

Duino - Open Source Hardware Boards

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ARDUINO-MAPLE-PINGUINO

What is Arduino?

Arduino is an open-source electronics prototyping platform, designed to make the process of using electronics in multidisciplinary projects more accessible. The hardware consists of a simple open hardware design for the Arduino board with an Atmel AVR processor and on-board I/O support. The software consists of a standard programming language and the boot loader that runs on the board. Arduino hardware is programmed using a Wiring-based language (syntax + libraries), similar to C++ with some simplifications and modifications, and a Processing-based IDE. More information could be found at the creators web page <http://arduino.cc/> and in the Arduino Wiki <http://en.wikipedia.org/wiki/Arduino> Summary: Arduino is easy for beginners with lack of Electronics knowledge, but also does not restrict the professionals as they can program it in C++ or in a mix of Arduino/C++ language.

The startup is easy because there are thousands of projects and there is nearly no field where Arduino enthusiasts have not already explored.

Arduino had inspired two other major derivatives - MAPLE and PINGUINO. Based on 8-bit AVR technology, the computational power of Arduino boards is modest, this is why a team from MIT developed the **MAPLE** project which is based on a Cortex M3 STM32F103RBT6 microcontroller. While MAPLE IDE ceased to exist it paved the way for similar environments like stm32duino and Espruino.

In parallel with Arduino another project was started called **PINGUINO**. This project choose the first implementation to be with PIC microcontrollers. The reason was that AVR's were hard to find in some parts of the world (like South America) so you will see that lot of **PINGUINO** developers are from there. PINGUINO project founders decided to go with Python instead of Java as a processing language. For the moment **PINGUINO** is much more flexible than Arduino as it is not limited to 8bit. Currently the IDE which have GCC in background can support 8-bit PIC microcontrollers, 32bit PIC32 (MIPS) microcontrollers and ARM7/CORTEXM3 microcontrollers which also makes **PINGUINO** very flexible because once you make your project, you can migrate easily through different hardware platforms without being connected to single microcontroller manufacturer. The PINGUINO project can be found at <http://www.pinguino.cc>