

RASPBERRY PI

By Thushar Tom

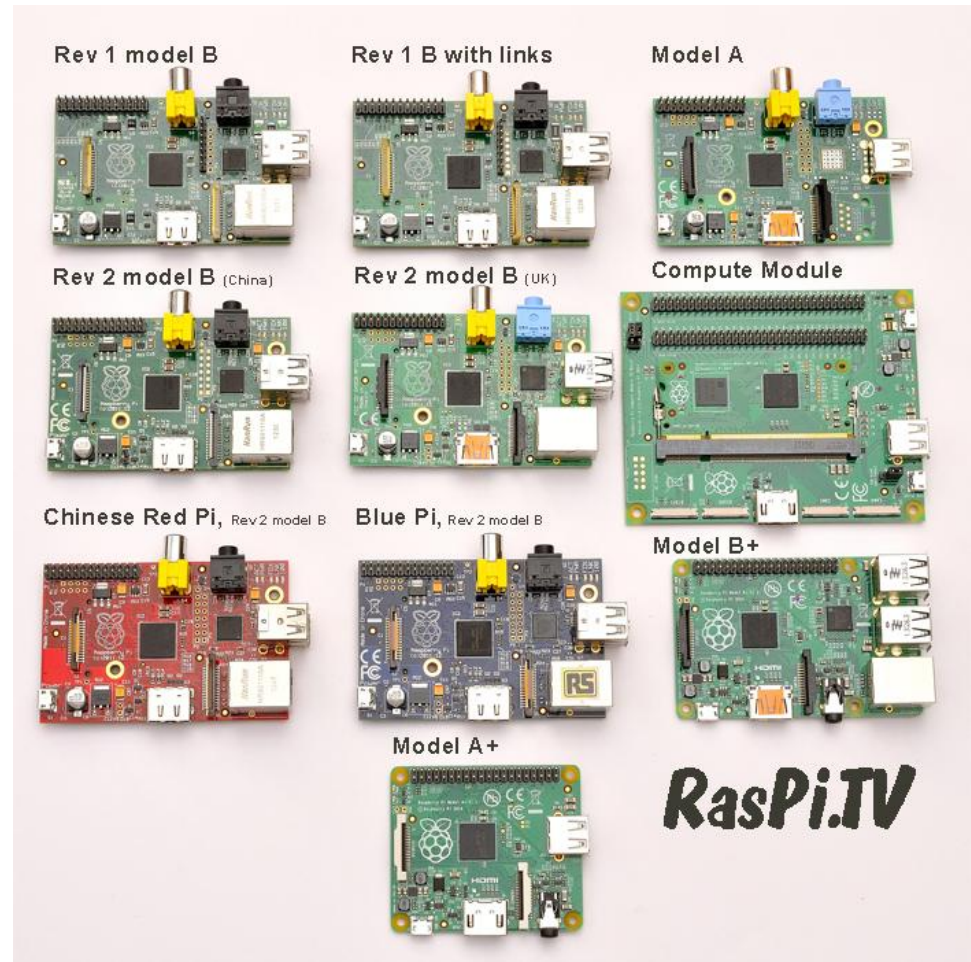
What is a Raspberry pi?

- The Raspberry Pi is a low cost, **credit-card sized computer** that plugs into a computer monitor or TV, and uses a standard keyboard and mouse.
- How is it different from an arduino?

The main difference between them is Arduino is microcontroller board while raspberry pi is a mini computer.

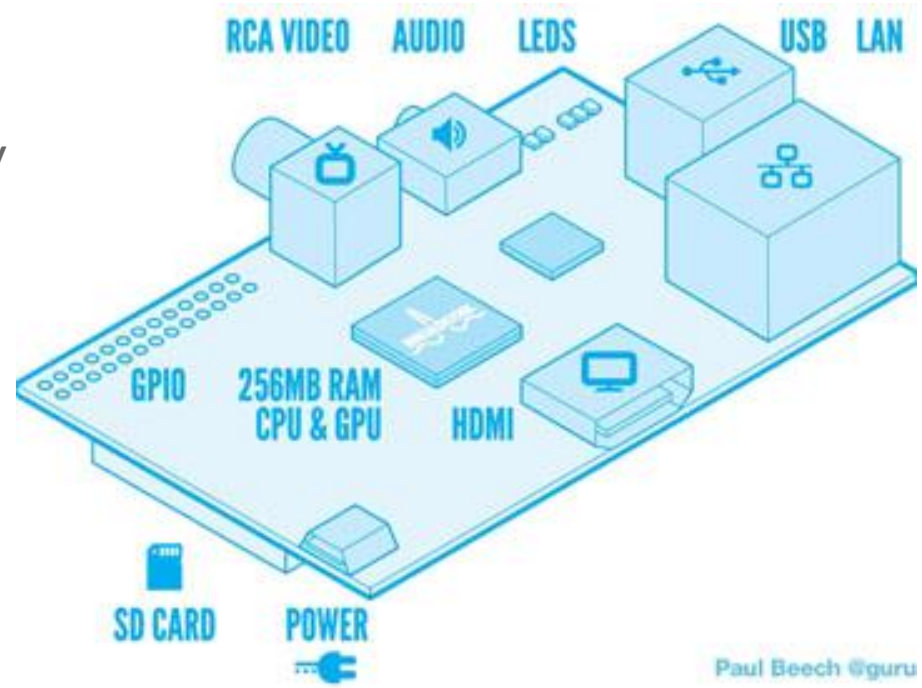
Different types of Pi

If you wanna know more about them Log onto
<https://www.raspberrypi.org/>
Updates, News, Creative Projects, Support
Libraries relating to raspberry pi are available



Different parts of Pi 3 Model B+

1. 40 GPIO- General purpose I/O
2. ARM CPU/GPU- Quad core
3. RCA- Allows connection of analog TV
4. Audio Out
5. LED's
6. USB
7. HDMI
8. Power - 5V (2A preferred)
9. SD card slot - 8-32GB
10. Ethernet



Booting up

OS - RASPBIAN

BOOTING UP

THERE ARE TWO WAYS

- With NOOBS (New Out of the Box Software) Installer
- Normal linux distro bootable

INSTALLING WITH NOOBS

Download NOOBS installation files
from
<https://www.raspberrypi.org/downloads/raspbian/>

Follow the instructions on the
raspberry pi documentation page

[https://projects.raspberrypi.org/en/
projects/raspberry-pi-setting-up/3](https://projects.raspberrypi.org/en/projects/raspberry-pi-setting-up/3)

INSTALLING WITHOUT NOOBS

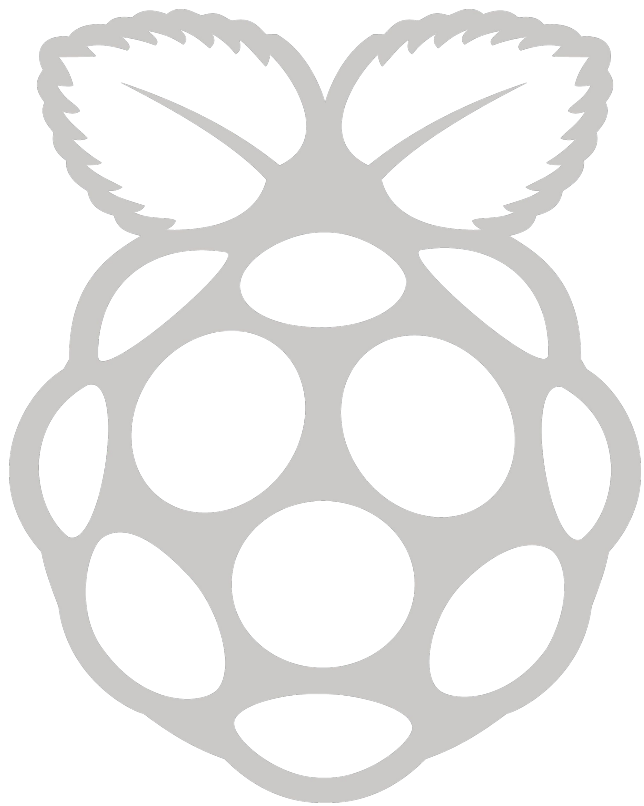
Download raspbian from

<https://www.raspberrypi.org/downloads/raspbian/>

Then follow instructions from

<https://www.raspberrypi.org/documentation/installation/installing-images/README.md>

Who needs a fully wired
raspberry pi with monitor,
keyboard and a mouse the
whole time.



REMOTE ACCESS

Enable remote access - `sudo raspi-config`

SSH and VNC

- Connect to a common network
 - Terminal command- `sudo ifconfig`
 - Open VNC chrome extension and type in the ip address
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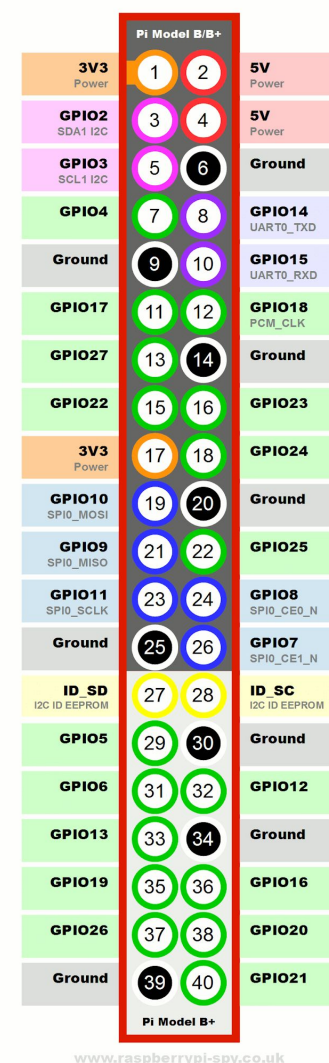
Navigating through linux commands.

Commands	Expansion	Description
<ul style="list-style-type: none">● pwd● Cd● Cd~● Cd ..● ls● mkdir● Sudo● Wget● Rm -r	<ul style="list-style-type: none">● Print working directory● Change directory● Change directory● Change directory●● List● Make directory● Super user do● Web get● Remove recursively	<ul style="list-style-type: none">● Prints the current directory● It lets you change your current directory● Go back to the root● Go back a single directory● List the things in a directory● Make a directory for you● Give the Root user authorisation● Helps to download files● Helps to remove a directory

GPIO Pinout

Lets see if we can blink an led with this.

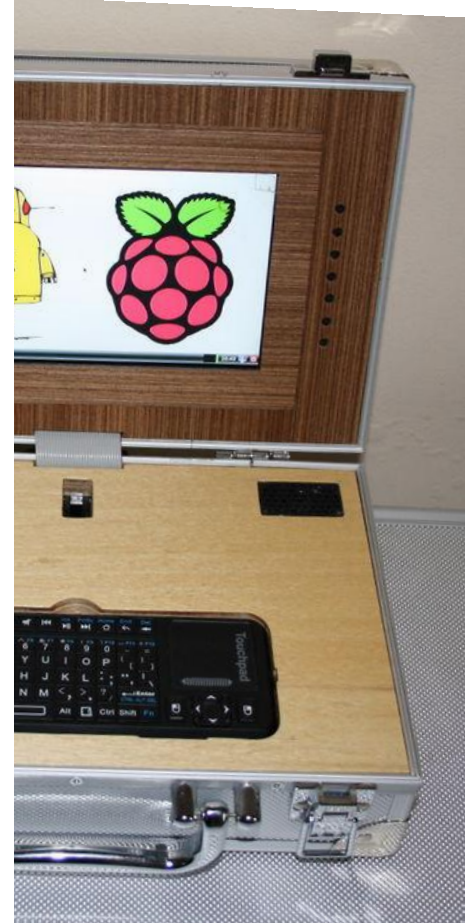
- Sudo idle
 - Make all the necessary connections on a breadboard
 - Run the code
 - See the magic happen
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- Be Very careful when you use GPIO pins because VCC and Ground pins are really close and more current drawn from the Raspberry pi may cause it to fail



Interfacing Pi-Camera

- Sudo raspi-config -- Enable Picam
- Sudo nano picamtest.py
- Sudo apt-get install python-picamera
- Sudo apt-get install python3-picamera
- Python picam

Projects



Contact

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