

Python usage

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Python is an interpreted, object-oriented, high-level programming language with dynamic data types.

The Python3 environment is pre-installed on the Raspberry Pi, so I won't introduce how to install it here!

1. Interactive mode

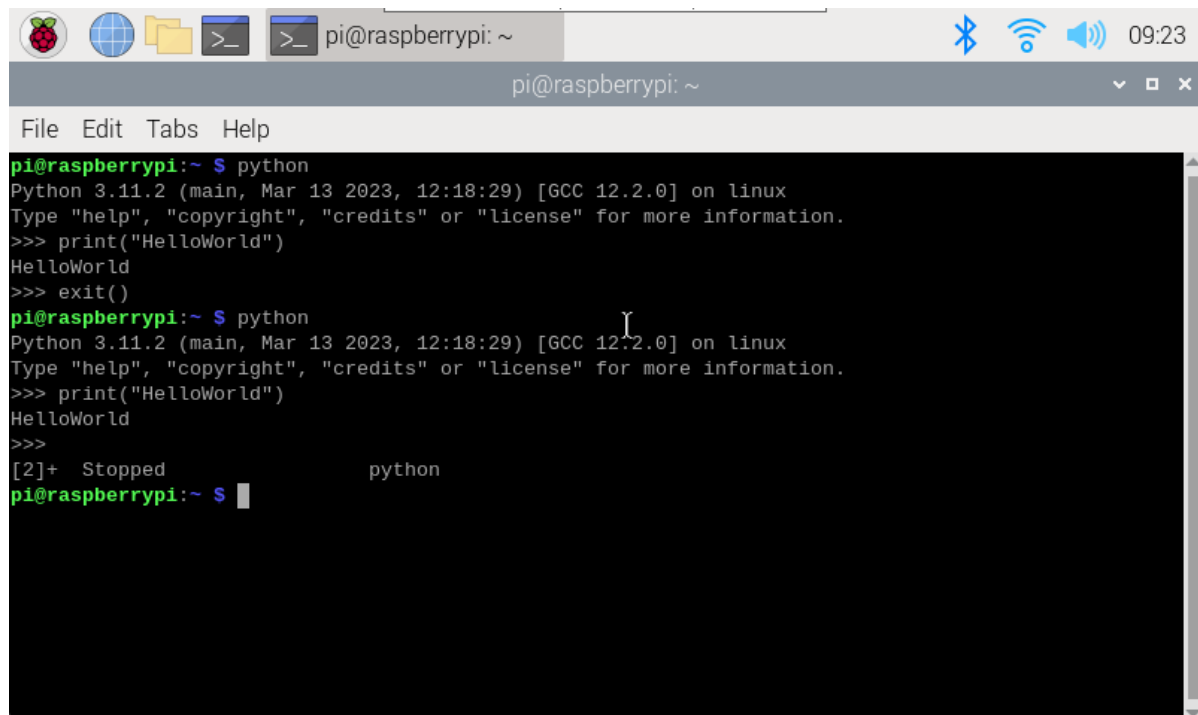
In Python, Python code entered in interactive mode is executed immediately and the results are output.

Good for quickly trying out and testing code

Enter the python command on the command line or terminal to enter interactive mode:

```
python
```

Press Ctrl+Z or enter exit() to exit this mode!



The screenshot shows a terminal window on a Raspberry Pi. The window title is 'pi@raspberrypi: ~'. The terminal output shows the following sequence of commands and responses:

```
pi@raspberrypi:~ $ python
Python 3.11.2 (main, Mar 13 2023, 12:18:29) [GCC 12.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> print("HelloWorld")
HelloWorld
>>> exit()
pi@raspberrypi:~ $ python
Python 3.11.2 (main, Mar 13 2023, 12:18:29) [GCC 12.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> print("HelloWorld")
HelloWorld
>>>
[2]+  Stopped                  python
pi@raspberrypi:~ $
```

2. Script mode

By writing a Python script file (with the .py suffix), you can save multiple lines of code in the file, and then execute these codes through tools such as the command line or an integrated development environment (IDE).

- Create new folders and files

```
mkdir Demo_Python
cd Demo_Python/
nanoHelloWorld.py
```

-Write source code

```
# This is the first program

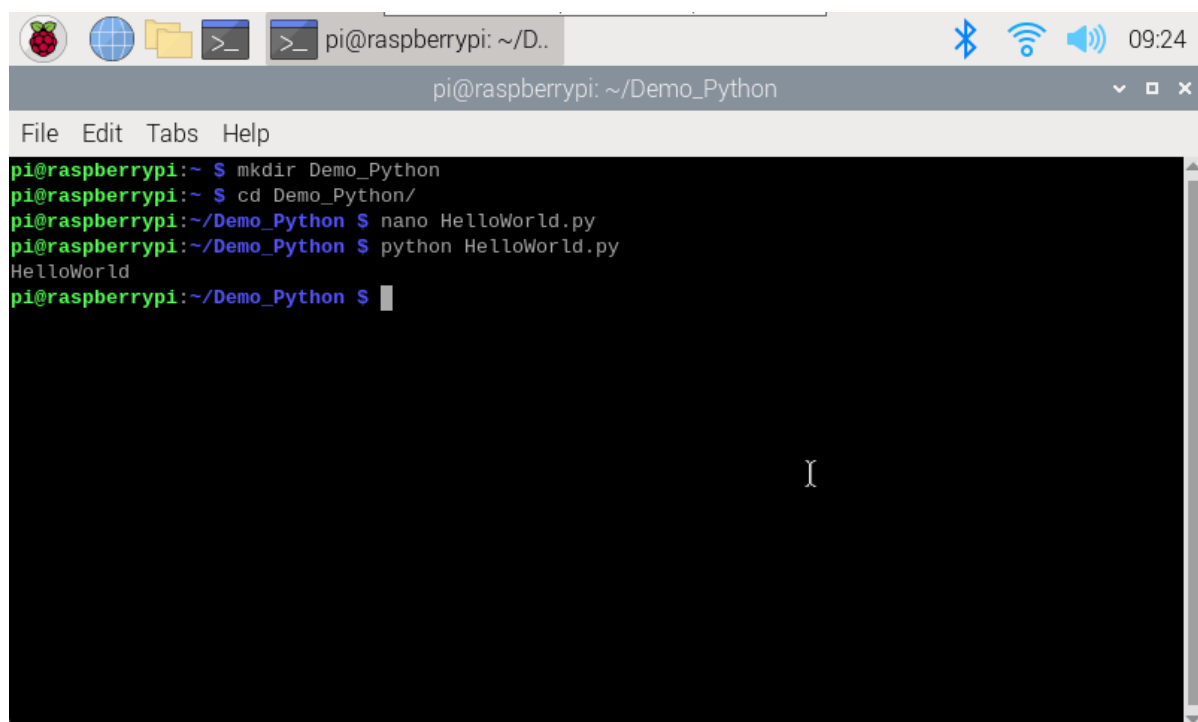
print("HelloWorld")
```

Hold down Ctrl+X, enter Y, then press Enter to save and exit!

- Run the .py file

Enter python <file_name> in the terminal

```
pythonHelloWorld.py
```

A screenshot of a Raspberry Pi terminal window. The window title is 'pi@raspberrypi: ~/Demo_Python'. The terminal shows the following commands and output:

```
pi@raspberrypi:~ $ mkdir Demo_Python
pi@raspberrypi:~ $ cd Demo_Python/
pi@raspberrypi:~/Demo_Python $ nano HelloWorld.py
pi@raspberrypi:~/Demo_Python $ python HelloWorld.py
HelloWorld
pi@raspberrypi:~/Demo_Python $
```

 The terminal has a menu bar with 'File', 'Edit', 'Tabs', and 'Help'. The background is black with green and white text. The cursor is at the end of the last command line.

3. Jupyter lab

Jupyter Lab is a web-based interactive development environment that supports multiple programming languages.

The content of Jupyter Lab is introduced later. Here we only demonstrate a simple routine. For detailed introduction, you can jump to the [\[Jupyter Lab Programming\]](#) tutorial.

