

# Getting Started with Programming with Raspberry Pi 3

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# Key Differences between Raspberry Pi 3 and Arduino

<b>Basis of Comparison between Raspberry Pi 3 vs Arduino</b>	<b>Raspberry Pi 3</b>	<b>Arduino</b>
<b>About &amp; Definition</b>	<p>The latest version of Raspberry Pi computer is Raspberry Pi 3 Model B.</p> <p>Raspberry Pi is a series of single-board computers. It is a credit-card sized computer with low cost, which plugs into a computer monitor or TV, and to operate it, a user can use standard keyboard and mouse to operate it.</p>	<p>An Arduino is a microcontroller motherboard. A microcontroller is a simple computer in that, only one program can be run at a time. It is very easy to use.</p> <p>Arduino is an open-source and prototype platform based on hardware and software which is easy to use.</p>

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<b>Board Types</b>	<p>The Raspberry Pi 3 is a series of single Board Computer. The single board consists of a fully functional computer with its dedicated memory, processor and it runs an operating system (runs on Linux).</p>	<p>The Arduino is a Microcontroller board and this board is not as powerful as Raspberry Pi 3 single board computers, but the microcontroller board can be great for quick setups. Microcontrollers are good when it comes to controlling the small devices but it is not possible to run an entire operating system.</p>

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<b>Connectivity Abilities</b>	The Raspberry Pi 3 can be connected to Bluetooth devices and the Internet right out of the box using Ethernet or by connecting to Wi-Fi.	Arduino cannot connect to Bluetooth devices and Internet without a Shield which adds Internet or Bluetooth connectivity. HATs (Hardware Attached on Top) and Shields help with this process.

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<b>Ports available in the board</b>	HDMI port, audio port, 4 USB ports, camera port, and LCD port, these help in media applications.	Arduino does not have any of the ports on the Microcontroller board. But it can be achieved by using Shields.

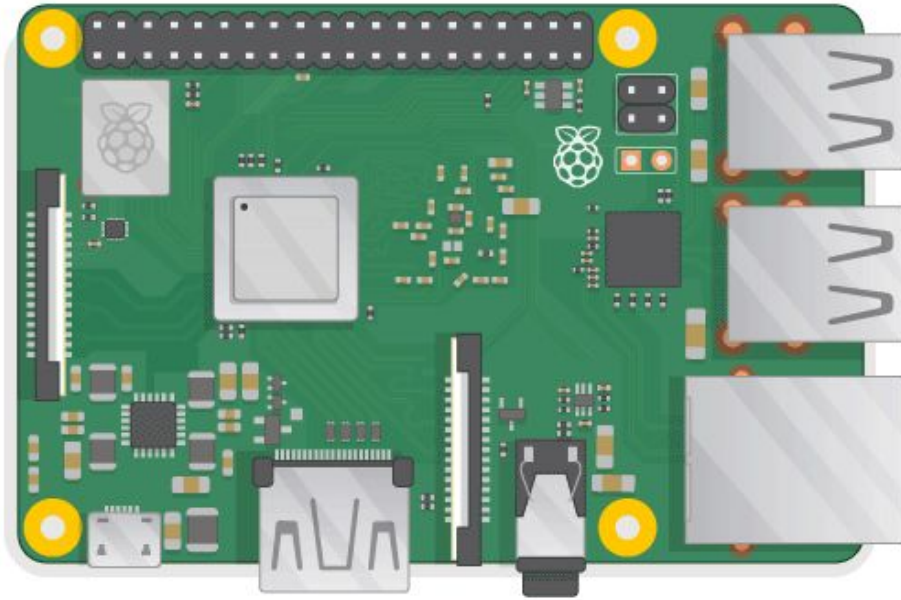
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<b>Board Applications</b>	The Raspberry Pi 3 is a set of several computers, it performs multitask several programs with its Broadcom BCM2837 SoC, means to build a complex project it needs multiple actions at a time and can be achieved easily using Raspberry Pi 3.	It cannot be achieved in Arduino since Microcontrollers have only 16 MHz.

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<b>Area of usage</b>	Raspberry Pi is best to use when a user requires fully-fledged computer means when the user wants to control a more complicated robot, doing intense calculations, performing multiple tasks.	Arduino microcontroller board can be used for simple and repetitive tasks such as functionality like garage door opening and closing of it, reading temperature and reporting it to social websites (ex: Twitter) and run a simple robot.

# Getting Ready to Work With Your Raspberry Pi 3





# What you will need

## Hardware

- A Raspberry Pi computer with an SD card
- A monitor with a cable (and, if needed, an HDMI adaptor)
- A USB keyboard and mouse
- A power supply
- Headphones or speakers (optional)
- An ethernet cable (optional)

## Software

- Raspbian, installed via NOOBS

# Meet Your Raspberry Pi 3

