

What is a Raspberry Pi Pico?

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The Raspberry Pi Pico is a microcontroller board developed by the Raspberry Pi Foundation. It was announced in January 2021 and represents a departure from the traditional single-board computers (SBCs) that the Raspberry Pi Foundation is known for, such as the Raspberry Pi 3 or 4. Instead of being a full-fledged computer, the Raspberry Pi Pico is a microcontroller board designed for embedded projects and electronics prototyping. It is closer to an Arduino than a Raspberry Pi.

The Pico includes 26 programmable general-purpose input/output (GPIO) pins, which can be used for various digital and analogue tasks. The Pico can be programmed using **MicroPython**, a lightweight version of the Python programming language designed for microcontrollers. It also supports C and other programming languages. **To know more about Pico.**

At the moment, The Raspberry Pi Pico family currently consists of four boards; Raspberry Pi Pico, Pico H, Pico W, and Pico WH. Raspberry Pi Pico W and Pico WH have on-board single-band 2.4GHz wireless interfaces.



Set up your Pico

1. Solder header pins onto the Pico, you can choose the types that you prefer.
2. Choose a programming language for your Pico, in this tutorial, we will be using **MicroPython**.
3. Download the correct MicroPython `.uf2` file for your board. **Raspberry Pi Pico** or **Raspberry Pi Pico W**
4. Push and hold the **BOOTSEL** button.
5. Plug your Pico into your computer with a USB cable.
6. It will show up as an external drive called **RPI-RP2**.
7. Copy the MicroPython `.uf2` file onto the **RPI-RP2**.
8. Pico will reboot, then you are ready to go!

Download Thonny

Thonny is an integrated development environment (IDE) for Python programming. It is designed with beginners in mind and provides a simple and clean interface for writing and running Python code. Thonny includes features such as an interactive Python shell, a built-in package manager,

and the ability to easily install and manage Python packages. [**Download here.**](#)

thonny.png

Get Started

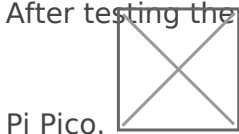
This example code will blink the built-in LED every 0.5 seconds, using the `machine` library and the `time` module.

1. Put in your code

```
from time import sleep
from machine import Pin
led = Pin("LED", Pin.OUT)    #create LED object from pin13,Set Pin13 to output

while True:
    led.value(1)              #Set led turn on
    time.sleep(0.5)           #stay on for 0.5 seconds
    led.value(0)              #Set led turn off
    time.sleep(0.5)           #stay off for 0.5 seconds
```

2. Choose the board and port at the right bottom corner. **thonny-2.png**
3. You can hit the green play button now, it will be blinking!
4. After testing the code and you are happy about it, save the code as `main.py` on Raspberry



Pi Pico.

5. Pico will run any code named `main.py` automatically whenever it is powered. **But** remember to save a file with an identifiable file name on your computer, otherwise you will end up with a bunch of `main.py` without knowing what they do.
6. At this point, you don't need your computer anymore. You can power the Pico with a phone charger or battery.

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