



Microcontrollers & Microprocessors Starter Guide

Advanced Computing Lab HCMUT

<https://www.fb.com/groups/aclabhcmut>

301-B9 Ly Thuong Kiet Campus:
268 Ly Thuong Kiet, Ward 14, District 10, City. Ho Chi Minh City

caotientatx@gmail.com
trongnhanle@hcmut.edu.vn

Table of contents

Set Up Your Environment.	2
IDE: STM32CubeIDE.	2
STM32 ST-LINK Utility.	2
Proteus.	2
VSCode and Platformio(Optional).	2
Lotus STM32F103 Dev Board Overview.	3
ST-LINK & STM32F103 MCU.	3
Built-In Leds and Buttons.	4

Set Up Your Environment.

IDE: STM32CubeIDE.

STM32Cube IDE is a **graphical tool** for:

- Configuring STM32 peripherals and **generating initialization code**.
- Setup of peripherals, clock trees, and middleware like USB or RTOS.
- Support Debugging.



You need to create a MyST account to use the software.

STM32 ST-LINK Utility.

For the Lotus STM32F103RB board, we need STM32 ST-LINK Utility to update ST-LINK to the latest version.

Proteus.

Proteus is a simulation software used for designing and testing electronic circuits. In this course we will use proteus to test our firmware.

VSCode and Platformio(Optional).

We can also use Visual Studio Code with the PlatformIO extension for coding. However, for beginners, we recommend STM32CubeIDE as it provides a graphical interface for configuring STM32 peripherals and generating initialization code, making development more intuitive.



Template for Lotus F103 Board: https://github.com/ACLAB-HCMUT/Template_LotusF103RB_Platformio

- We connect to ST-LINK via USB interface, ST-LINK then connect to our main MCU via SWD interface.

Built-In Leds and Buttons.