**Software STM**

A comprehensive STM32 software HAL library together with various software examples are can use with the STM32 Black Pill Development boards, and seamlessly work with a wide range of development environments including IAR EWARM, Keil MDK-ARM, embed and GCC/LLVM-based IDEs. For programming of STM32 Black Pill need to use an ST-Link debugger/programmer.

**Software for Arduino IDE**

If board already have the STM32Duino bootloader, can programming with Arduino IDE, via USB connection to PC.

Programming with Arduino IDE the board is easy — the community had done a lot of work to create a support package for it. You do need a recent version of the Arduino IDE.

Steps:

* Download and install the official Arduino IDE. Versions 1.6.10 till 1.8.5 have been reported to work fine.
* If you already have the Arduino IDE installed and it's a newer version, see the Boards Manager package method of installation.
* Note: this method is deprecated and not supported in forum!
* Run Arduino IDE, and open the menu Tools -> Boards -> Boards Manager. Install the "Arduino SAM Boards" package (includes the Arduino Due) from the list of available boards. This installs compiler support for ARM Cortex-M3.
* Download a zip file containing the Arduino STM32 files from here.
* Unzip the content of the zip file, and place the Arduino\_STM32 folder to [Arduino sketches folder]/[hardware]/[Arduino\_STM32]. Create the 'hardware' folder if it does not exist yet.

Example how the path should look like: C:\Users\<user>\Documents\Arduino\hardware\Arduino\_STM32

**Pinout and interface**

With **32 GPIO – 15 PWM pins, 10 analog inputs**, 3 UARTs (hardware serial ports), 2 I2C and 2 SPI interface, and a larger memory space 256KB for your code.