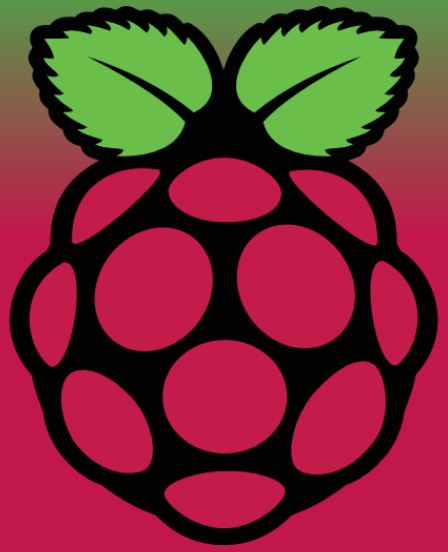


2025 Summer Tech Internship

June 16, 2025

Thomas Trickel

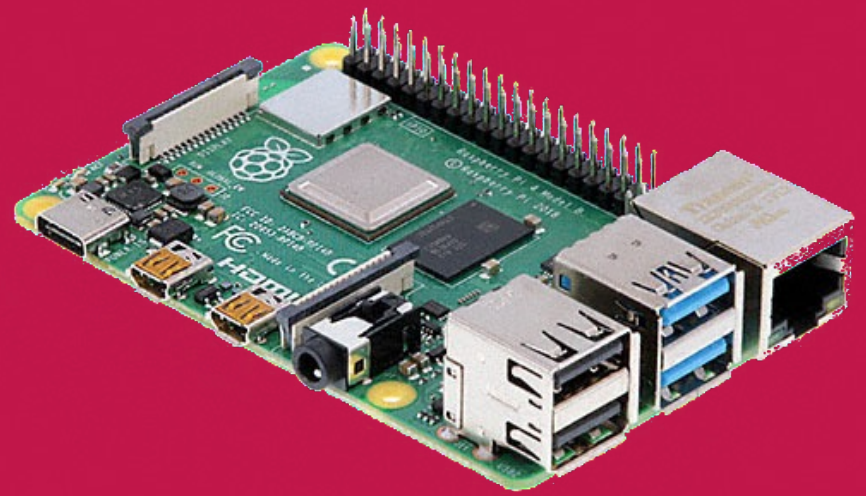
Agenda

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

SUMMER TECH INTERNSHIP

HEADWATERS TECH HUB

AMERICAN INDIAN COLLEGE FUND

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

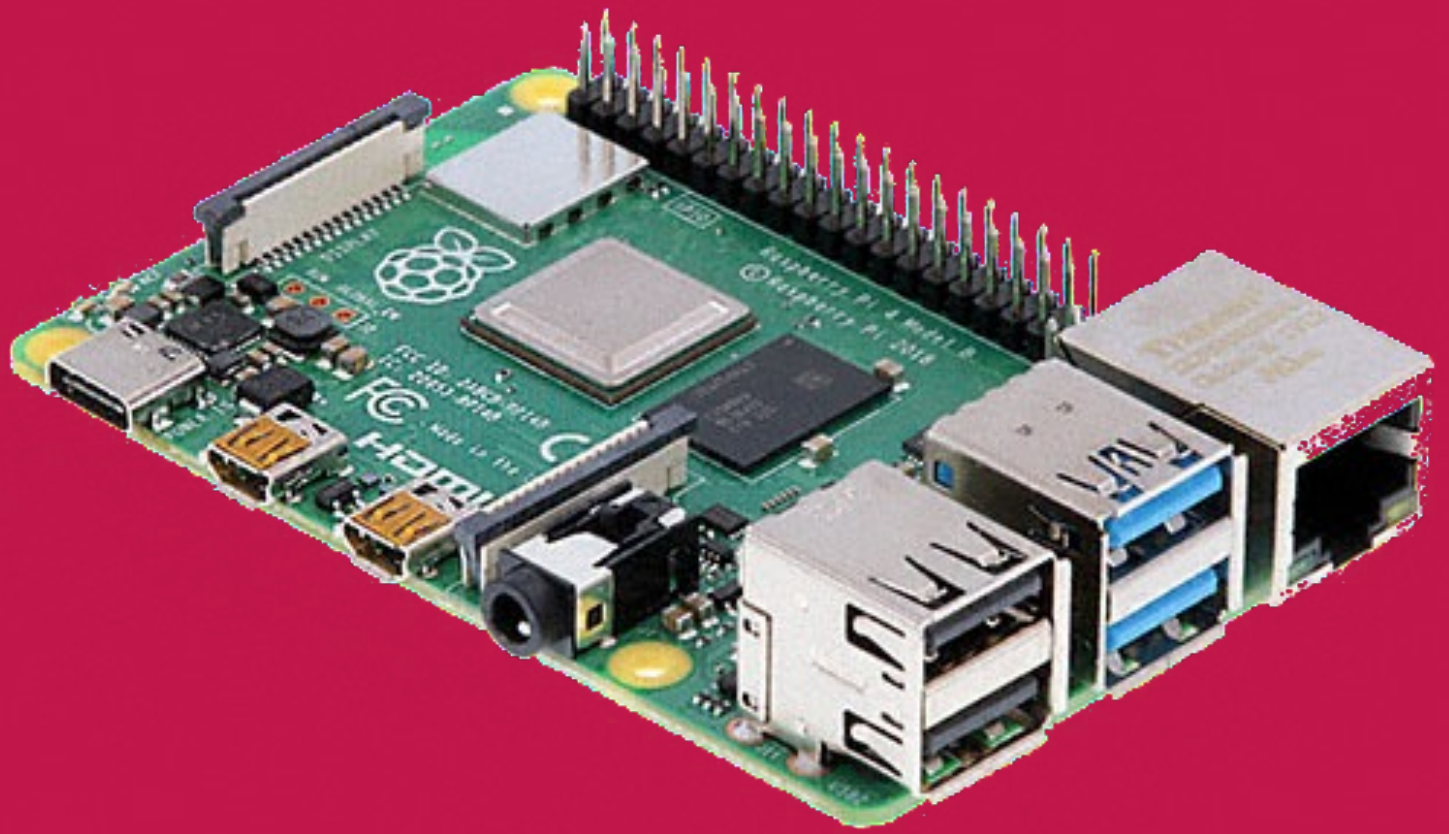
- Phase 2: Project Development
  - Design build test
  - Poster ?
  - Present at TCU research symposium

Start Thinking About a Project

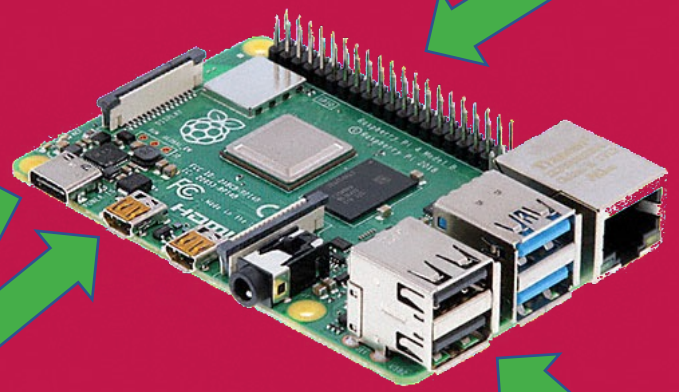
- Sensors, Actuators, and Displays
  - When working with
  - think what could I use this for?

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

Raspberry Pi



Raspberry Pi



GPIO

Power

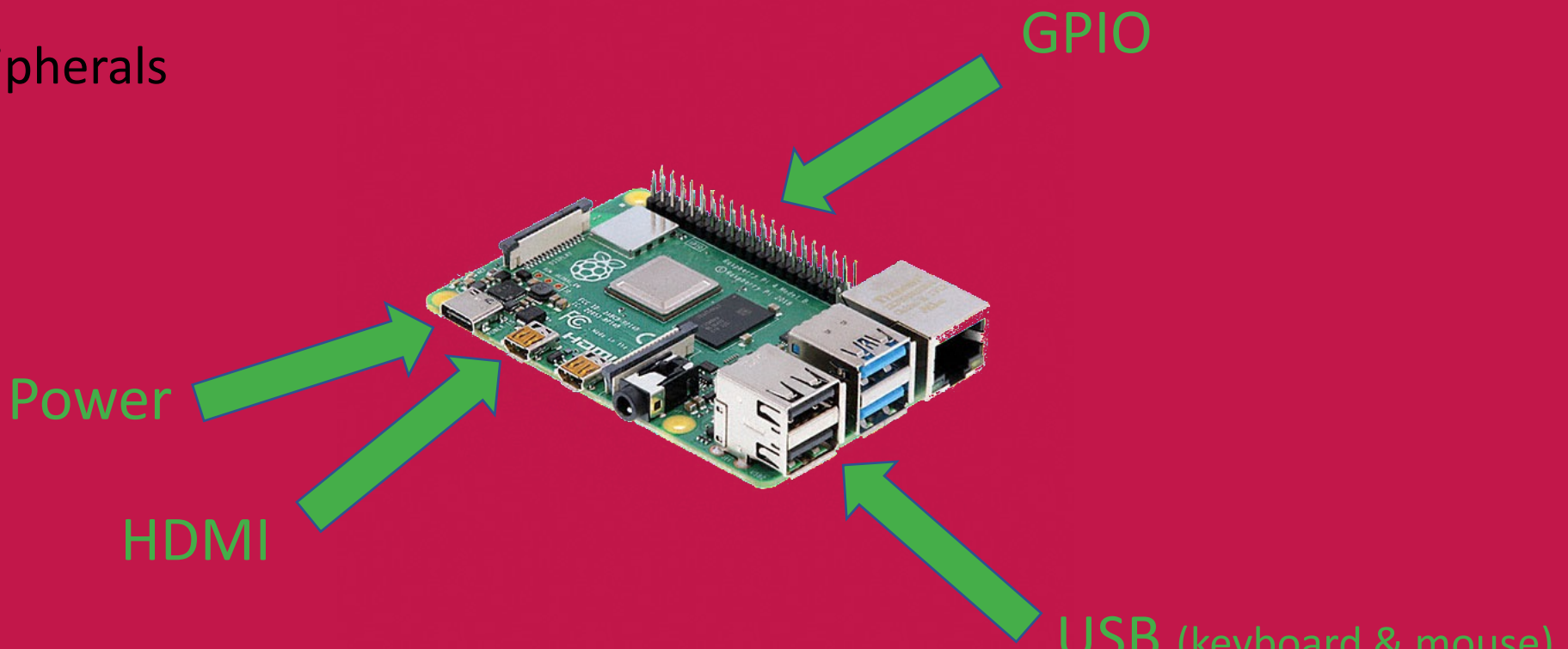
HDMI

USB (keyboard & mouse)

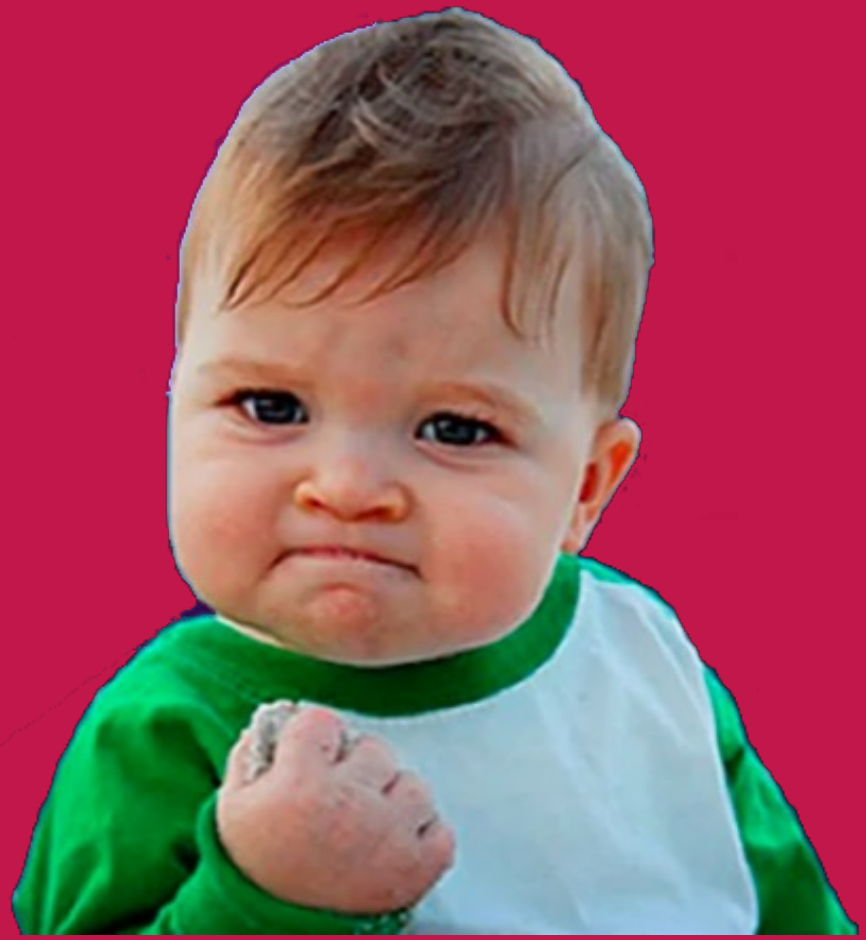
Raspberry Pi

Connect Peripherals

Power On



Excellent!



Network Access

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

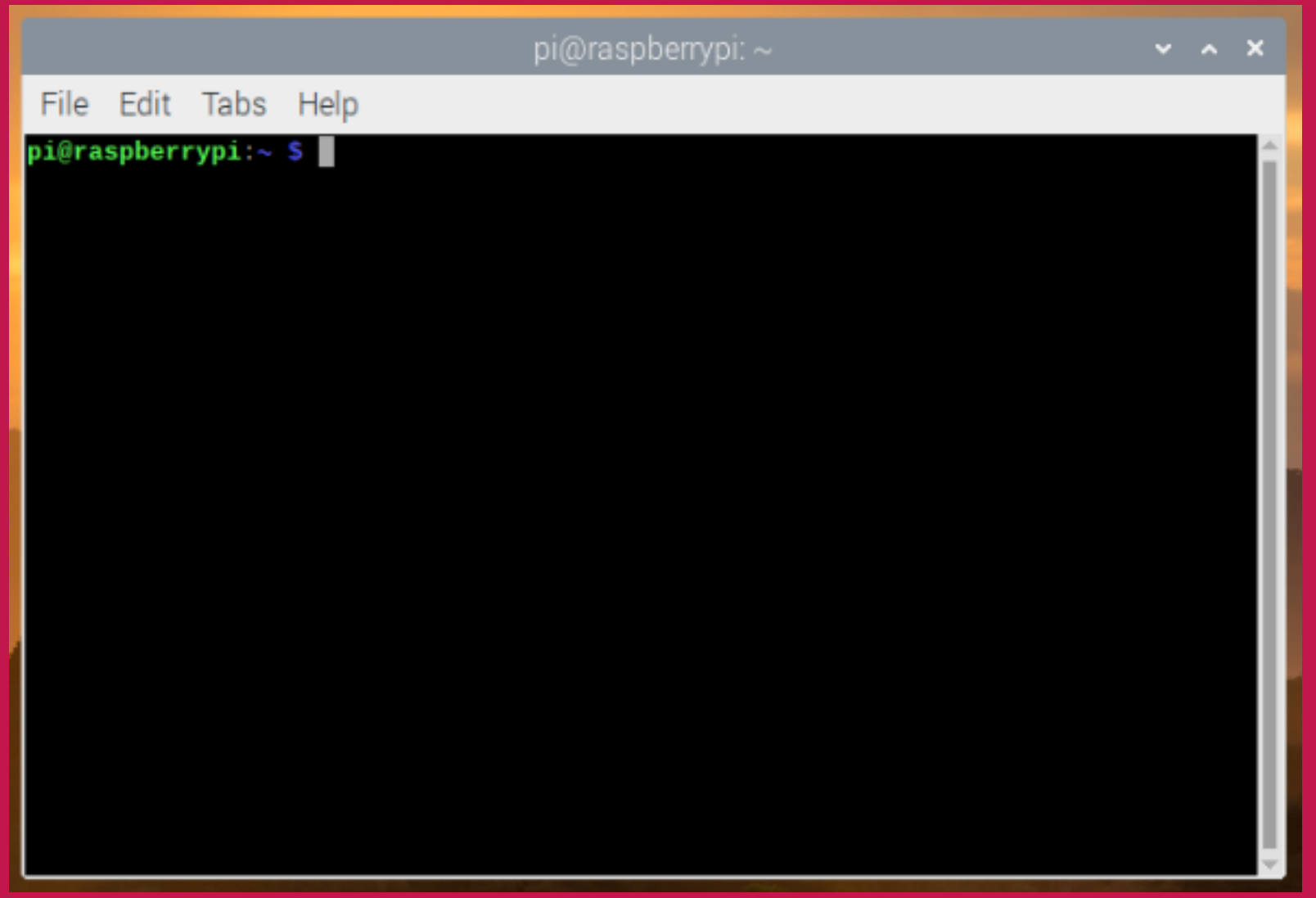
Set Date & Time

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

Terminal

"Old School"

- Text based
- Command Line Interface

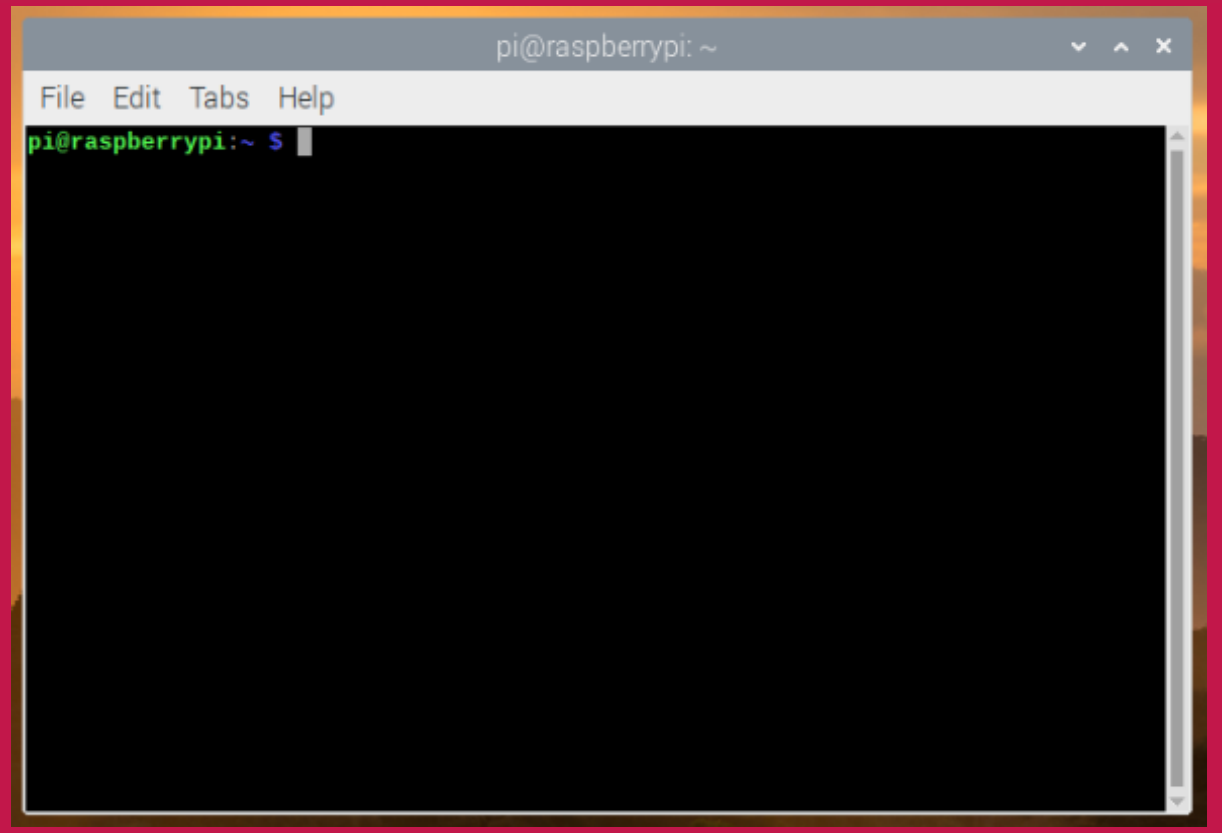


Terminal

Often shown in tutorials

Faster system management

Direct execution of scripts (programs)



Terminal

pwd

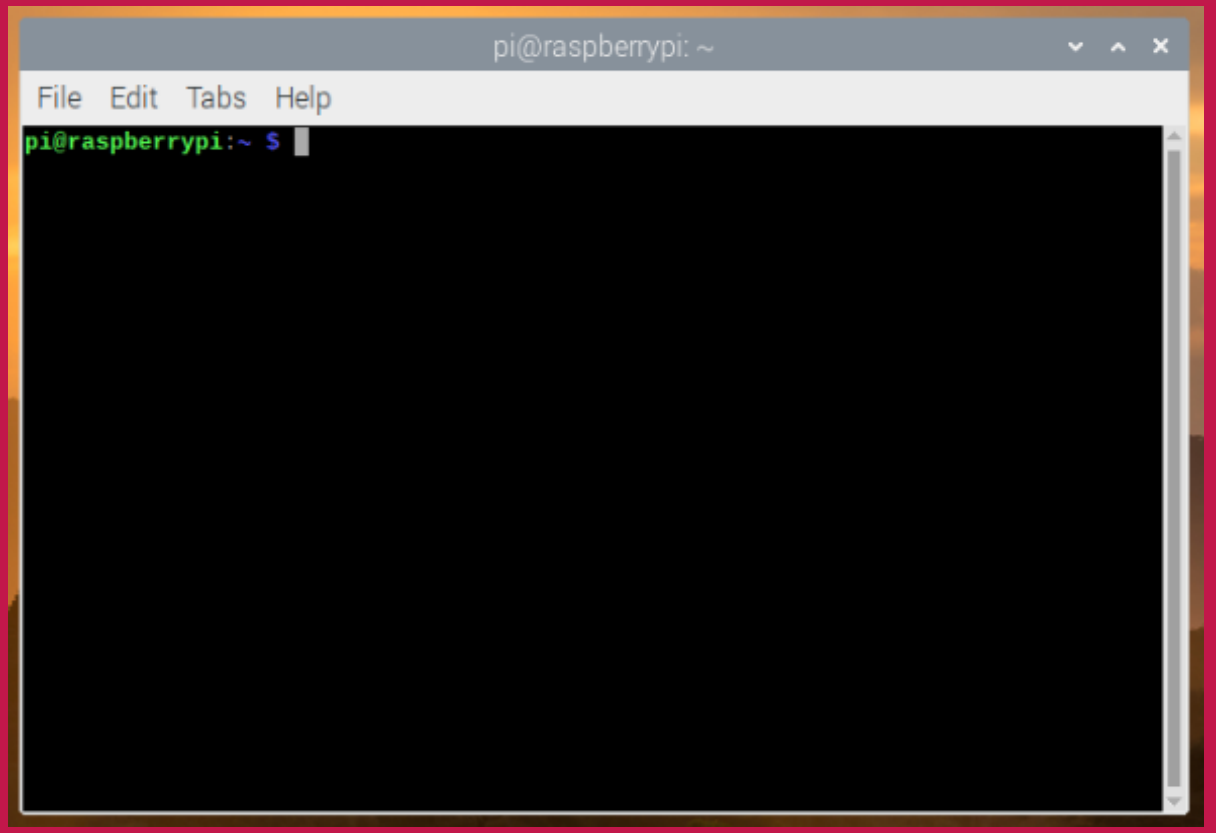
ls

cd

mkdir

nano

chmod

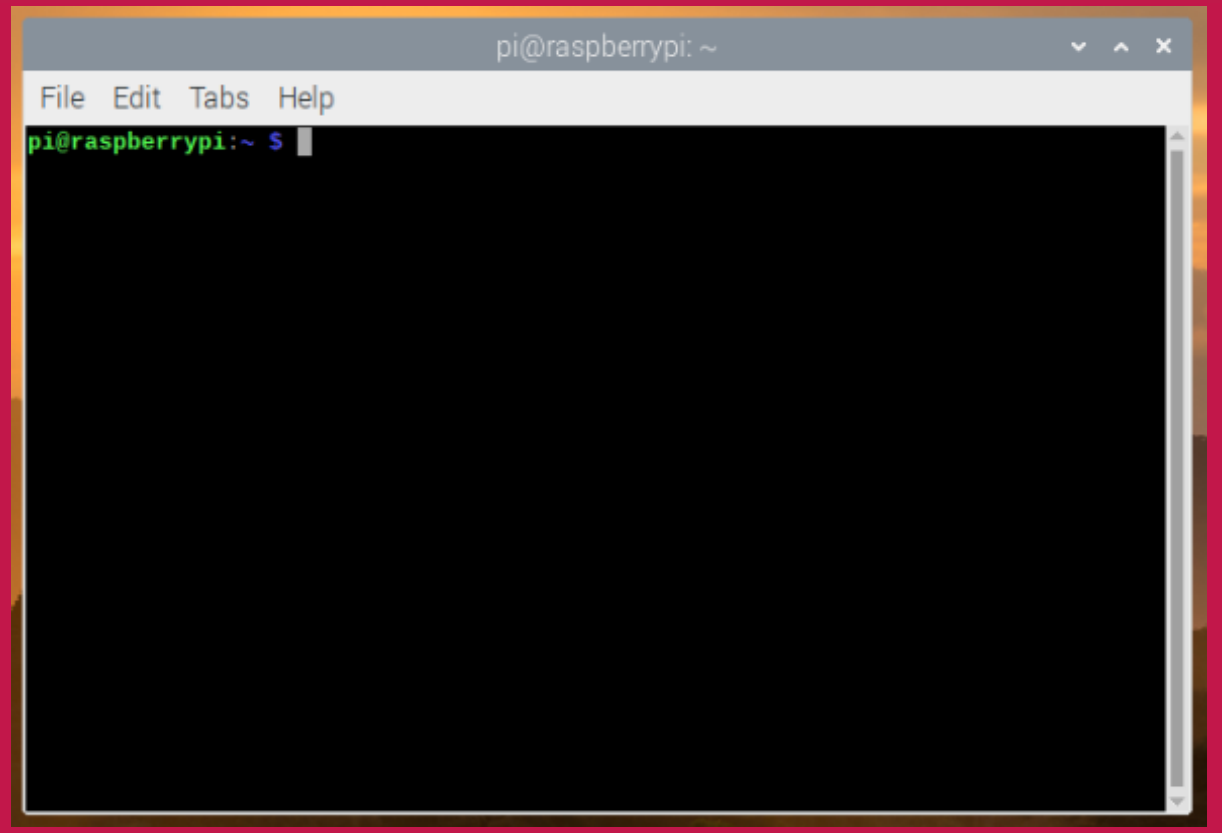


Terminal

mkdir *<yourname>*

cd *<yourname>*

nano helloword.sh



Nano

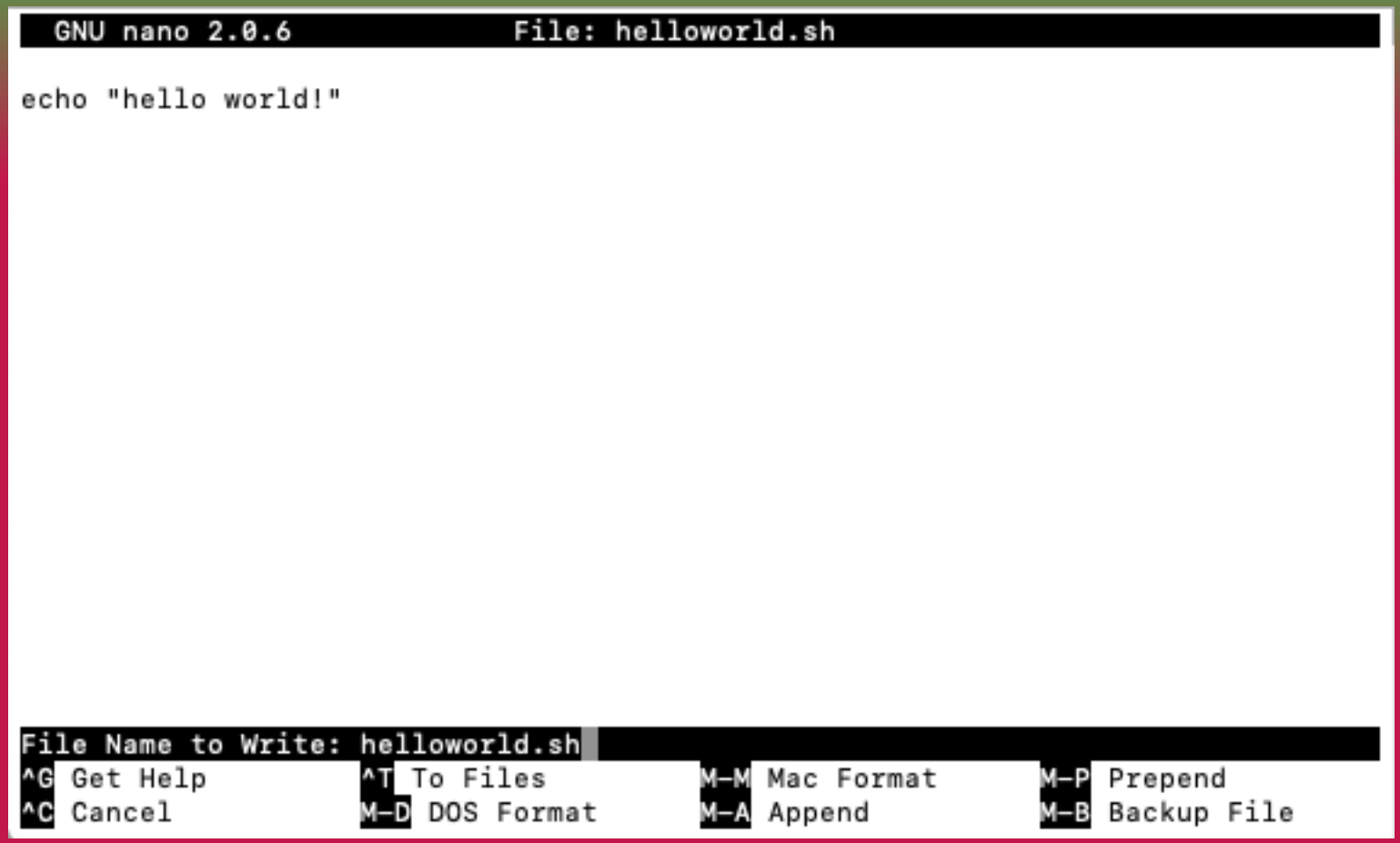
echo "hello world"

Nano

echo "hello world"

<ctrl> o

<enter>



Nano

echo "hello world"

<ctrl> o

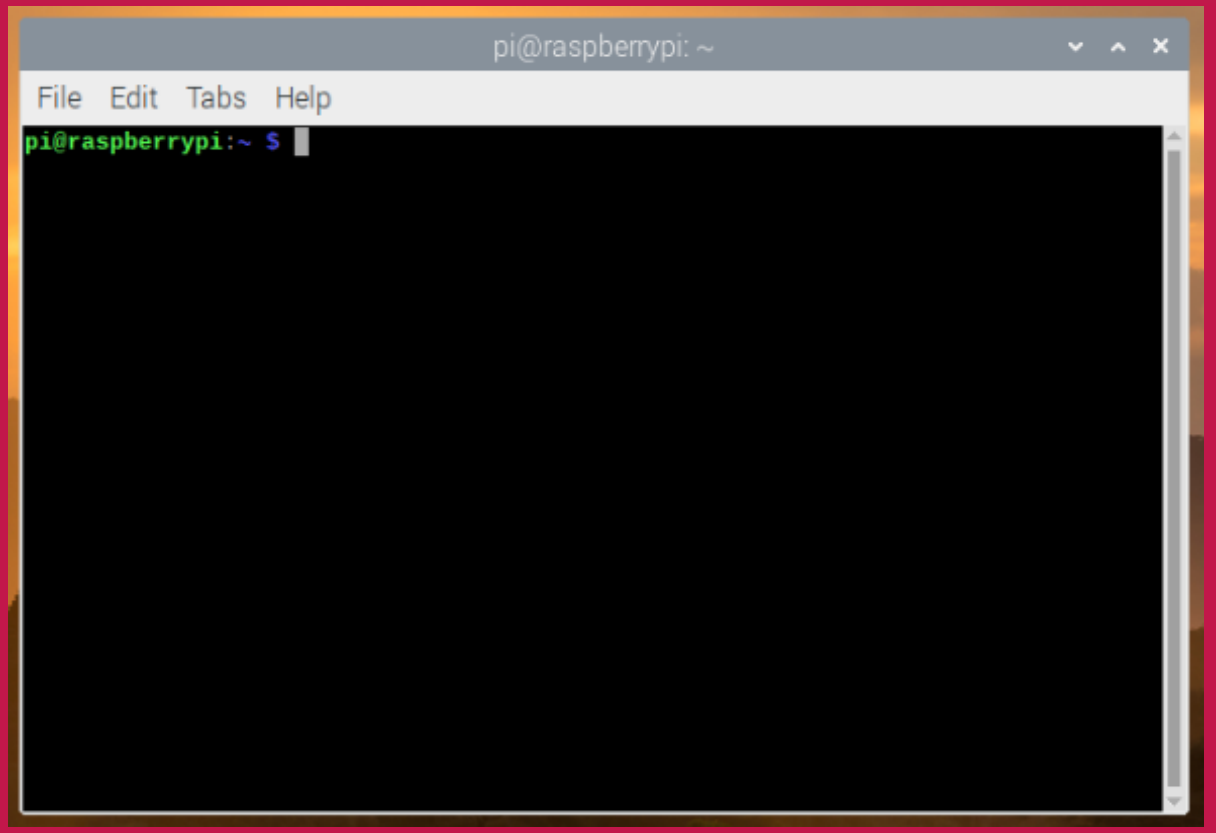
<enter>

<ctrl> x

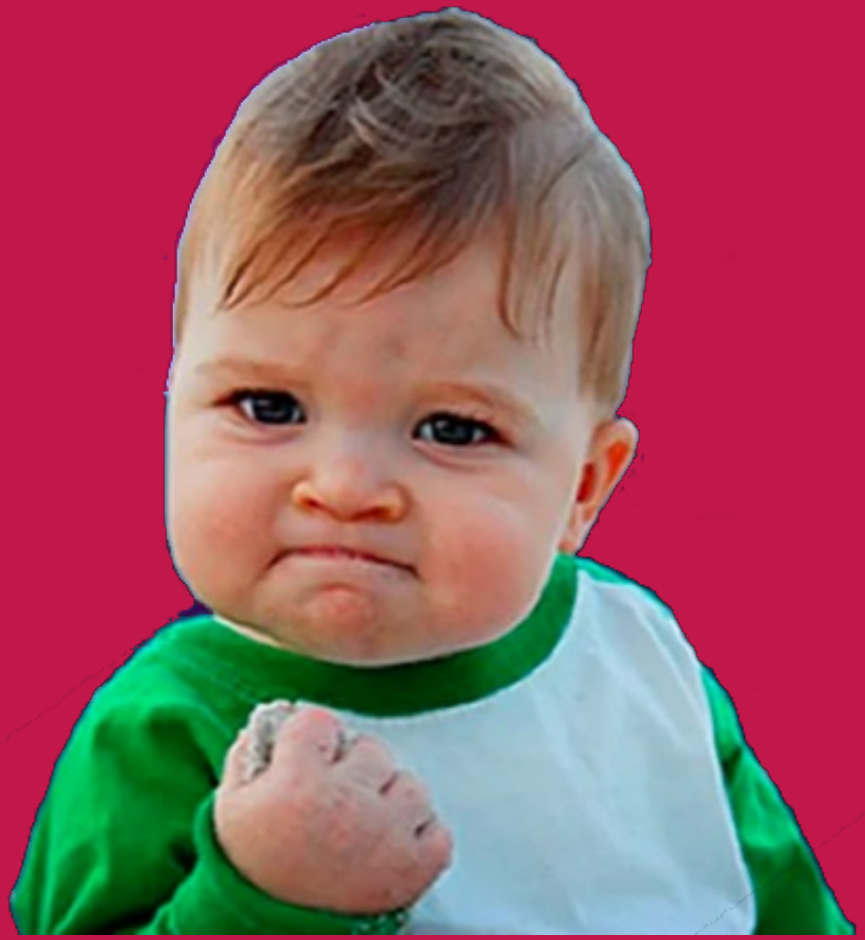
Terminal

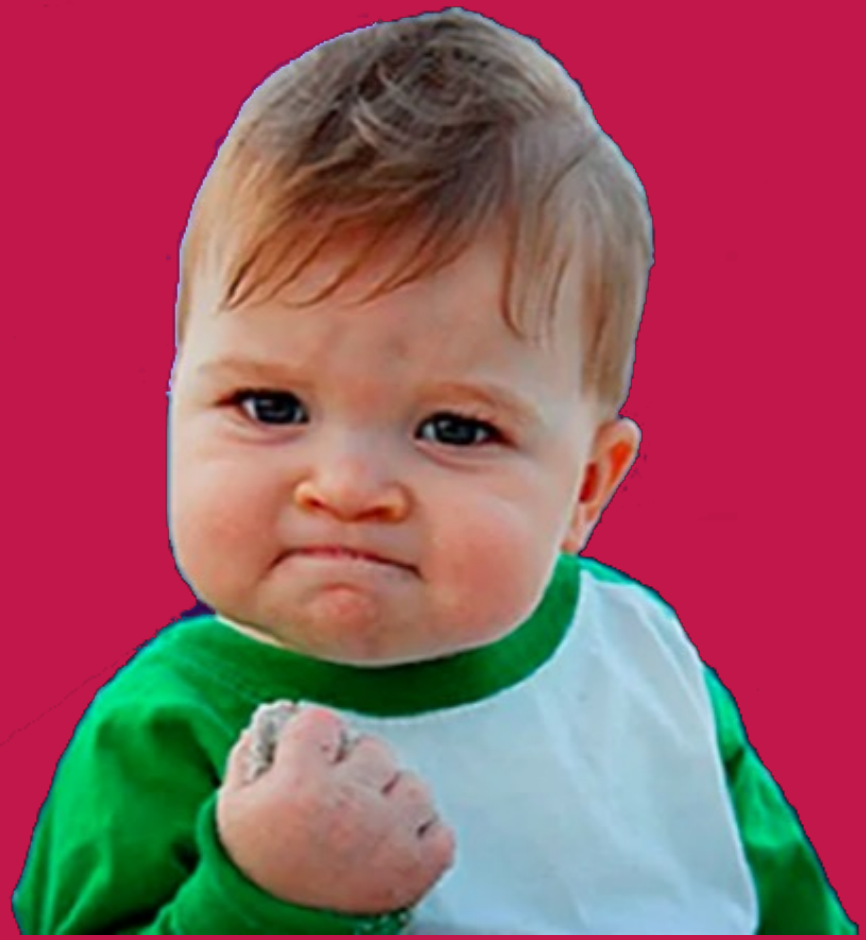
chmod 777 helloworld.sh

./helloworld.sh



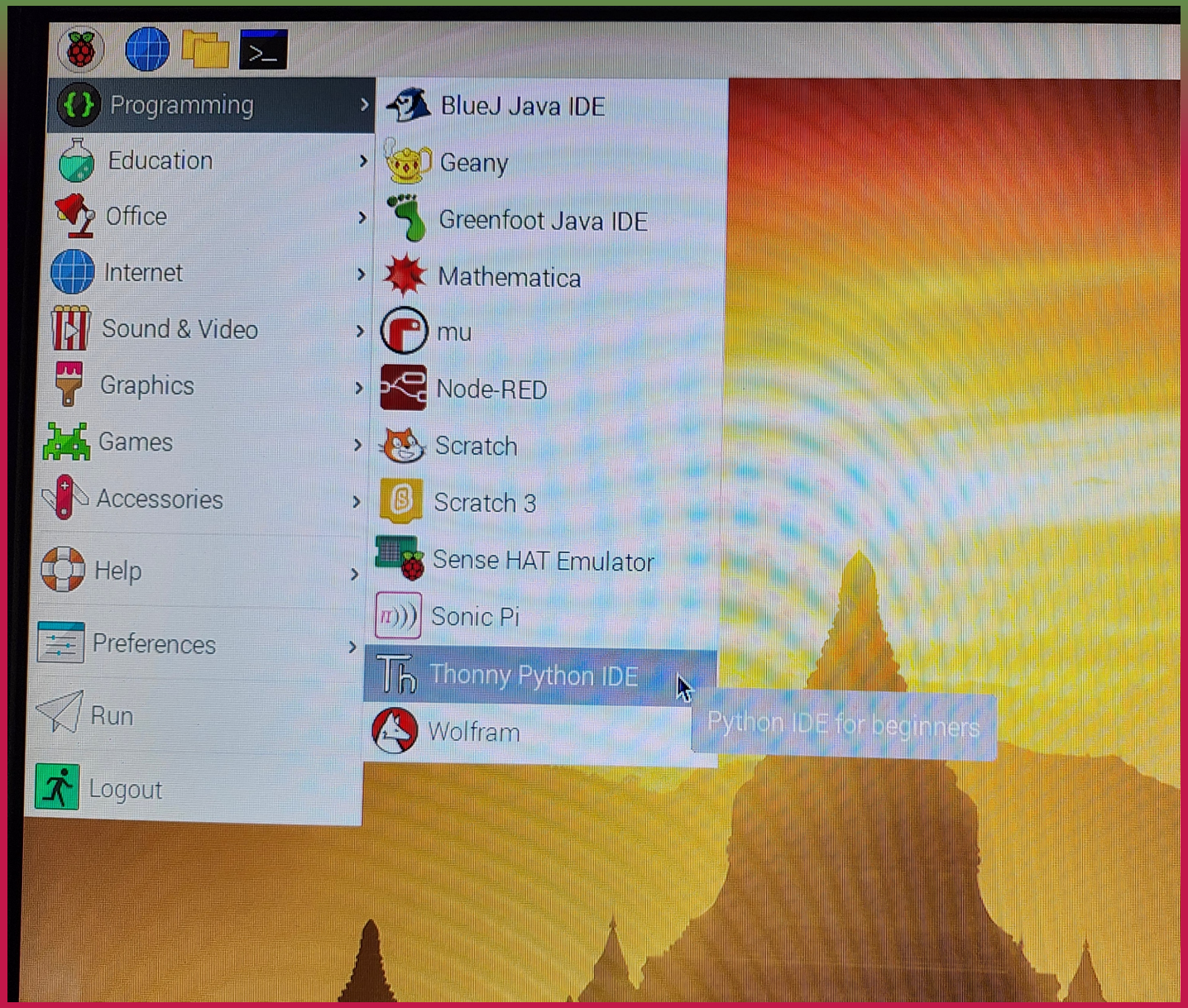
Most Excellent!





Python

Using Thony IDE



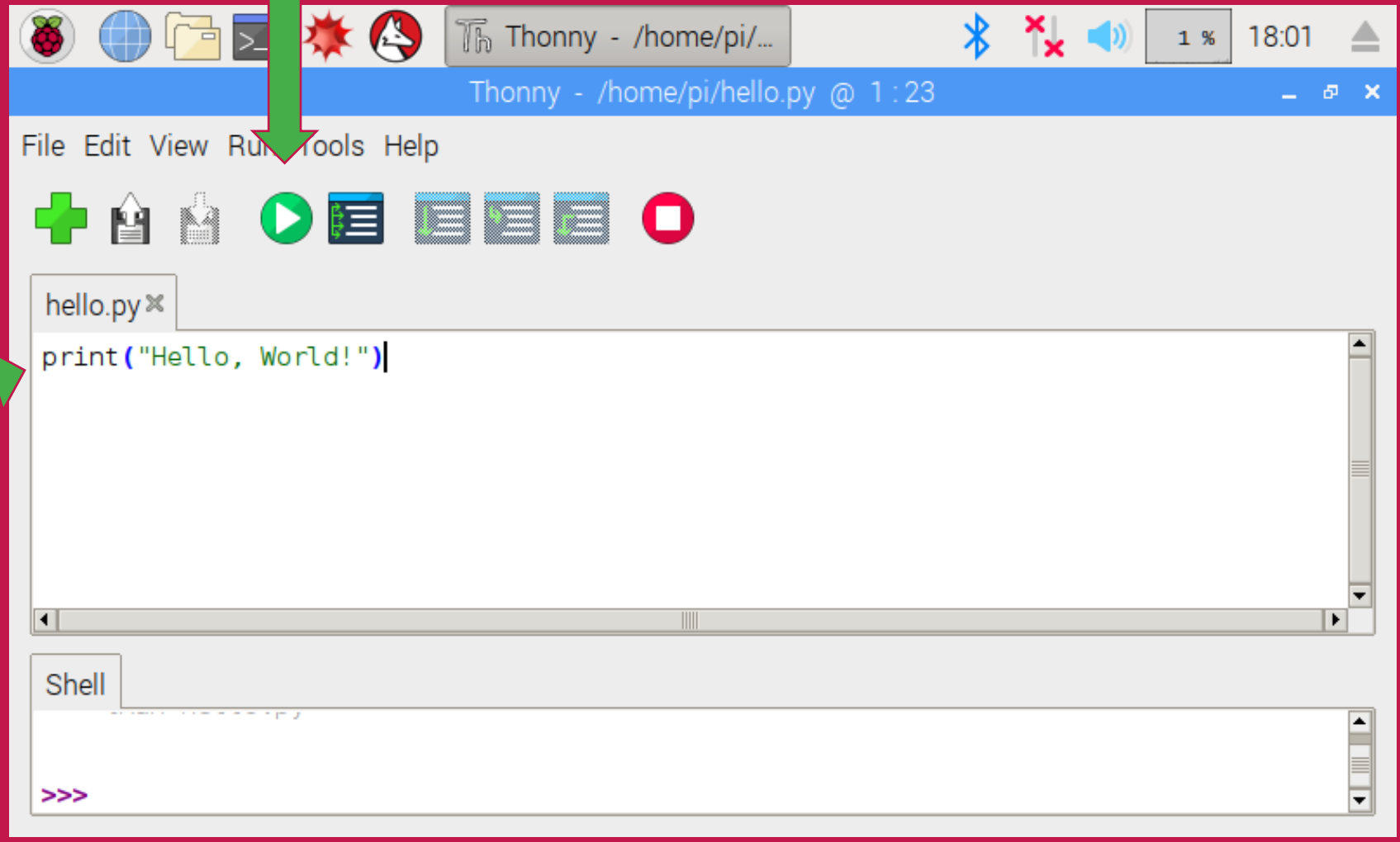
Python

Type Program

Click Run Button

Run

Program

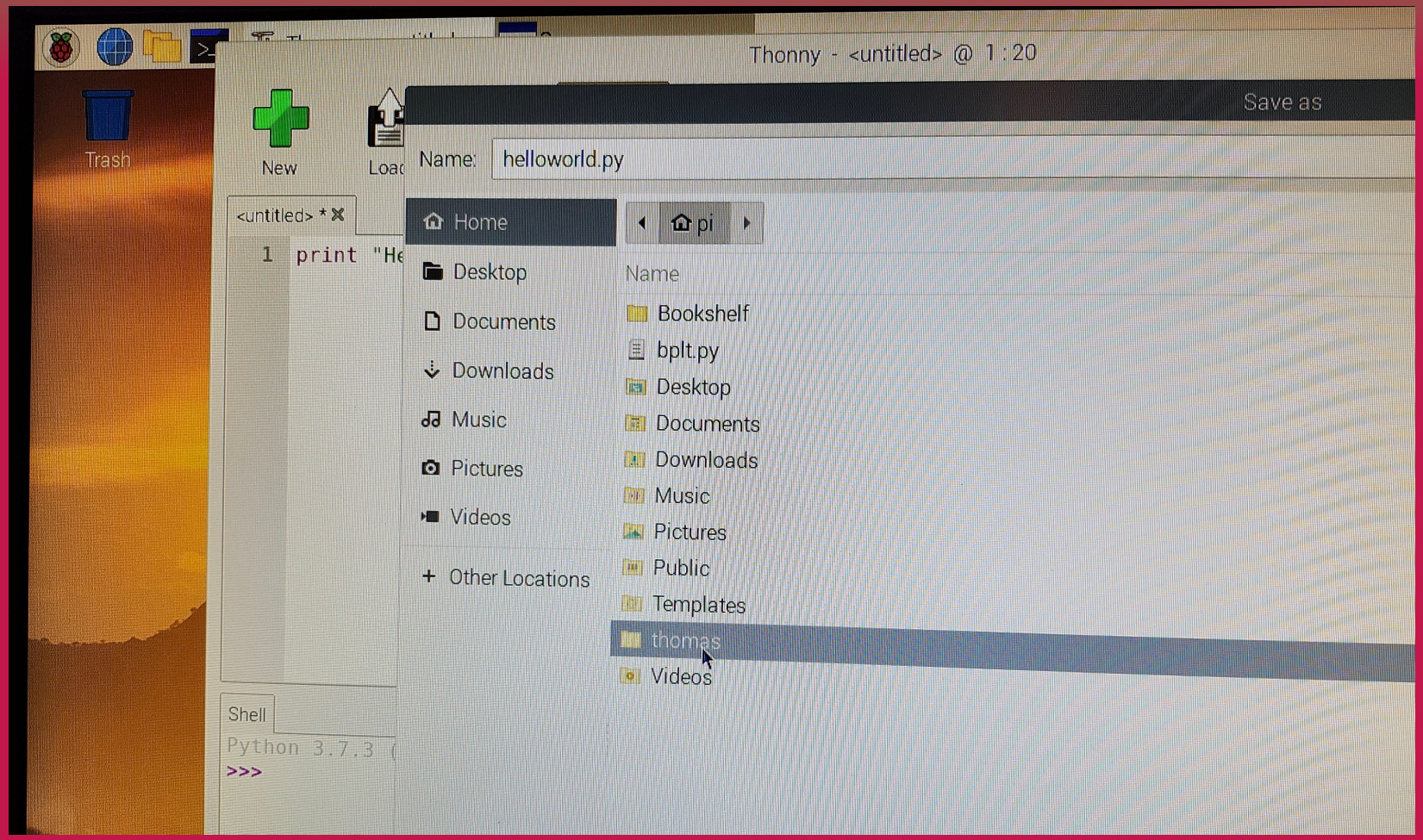


Python

Name File

Select Folder

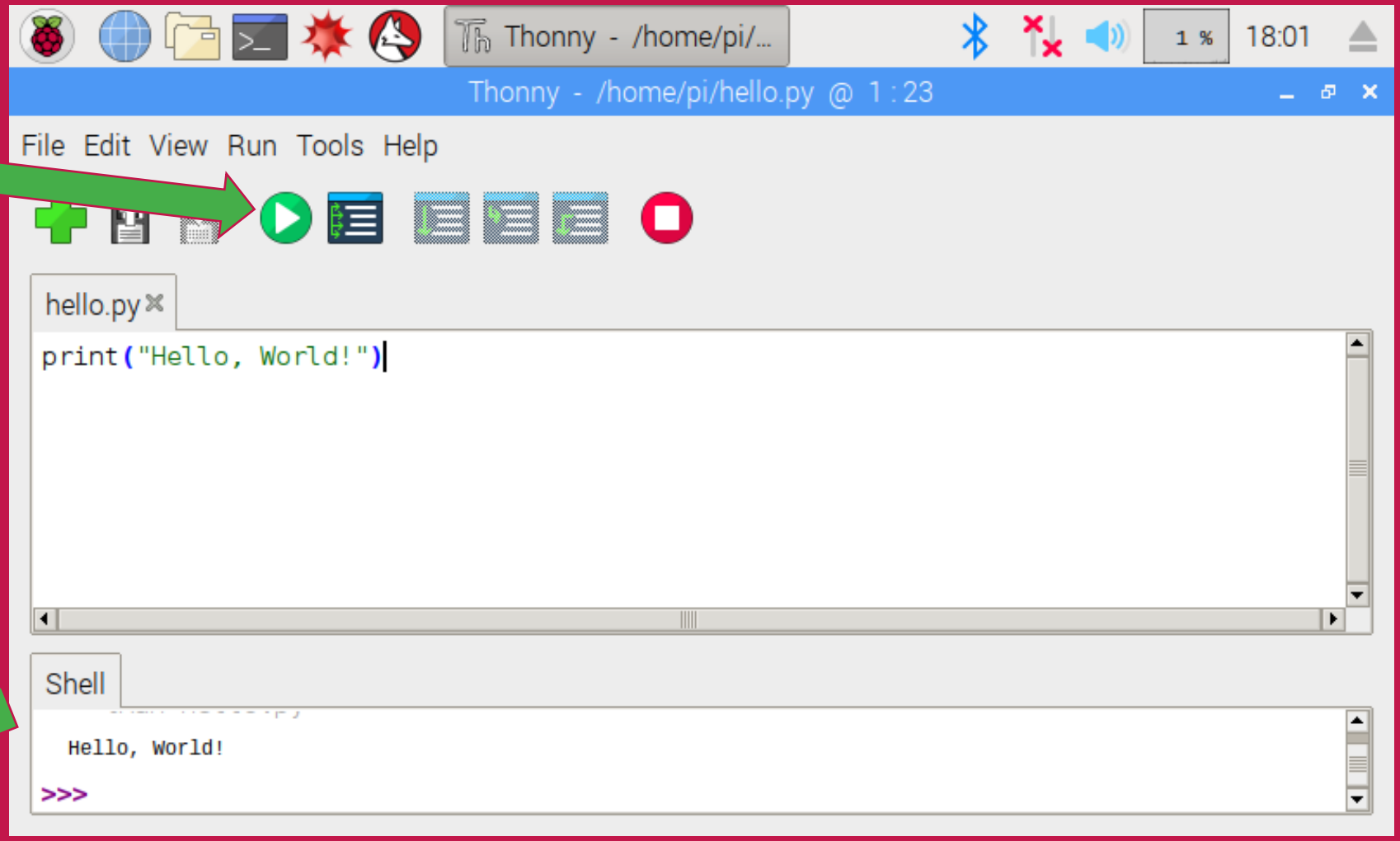
Click OK button



Python

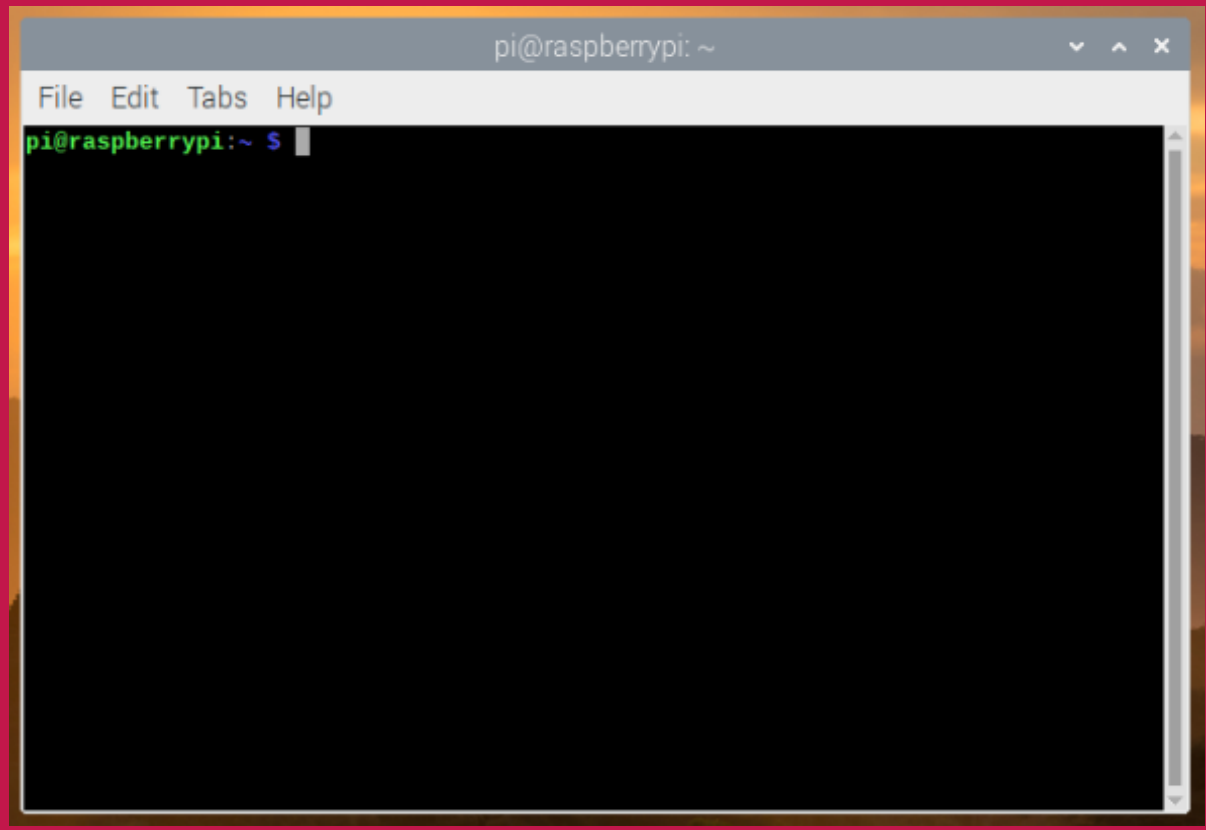
Run Program

Program output

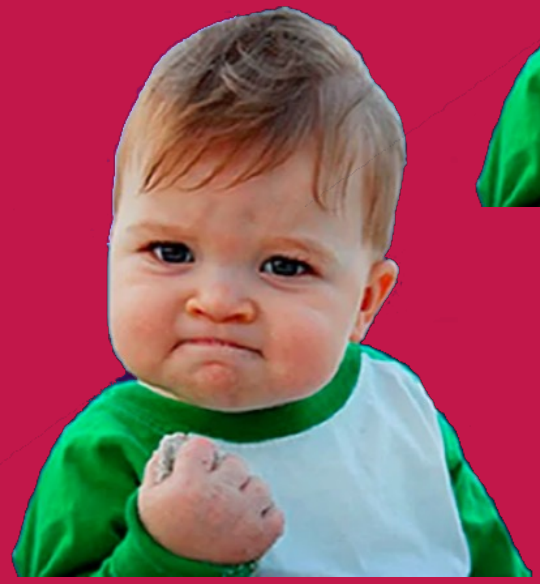


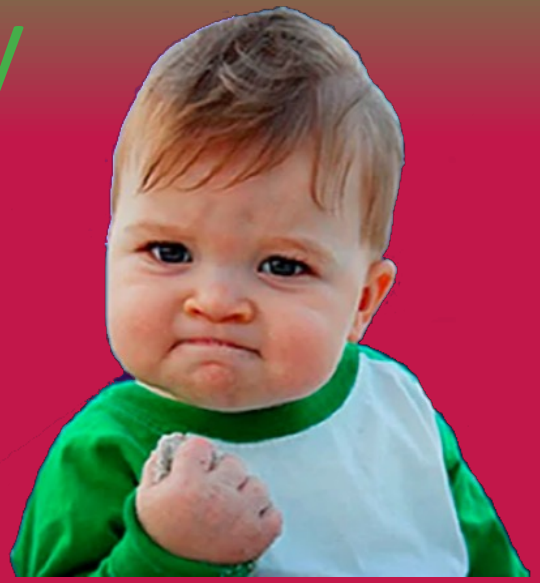
Python via Terminal

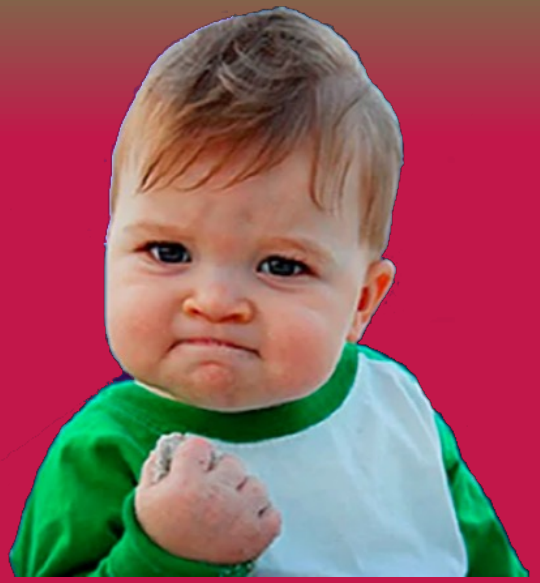
python ./helloworld.py



Awesomly Excellent!








GREAT
JOB!