

Arduino Vs Raspberry pi:

Arduino and Raspberry are two of the most popular single-board computers. Both have their own strengths and weaknesses and choosing between the two depends on the specific requirements of a project.

Arduino

■ Arduino Uno is a microcontroller board that was designed to provide a simple & accessible platform for beginners to learn Electronics and programming.

■ a straightforward programming environment based on a simplified version of the «C».

■ a limited number of (I/O) pins that make it well suited for simple projects that require basic control.

Raspberry Pi

on the other hand, is a small and inexpensive single board computer that runs a full operating-system, such as Raspbian, which is based on Linux.

■ unlike Arduino: Raspberry has a more powerful processor, more memory, and a greater number of (I/O) pins.

■ more it ideal for complex projects that requires higher processing power and connectivity.

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Microcontroller different:

- Arduino Uses a microcontroller that designed to be simple and easy to use with a limited I/O
- Raspberry use a powerful system-on-a-chip (SoC)

Operating system

- Arduino has a simplified software environment known as (IDE) Arduino Integrated Development Environment. IDE is based on simplified version of C programming language.
- Raspberry on other hands runs a full operating system such as Linux; Raspberry can run multiple applications and services simultaneously.

Processor and clock speed

- Arduino uses an AVR microcontroller, with a clock speed of 16 MHz for most boards.
- Raspberry Pi 4 uses ARM Cortex-72 with clock speed of 1.5 GHz and for other models 1.2 GHz.

Ram

- Arduino boards have limited memory, 2-8 KB of Ram
- Raspberry dependent on board have, 1 GB - 512 MB - 256 MB

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- ① Flux.ai : arduino vs Raspberry Pi comparison
- ② scolar : Raspberry Pi and arduino boards in control education . Jaroslav Sobota

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