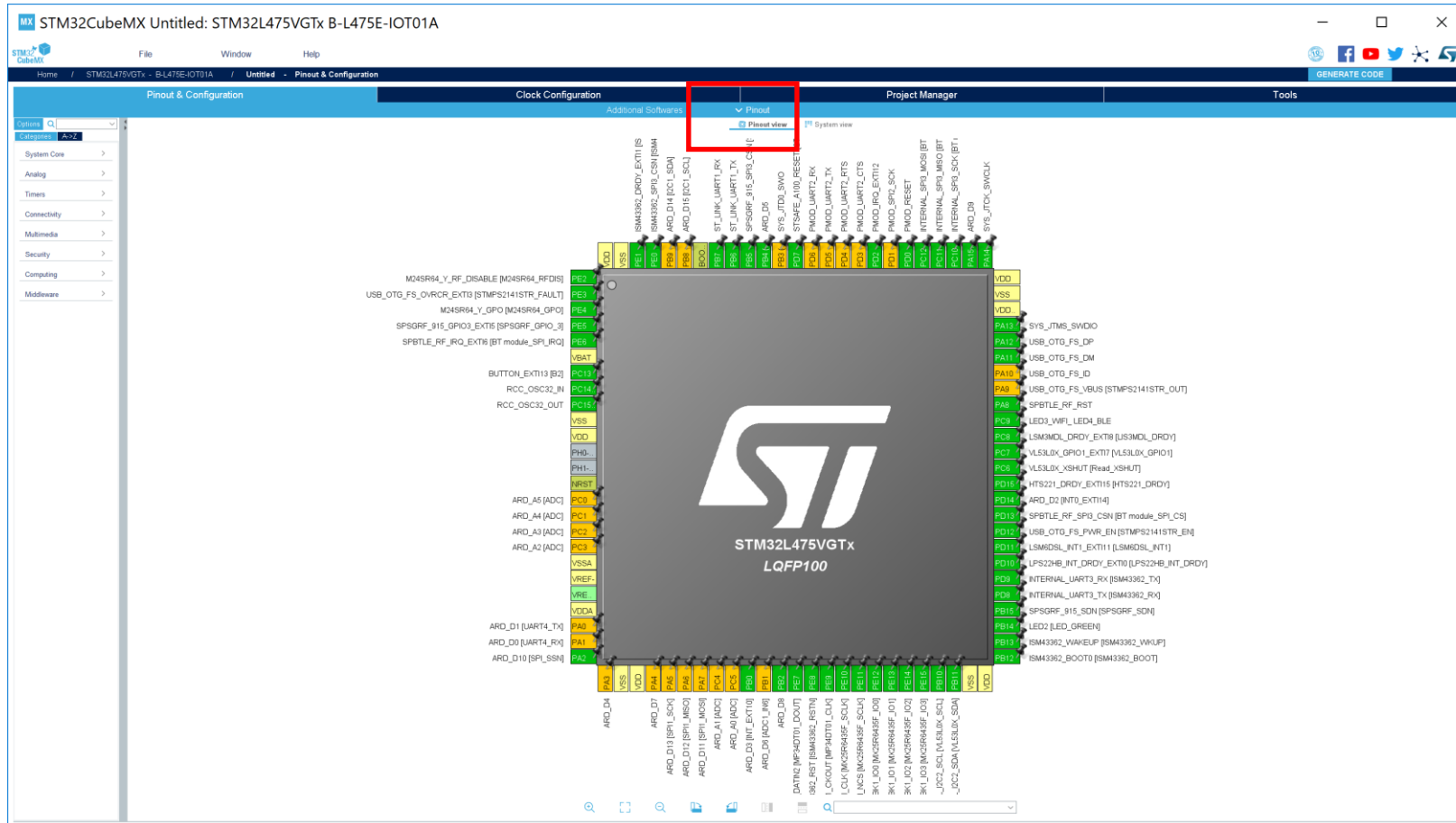
Step 5. Select “Start Project”



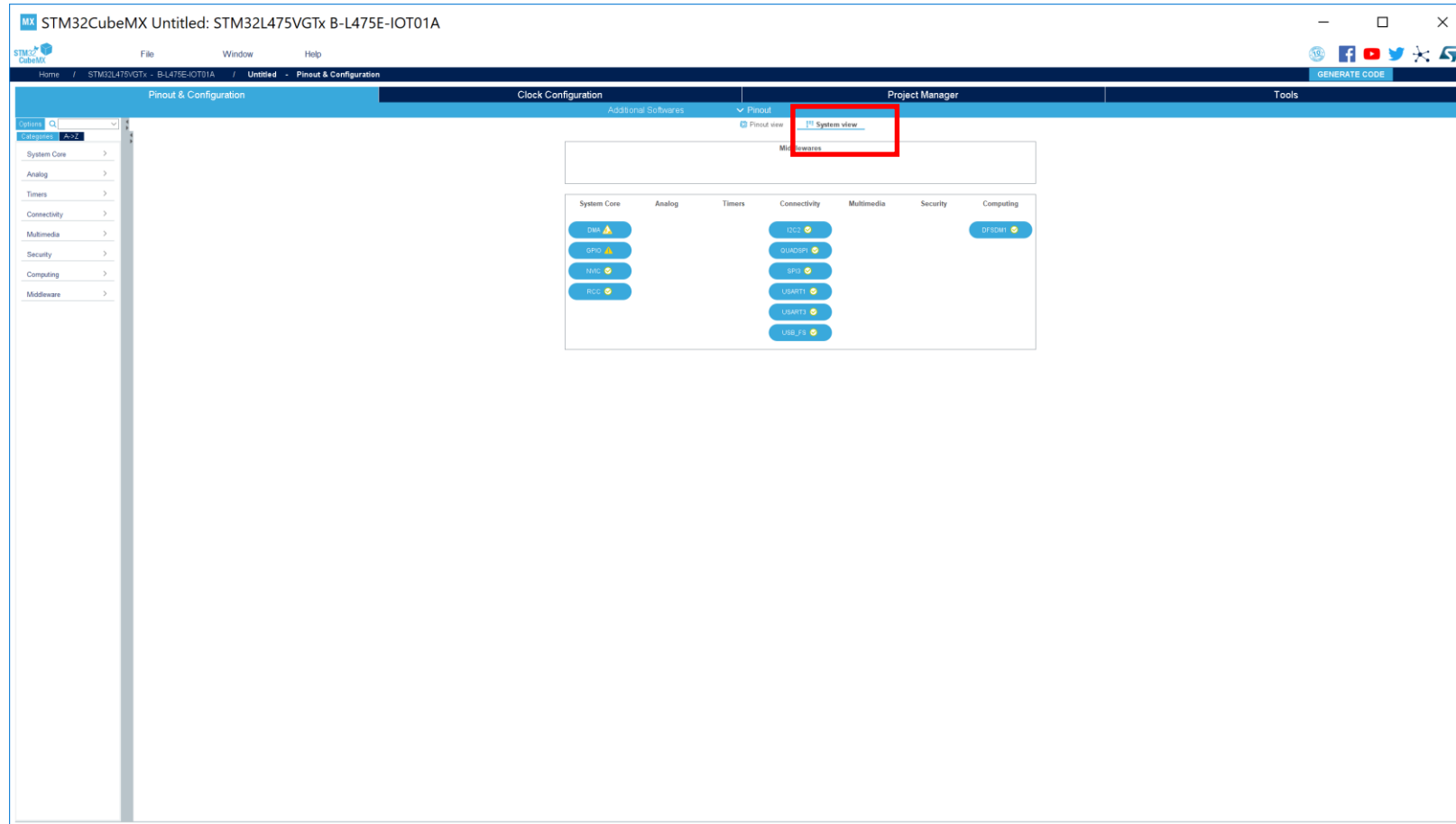
Step 6. Select **YES** (initialize all peripherals with the default mode)



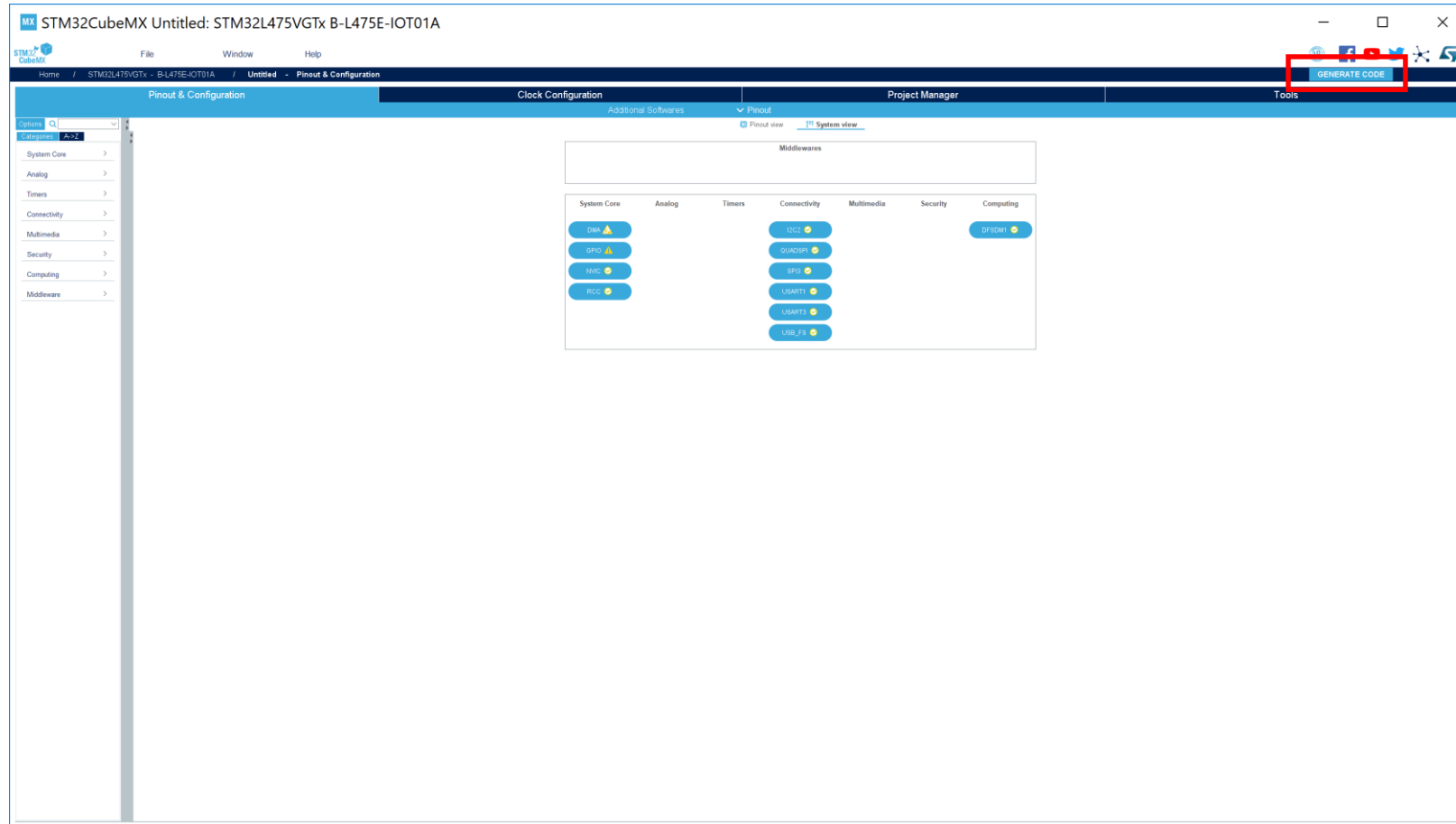
Step 7. Observe Results (Pinout View)



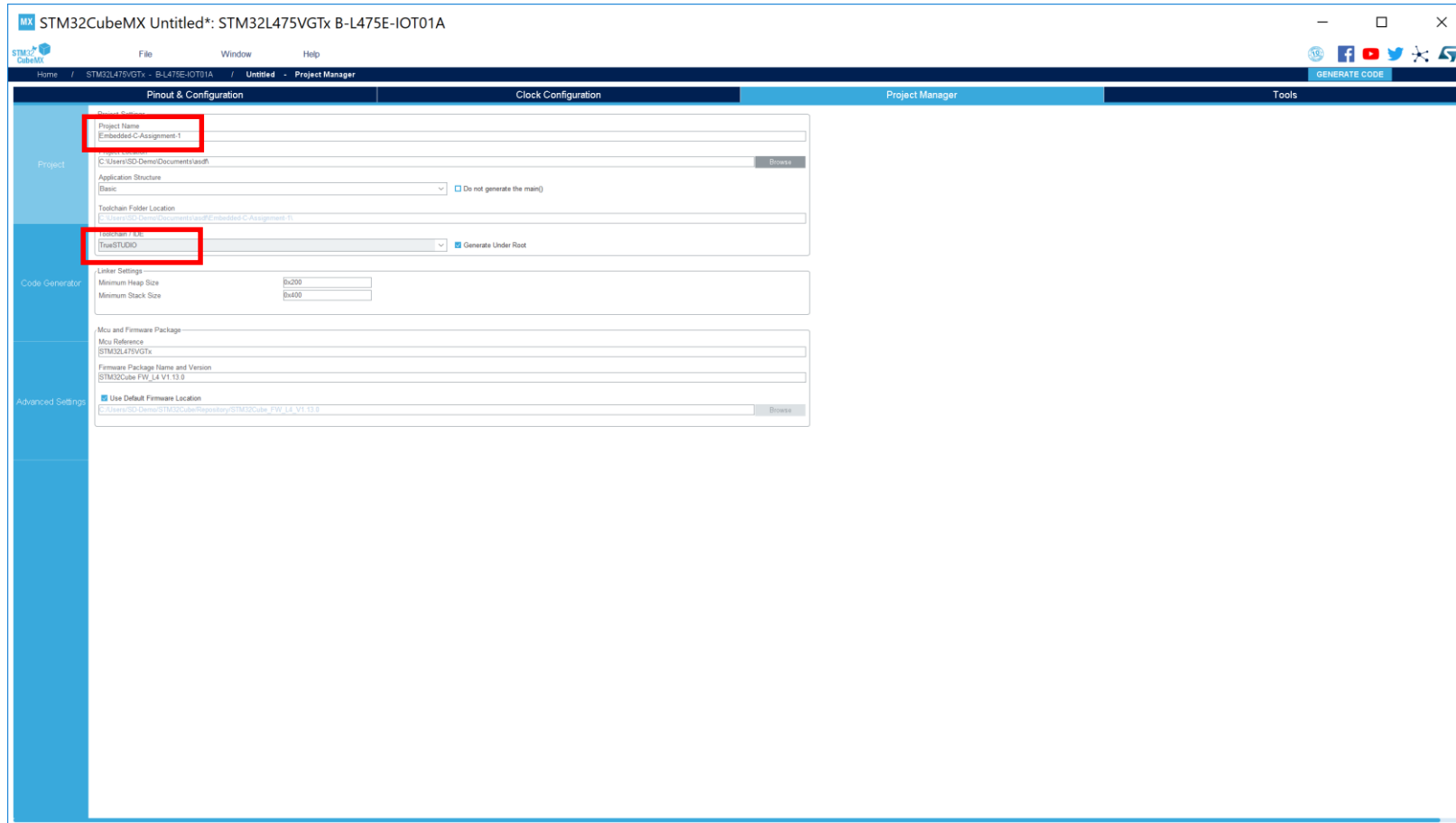
Step 8. Observe Results (System View)



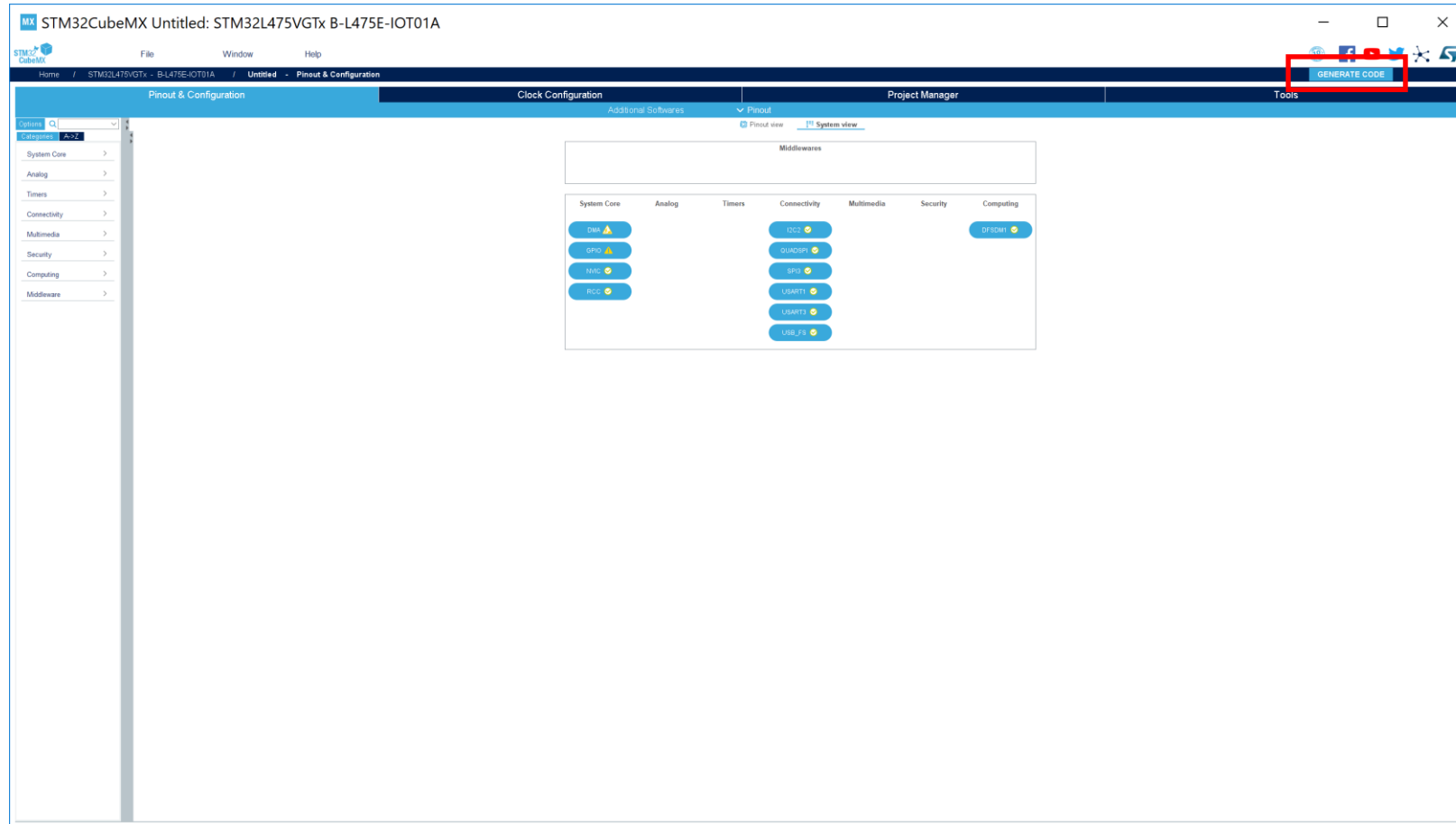
Step 9. Select “Generate Code”



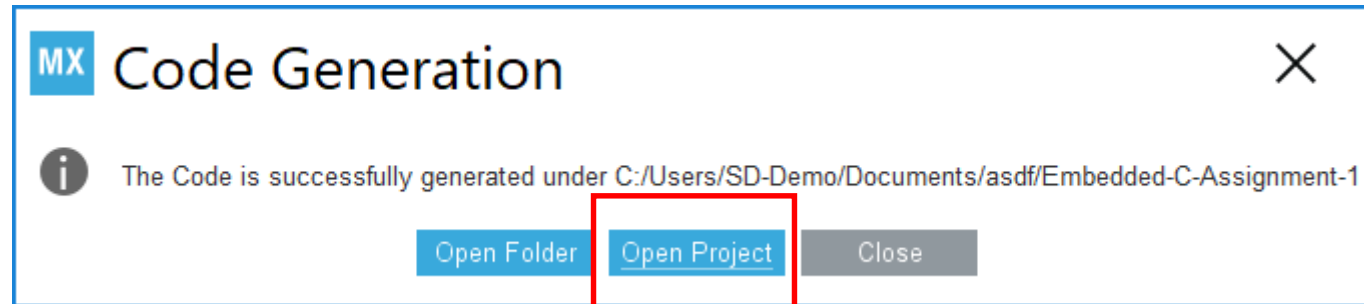
Step 10. Enter “Embedded-C-Assignment-1” and select TrueStudio as IDE



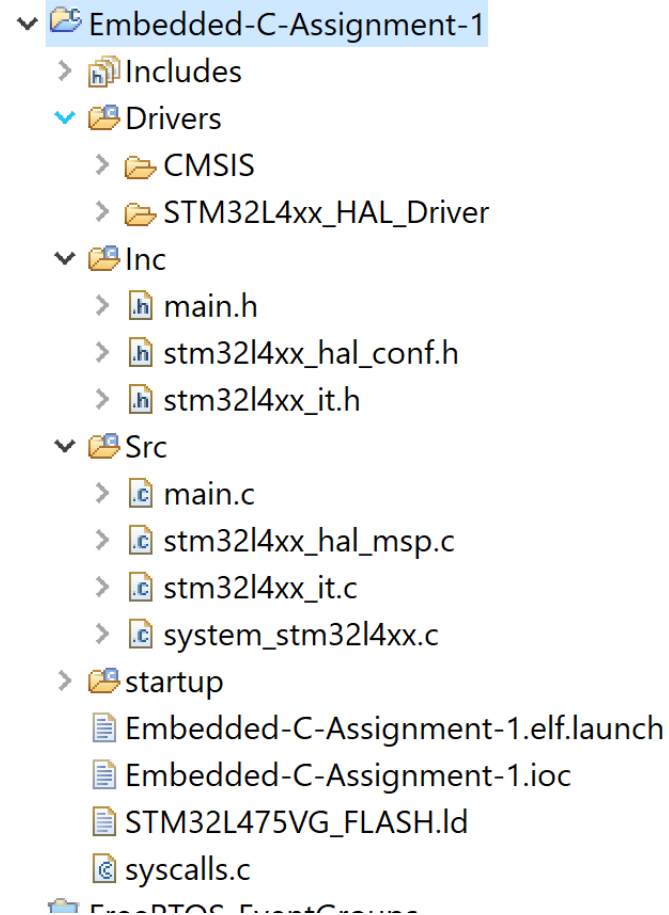
Step 11. Select “Generate Code”



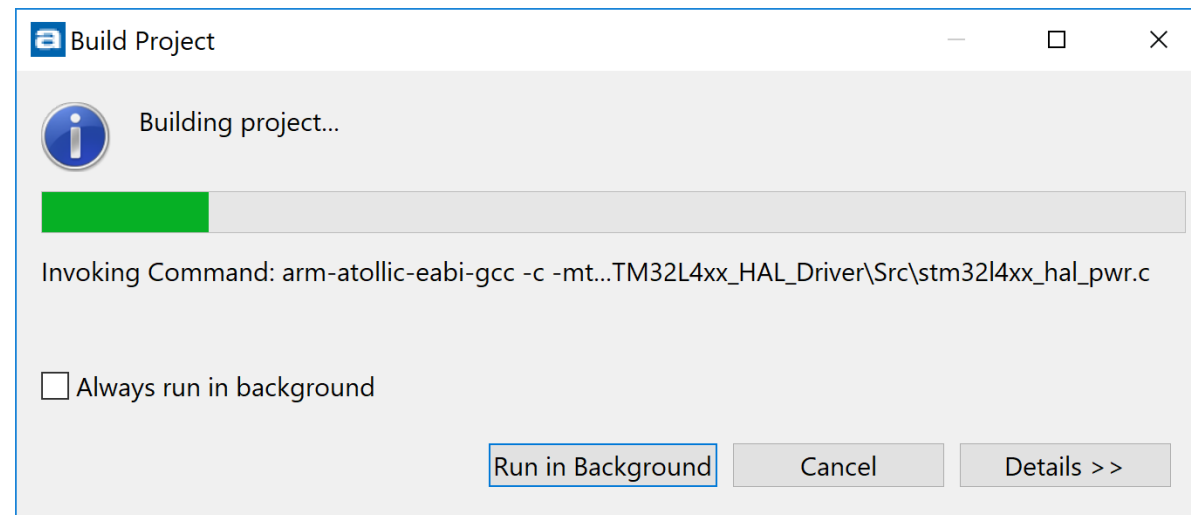
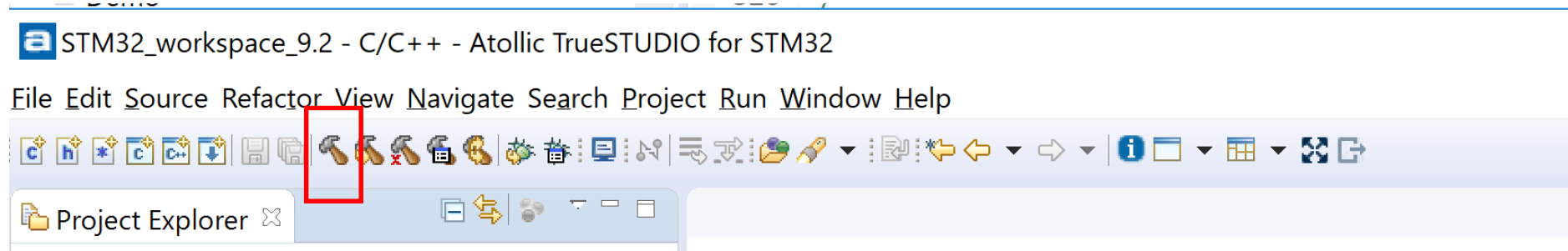
Step 12. Select “Open Project”



Step 13. Resulting Project



Step 14. Build Project



Step 15. Results of Build

Build Analyzer Static Stack Analyzer Problems Tasks Console Properties

CDT Build Console [Embedded-C-Assignment-1]

```
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -c -mthumb -mcpu=cortex-m4 -mfloat-abi=hard -mfpu=fpv4-sp-d16 -std=gnu11 -D__w
arm-atollic-eabi-gcc -o Embedded-C-Assignment-1.elf Drivers\STM32L4xx_HAL_Driver\Src\stm32l4xx_hal.
C:\Program Files (x86)\Atollic\TrueSTUDIO for STM32 9.2.0\ide\jre\bin\java -jar C:\Program Files (x
Generate build reports...
```

Print size information

text	data	bss	dec	hex	filename
11204	12	3180	14396	383c	Embedded-C-Assignment-1.elf

Print size information done

Generate listing file

Output sent to: Embedded-C-Assignment-1.list

Generate listing file done

Generate build reports done