Sudo apt-get install python-pip python3-pip
#install esptool and adafruit ampy tools using pip package manager
pip install esptool
#pip install adafruit-ampy
sudo apt-get install screen

#dmesg # locate the usb device
ls /dev/tty* ------->USB0

erase chip using esptoo before programming new firmware

```
esptool.py --chip esp32 -p /dev/ttyUSB0 erase_flash
```

embedded@ubuntu:~/Micropython/Pyconke_Hands_On$ sudo esptool.py --chip esp32 -p /dev/ttyUSB0 erase_flash
[sudo] password for embedded:
esptool.py v2.5.1
Serial port /dev/ttyUSB0
Connecting....._____
Chip is ESP32D0WDQ6 (revision 1)
Features: WiFi, BT, Dual Core
MAC: 30:ae:a4:3f:81:a8
Uploading stub...
Running stub...
Stub running...
Erasing flash (this may take a while)...
Chip erase completed successfully in 4.0s
Hard resetting via RTS pin...
embedded@ubuntu:~/Micropython/Pyconke_Hands_On$

```
flash new firmware

embedded@ubuntu:~/Micropython/Pyconke_Hands_On$ sudo esptool.py
--chip esp32 -p /dev/ttyUSB0 write_flash -z 0x1000 firmware/esp32.bin

esptool.py v2.5.1
Serial port /dev/ttyUSB0
Connecting........_
Chip is ESP32D0WDQ6 (revision 1)
Features: WiFi, BT, Dual Core
MAC: 30:ae:a4:3f:81:a8
Uploading stub...
Running stub...
Stub running...
Configuring flash size...
Auto-detected Flash size: 4MB
Compressed 1082352 bytes to 684236...
Wrote 1082352 bytes (684236 compressed) at 0x00001000 in 60.9 seconds
```

```
(effective 142.3 kbit/s)...
Hash of data verified.

Leaving...
Hard resetting via RTS pin...
embedded@ubuntu:~/Micropython/Pyconke_Hands_On$
```

5) connecting to the device using screen

Automate stuff

erase_esp32

```
sudo esptool.py --chip esp32 -p /dev/ttyUSB0 erase_flash
```

flash_esp32

```
sudo esptool.py --chip esp32 -p /dev/ttyUSB0 write_flash -z 0x1000
firmware/esp32.bin
```

run_micropython

```
sudo screen /dev/ttyUSB0 115200
```