

2025 Summer Tech Internship

June 16, 2025

Thomas Trickel



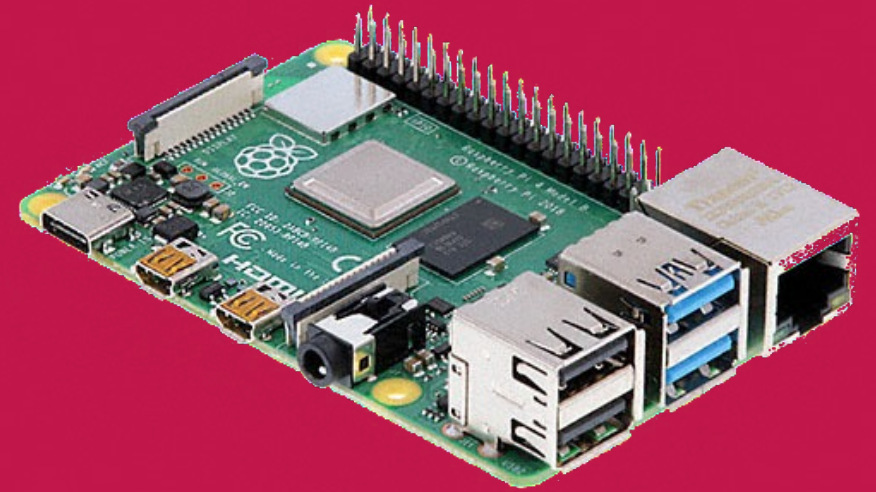
Agenda

Welcome

Raspberry Pi

Terminal

Python





Welcome

Name

"Coolest Tech" Used



My Goals

- To Have Fun
- Introduce to Computer Engineering
- No Pressure

- Chance to try out
 - Poster

<https://www.trickel.org/thomas/skc/Workshops/RPi/Jun25/>

2025 Summer Tech Internship

[2025 Summer Tech Internship Schedule](#)

Days

- [Monday](#)
- [Tuesday](#)
- [Wednesday](#)
- [Thursday](#)
- [Friday](#)

Project Templates

- [Project Work Plan Template](#)

Useful Links

- [Raspberry Pi Foundation Web Site](#)
- [Why kids still need to learn to code in the age of AI](#)
- [SunFounder Universal Maker Sensor Kit](#)
 - [SunFounder Sensor Kit V2 for Raspberry Pi Components](#)
 - [SunFounder Sensor Kit V2 for Raspberry Pi Lessons](#) scroll to find Python code
- [Adafruit IO](#)
 - [Adafruit IO Basics: Feeds](#)
 - [Adafruit IO Basics: Dashboards](#)
 - [Adafruit IO Blocks](#)

Internship Structure

Phase 1: Instruction Week

Phase 2: Project Development



Congratulations! You've been accepted to the Technology Internship at Salish Kootenai College. We're excited to have you on board and look forward to working with you this summer.

What to Expect:

- You'll learn the basics of Python programming, work with Raspberry Pi, and explore how sensors collect and store data.
- This is a hands-on learning experience—be ready to dive in, try new things, and problem-solve as you go.
- You'll be working alongside other high school and college students, so you'll have a chance to collaborate and share ideas.
- If you choose to continue after the first week, you'll have the opportunity to design an independent project and receive ongoing support.

Phase 1: Instruction Week

June 16–20, 2025 | 9:00 AM – 3:00 PM

Location: Adeline Mathias Building at Salish Kootenai College (SKC) room 120

Participants will engage in interactive workshops focused on sensors, coding, and real-world tech applications. By the end of this week, each participant is expected to identify and begin designing their individual project.

Participants who complete this phase and meet attendance requirements will receive a \$500 stipend.

Phase 2: Project Development

June 23 – July 18, 2025 | In this independent project development phase, students will work on their approved projects with the support of a mentor. Weekly group check-ins and mentor meetings help guide progress.

To be eligible for the \$1,000 project stipend, participants must:

- Attend at least **four (4) weekly group check-ins**
- **Contact their assigned mentor at least once per week**
- Complete a **project approved by their mentor**
- Participate in the **final Showcase Event** held on the SKC campus **July 26th**.

We're looking forward to a great week of learning and innovation!

Tom Trickle and Polly Dupuis
Salish Kootenai College

Please contact Polly Dupuis with any questions or concerns:
Email: polly_dupuis@skc.edu Text; 406-253-1325

Start Thinking About a Project

- Phase 2: Project Development

- Design build test
- Poster ?
- Present at TCU research symposium



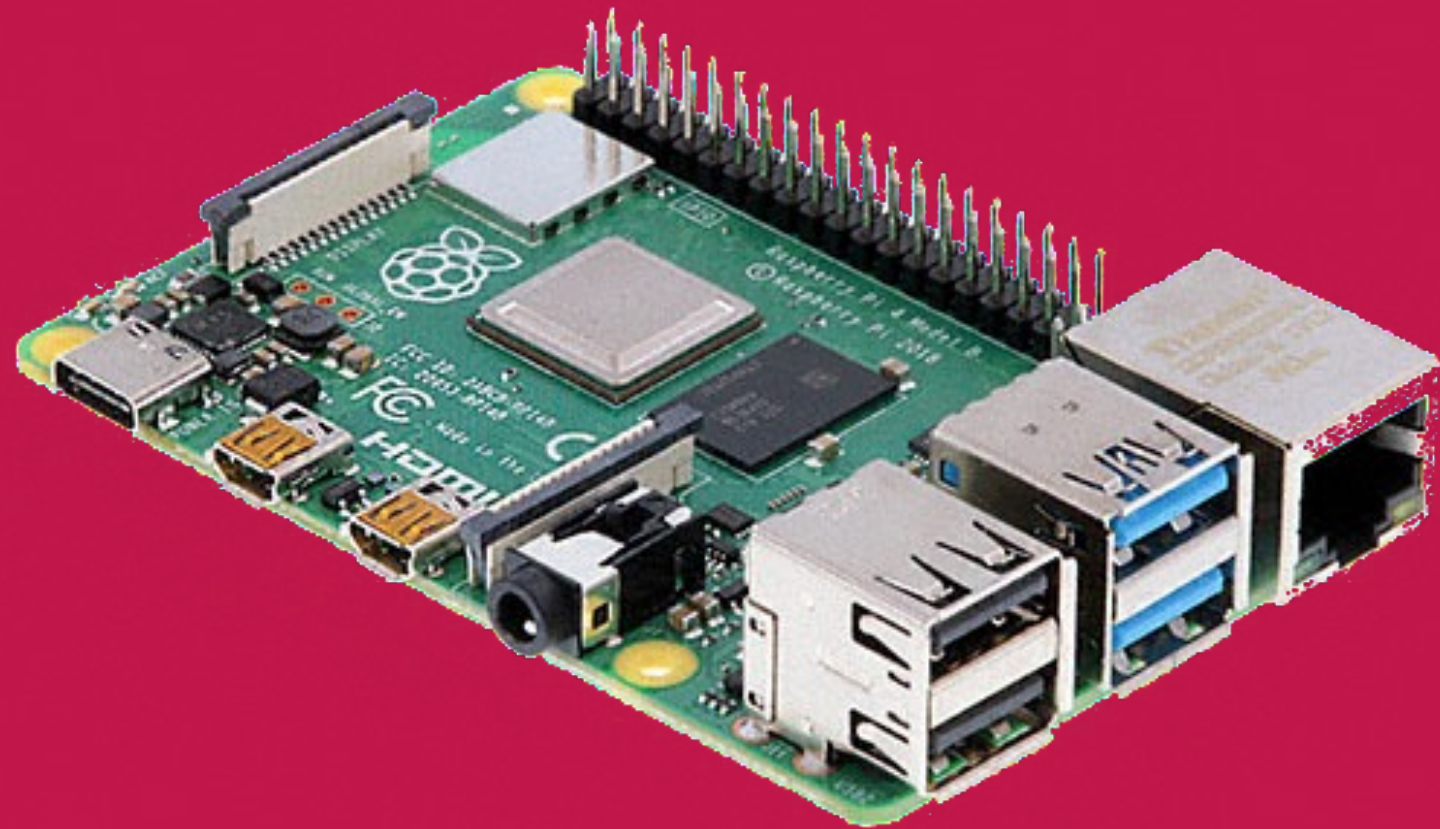
Start Thinking About a Project

- Sensors, Actuators, and Displays
 - When working with
 - think what could I use this for?



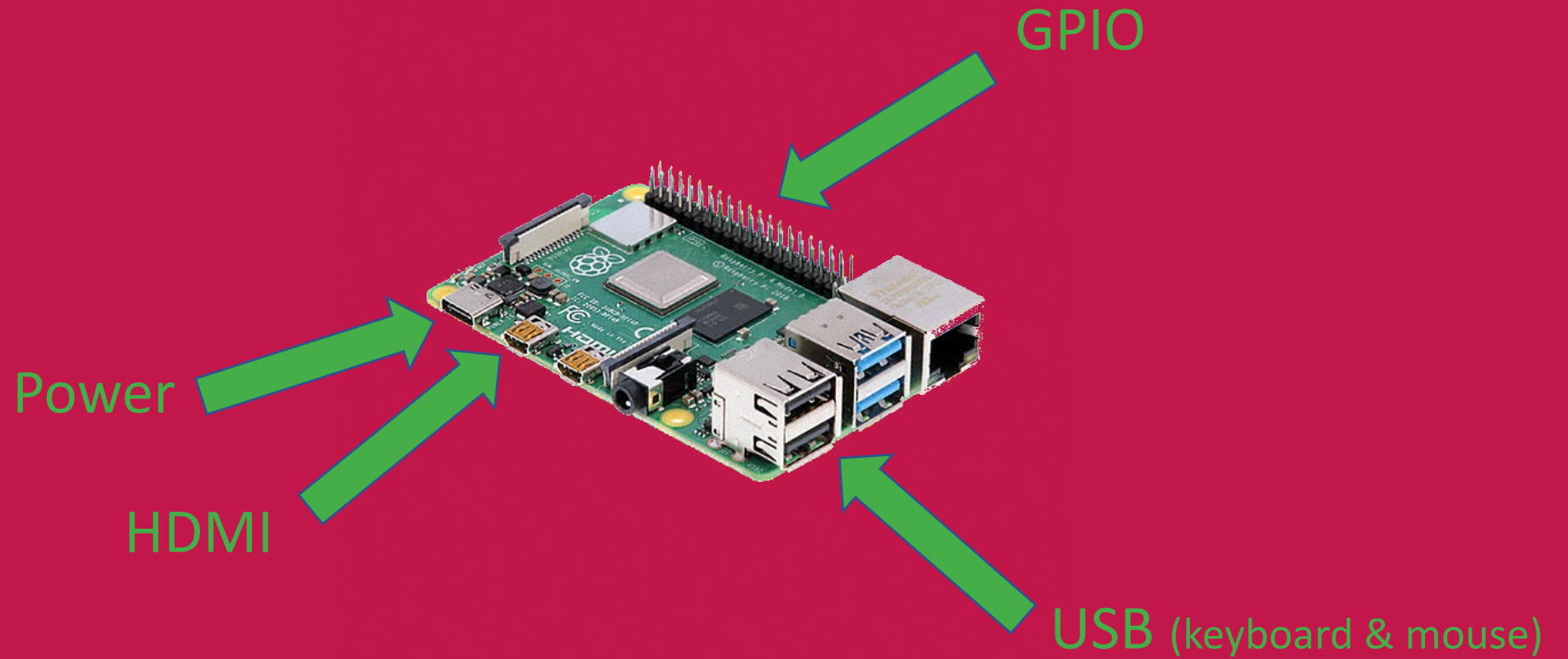
- Challenge for each Python Module
- Class will proceed through module
 - Can Challenge directly
- If challenge
 - Research Peripherals (Display, Sensor, Actuator, ?)

Raspberry Pi





Raspberry Pi

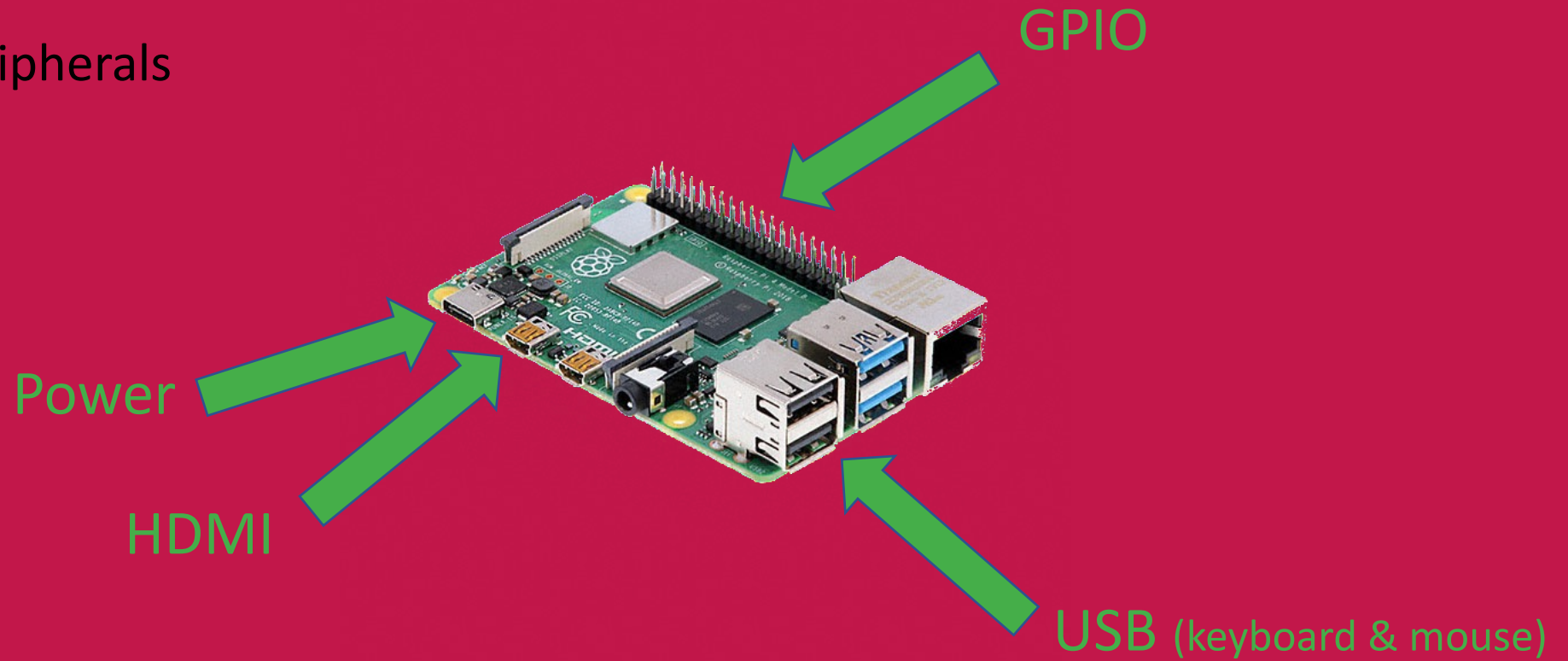




Raspberry Pi

Connect Peripherals

Power On





Excellent!



Network Access

- Enable WIFI
- Open Internet browser and accept SCK sign on

Set Date & Time

- If Date & Time are not correct
- `sudo date -s "yyyy-mm-dd hh:mm:ss"`

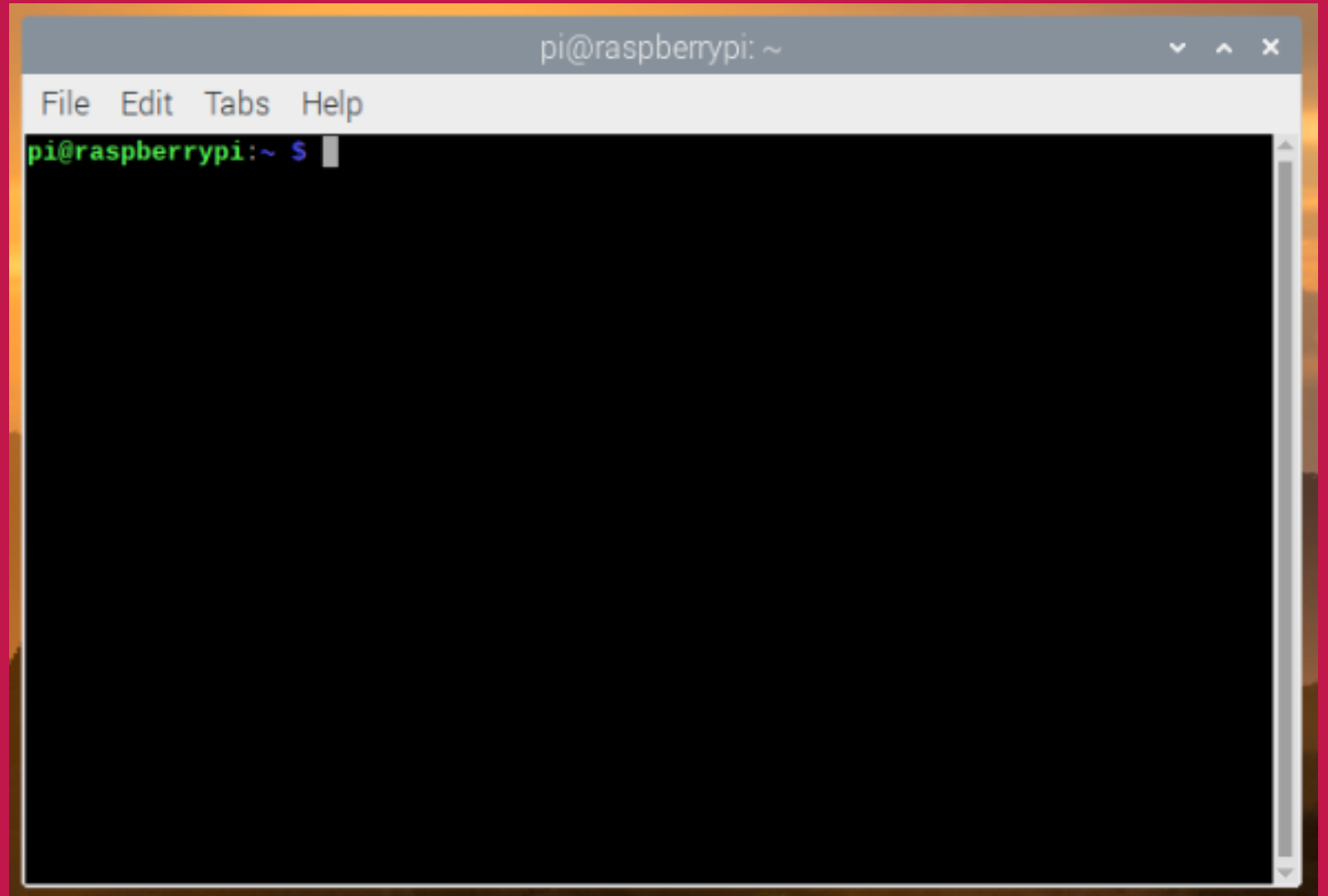


Terminal

"Old School"

Text based

Command Line Interface



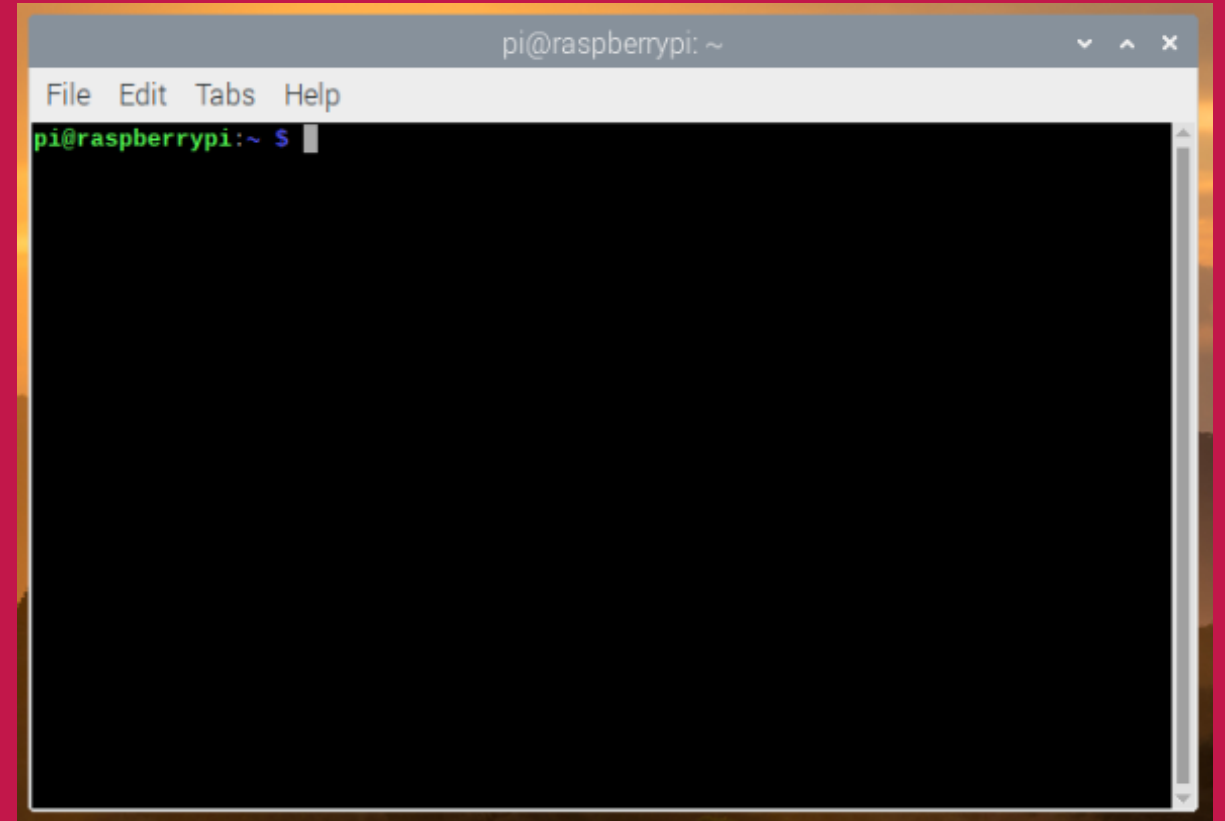


Terminal

Often shown in tutorials

Faster system management

Direct execution of scripts (programs)





Terminal

pwd

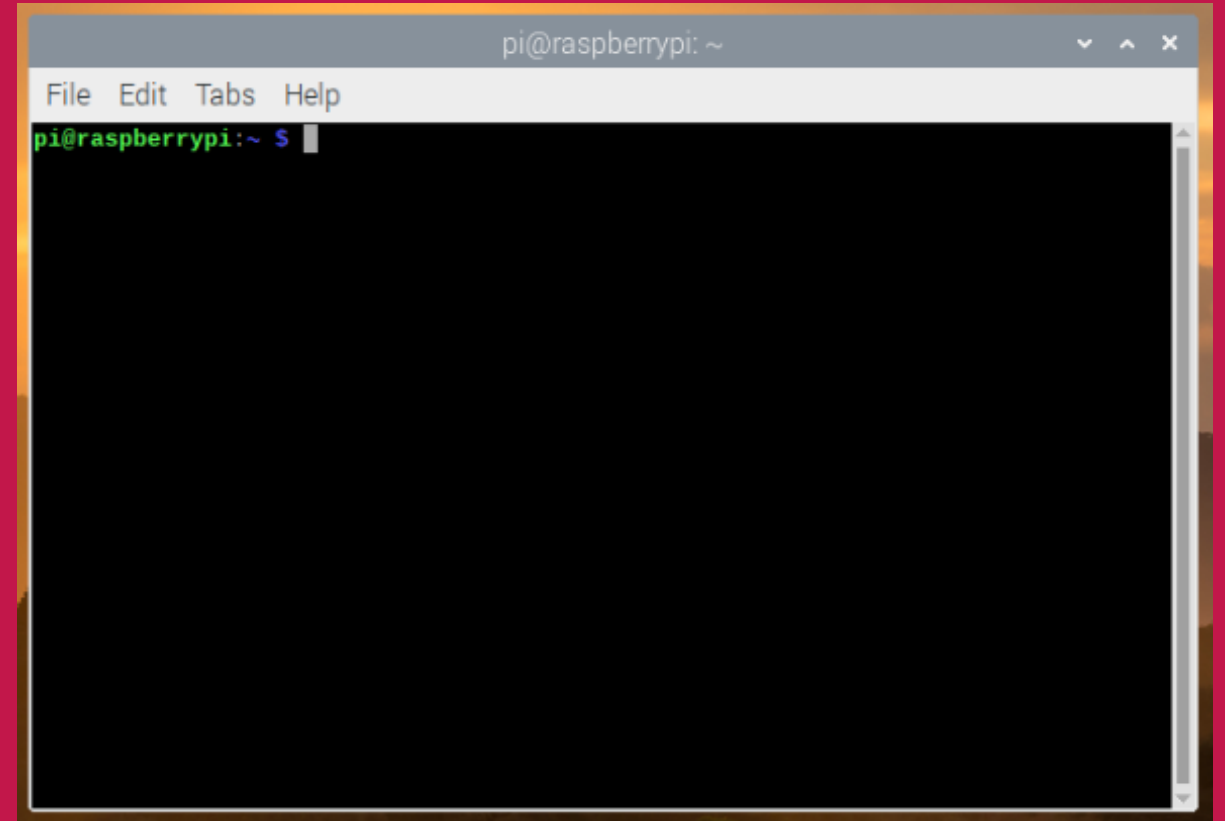
ls

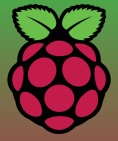
cd

mkdir

nano

chmod





Terminal

`mkdir <yourname>`

`cd <yourname>`

`nano helloworld.sh`

A screenshot of a terminal window on a Raspberry Pi. The window title is "pi@raspberrypi: ~". The menu bar contains "File", "Edit", "Tabs", and "Help". The terminal prompt is "pi@raspberrypi:~ \$" with a cursor. The terminal area is currently empty.

```
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $
```



Nano

echo "hello world"

```
GNU nano 2.0.6           File: helloworld.sh
echo "hello world"

[ Read 1 line ]
^G Get Help   ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```



Nano

echo "hello world"

<ctrl> o

<enter>

```
GNU nano 2.0.6           File: helloworld.sh

echo "hello world!"

File Name to Write: helloworld.sh
^G Get Help           ^T To Files           M-M Mac Format       M-P Prepend
^C Cancel             M-D DOS Format        M-A Append          M-B Backup File
```



Nano

echo "hello world"

<ctrl> o

<enter>

<ctrl> x

```
GNU nano 2.0.6           File: helloworld.sh
echo "hello world"

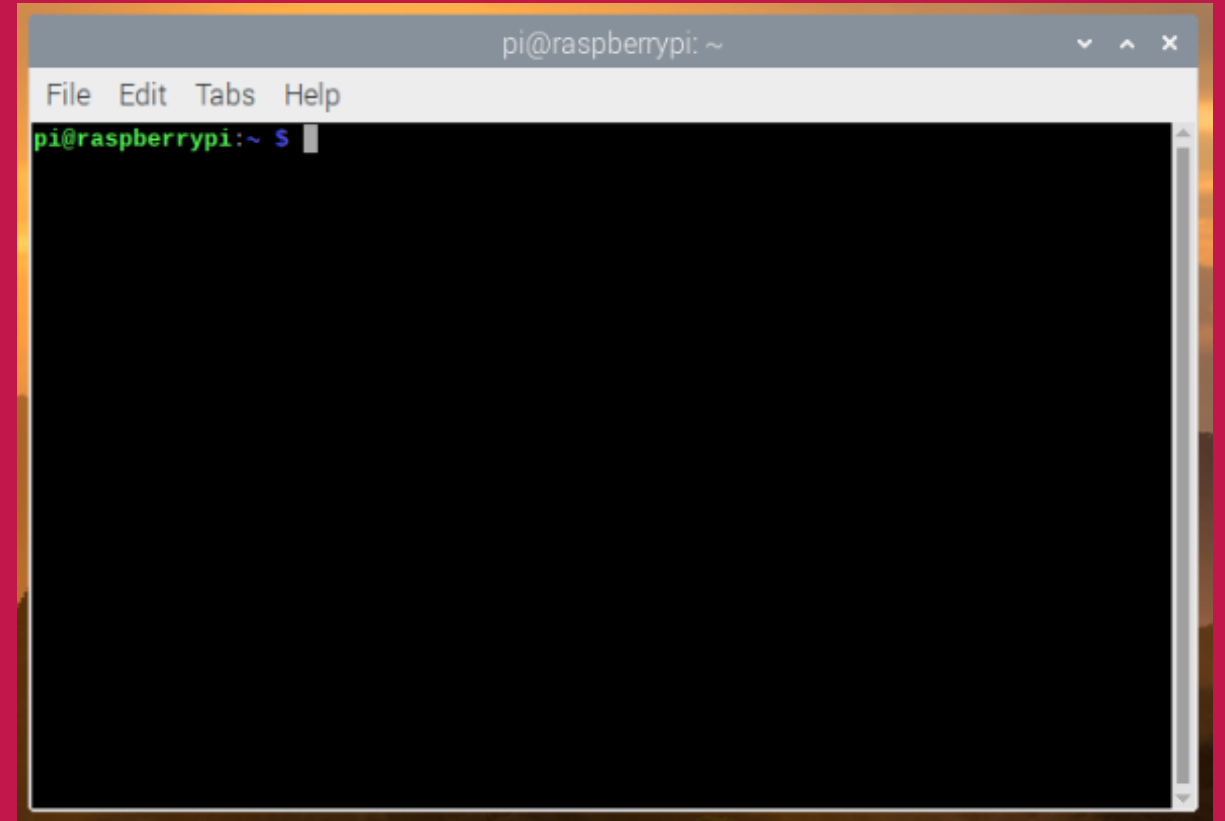
[ Read 1 line ]
^G Get Help   ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```



Terminal

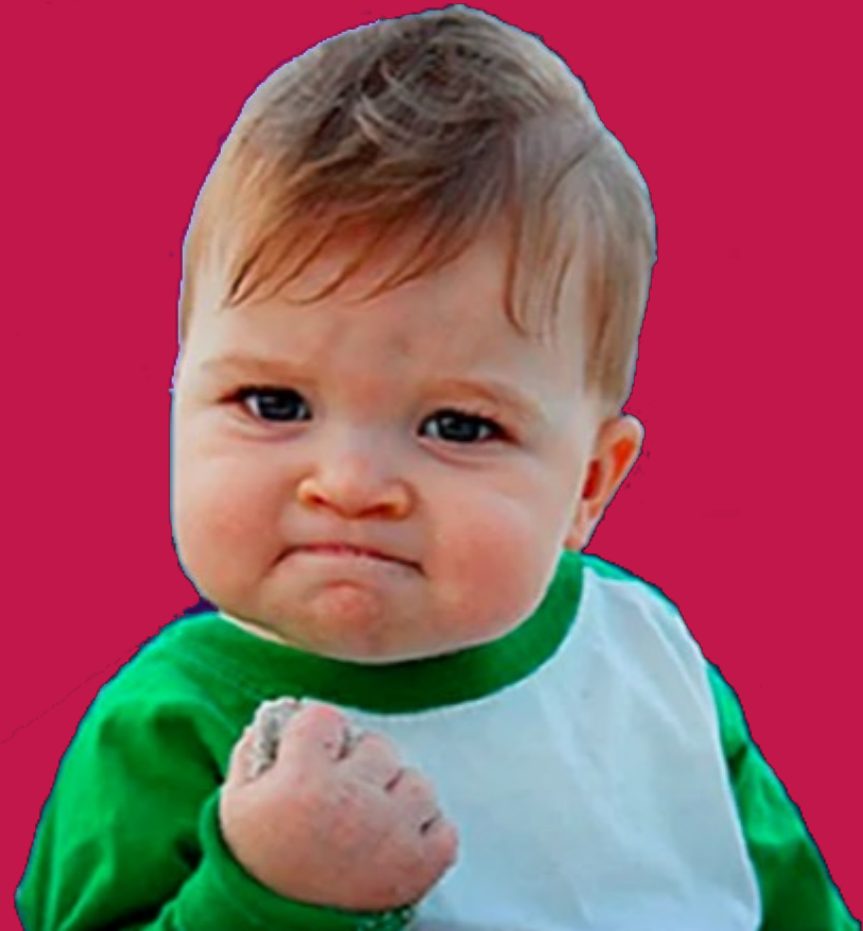
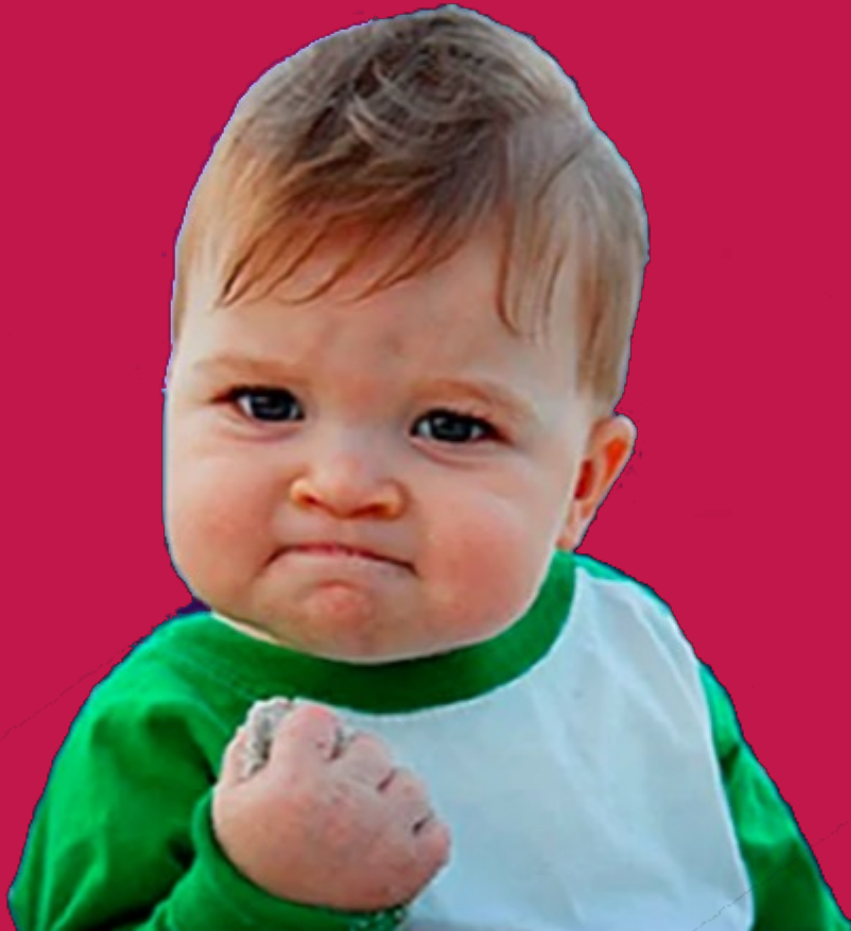
```
chmod 777 helloworld.sh
```

```
./helloworld.sh
```





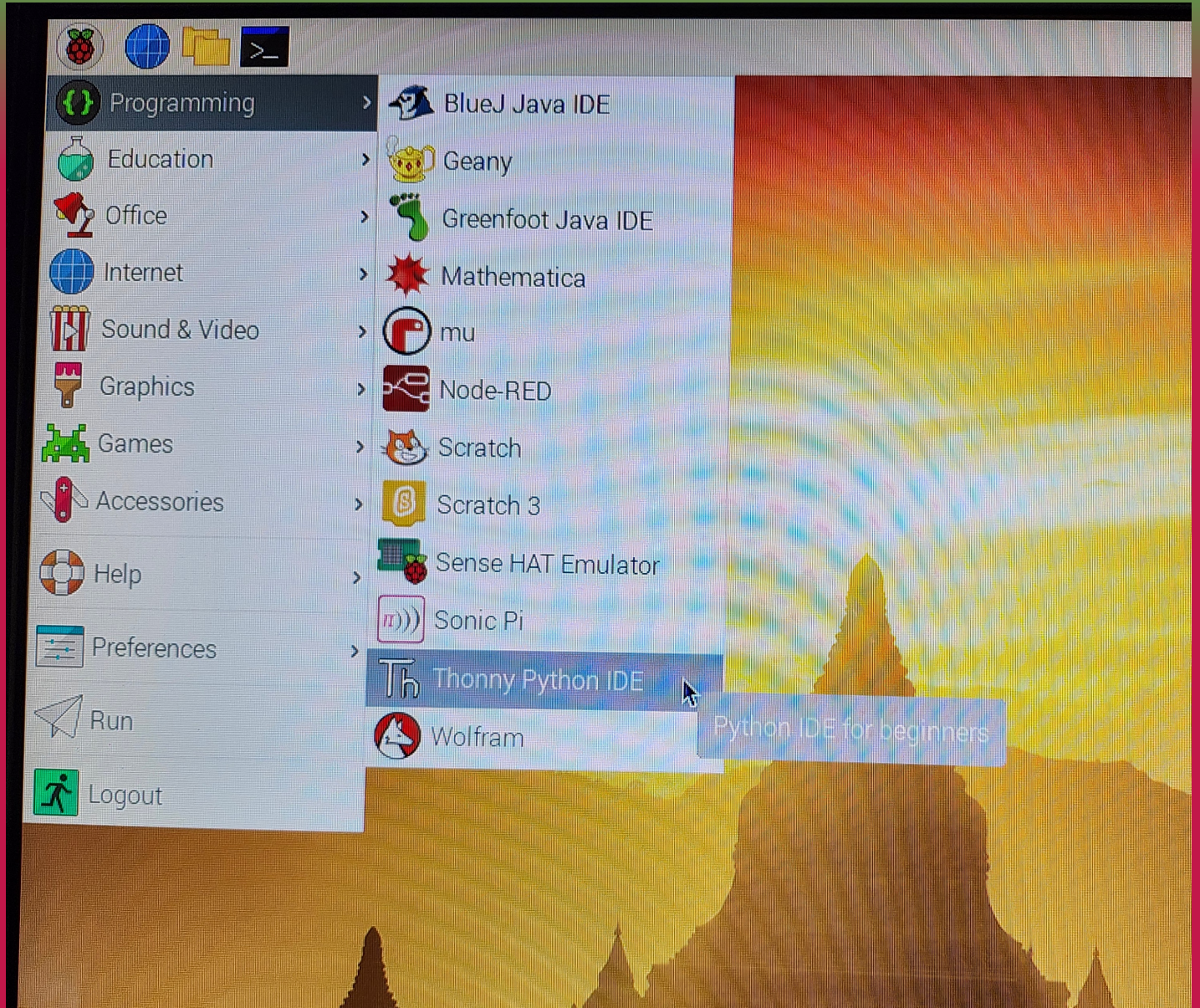
Most Excellent!





Python

Using Thony IDE





Python

Type Program
Click Run Button

Program

Run

Thonny - /home/pi/hello.py @ 1:23

File Edit View Run Tools Help

hello.py

```
print("Hello, World!")
```

Shell

>>>

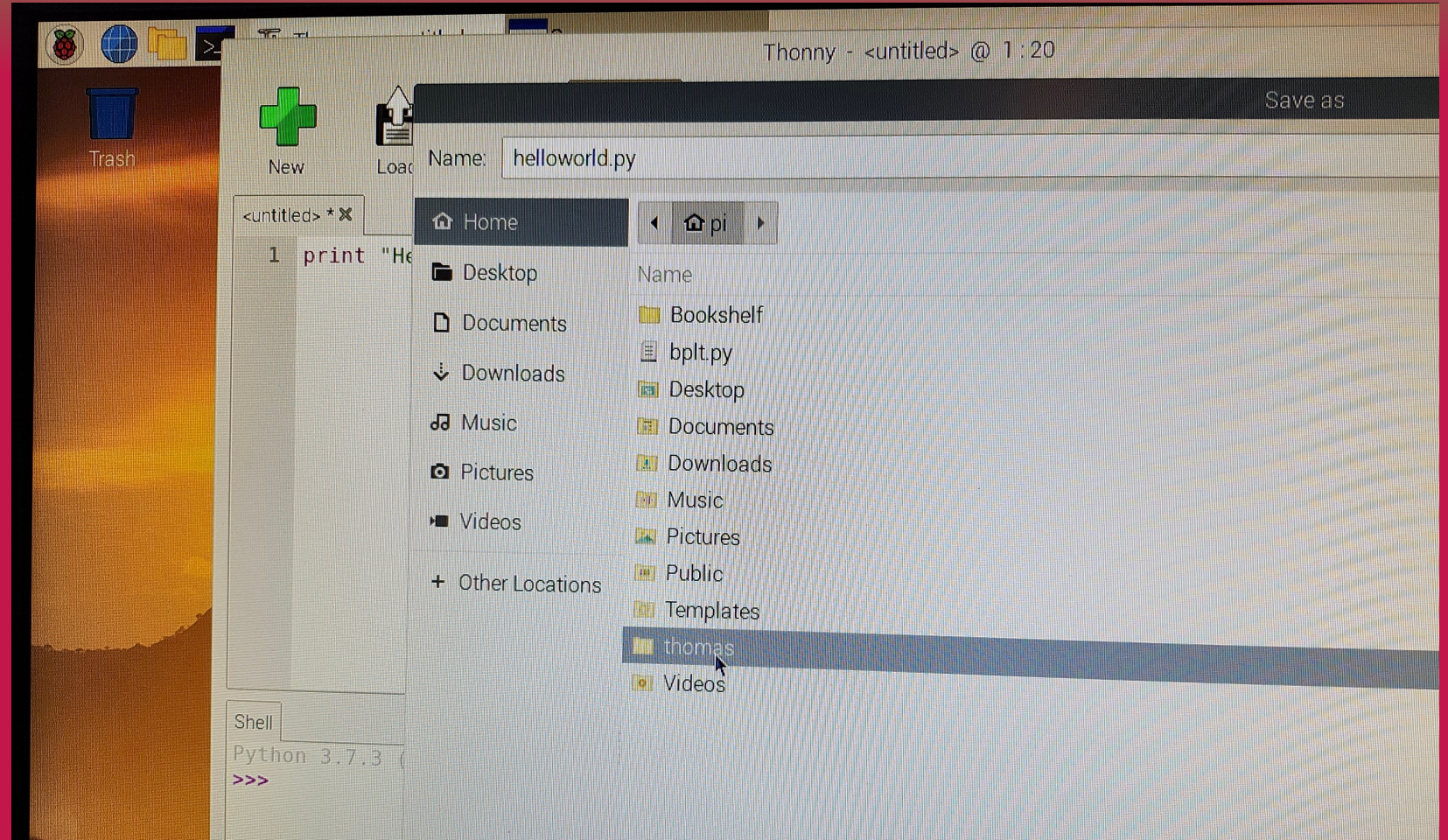


Python

Name File

Select Folder

Click OK button





Python

Run
Program



Program
output

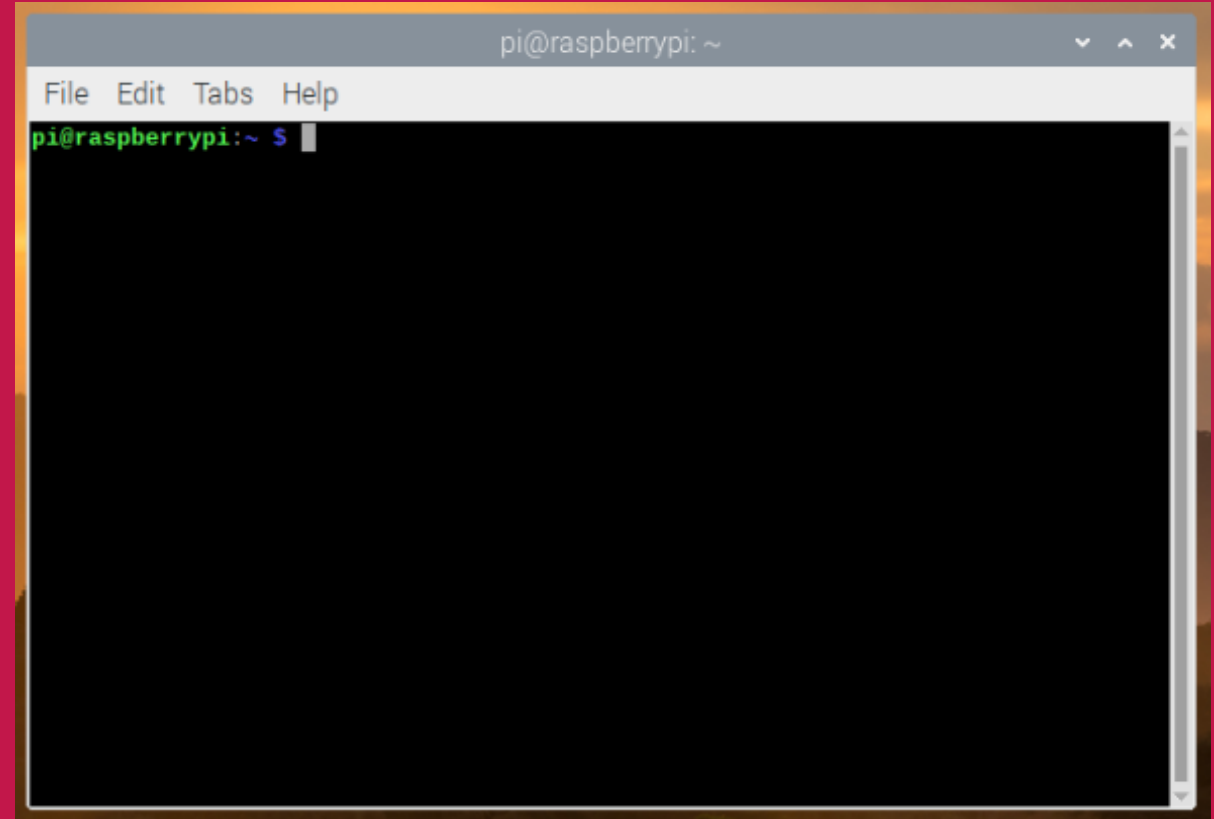


The screenshot shows the Thonny IDE interface on a Raspberry Pi. The window title is "Thonny - /home/pi/hello.py @ 1:23". The menu bar includes "File", "Edit", "View", "Run", "Tools", and "Help". The toolbar contains icons for file operations and a green play button. The code editor shows a file named "hello.py" with the code `print("Hello, World!")`. The Shell window at the bottom displays the output "Hello, World!" and the prompt `>>>`. A system tray at the top right shows the time as 18:01 and battery level at 1%.



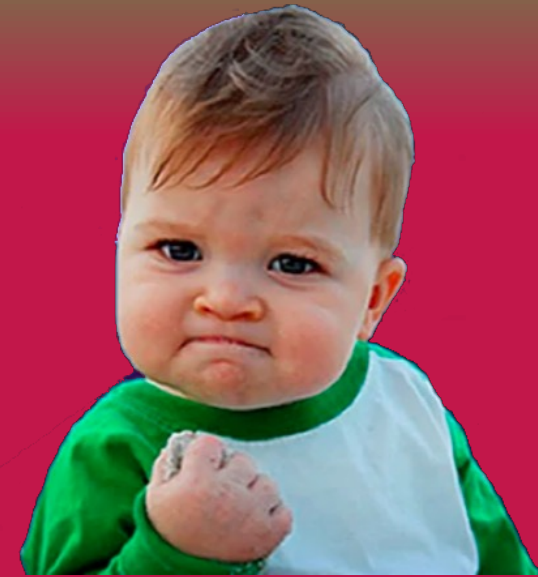
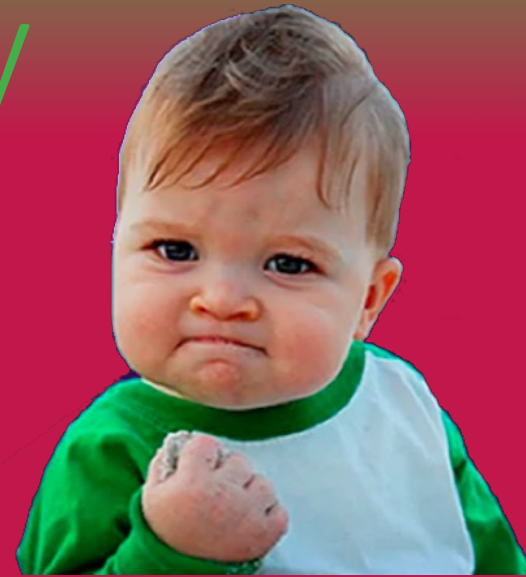
Python via Terminal

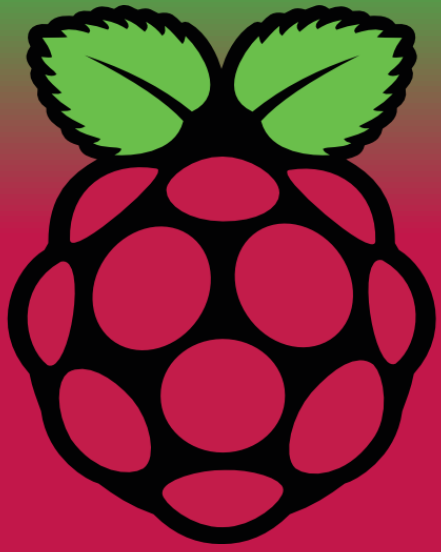
```
python ./helloworld.py
```

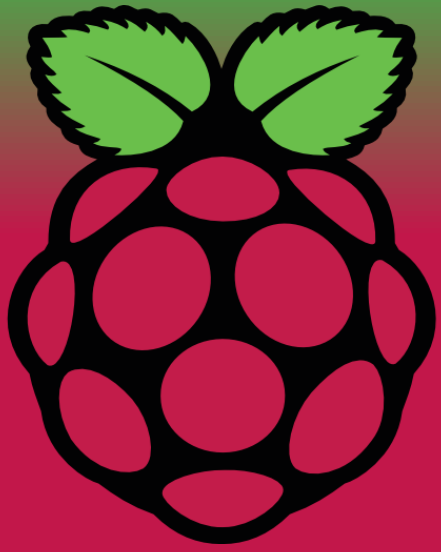




Awesomly
Excellent!







**GREAT
JOB!**

