

Technical Workshop

Academic High Altitude Conference

Ethan Harstad and Matthew Nelson

Stratospheric Ballooning Association

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Outline

- 1 Introduction
 - What is mbed
 - Nucleo Development Board
 - An Example Project

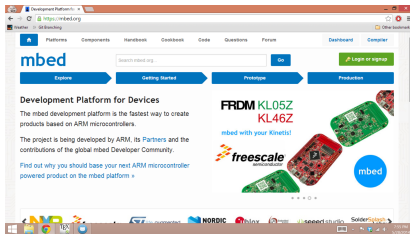
What is mbed

The mbed development platform is a collection of open source hardware and software to allow rapid ARM based prototyping.

- Professional online compiler lets you work from any computer
- Integrated version control system lets you easily find and use open source libraries
- CMSIS based APIs for core and peripheral functions let you work high level or bare metal
- Hardware abstraction layer insulates your application code from hardware changes

Essentially a high performance Arduino with highly integrated tools to save you time

Register on mbed



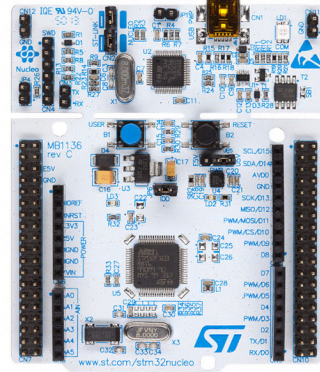
- 1 Navigate to <http://www.mbed.org>
- 2 Click the green login or signup button
- 3 Click the signup button
- 4 Follow the prompts
- 5 Confirm your e-mail address

Everyone should have an account on mbed. You can create a team to share programs between users in your organization.

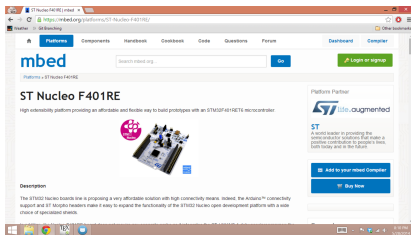
Nucleo Development Board

The Nucleo development board combines a USB programmer with a powerful STM32 processor and Arduino compatible headers

- ARM Cortex-M4 with FPU at 84 MHz
- 512 KBytes flash memory
- 12bit ADC at 2.4 Msps with up to 10 channels
- Up to 3xUART, 3xI2C, 4xSPI interfaces



Add Nucleo to Your Account

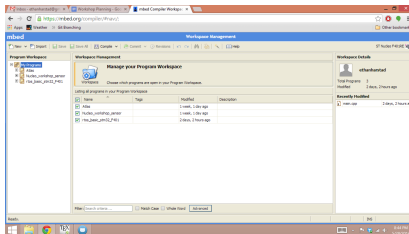


- 1 Connect your Nucleo to your computer
- 2 Open the external drive that connects
- 3 Open the mbed.htm file
- 4 Click "Add to Your mbed Compiler"

Notice

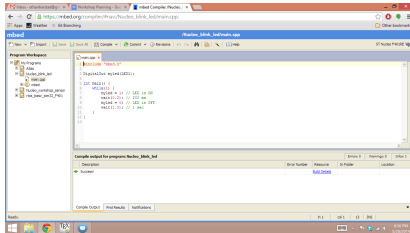
You only need to do this once!

An Example Program



- 1 Navigate to <http://www.mbed.org>
- 2 Click the Compiler button
- 3 Click New and select New Program
- 4 Choose "Blinky LED" as the program template
- 5 Name the program anything you desire and click OK

Compile and Upload Your Program



Tip

Set your browser's download location to the Nucleo to save time while debugging

- 1 Click Compile
- 2 A file will be downloaded
- 3 Move this file to the Nucleo external drive
- 4 The LED will flash red/green while programming
- 5 When the 'LED is solid green, your program has started successfully!

Outline

1 mbed Platform

What is mbed?

Outline

1 Open Session

What is mbed?