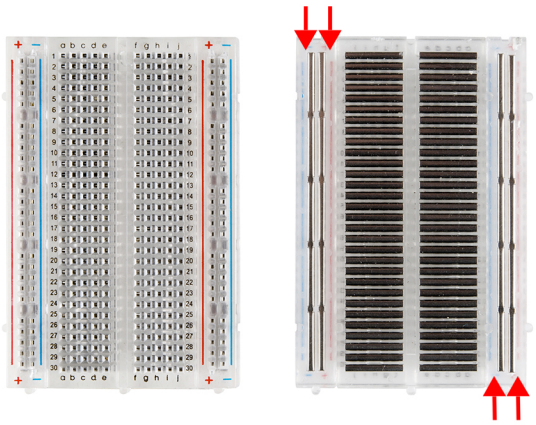
IOT Experiment Basics

Before diving into to setting IOT experiments, let's start with basics.

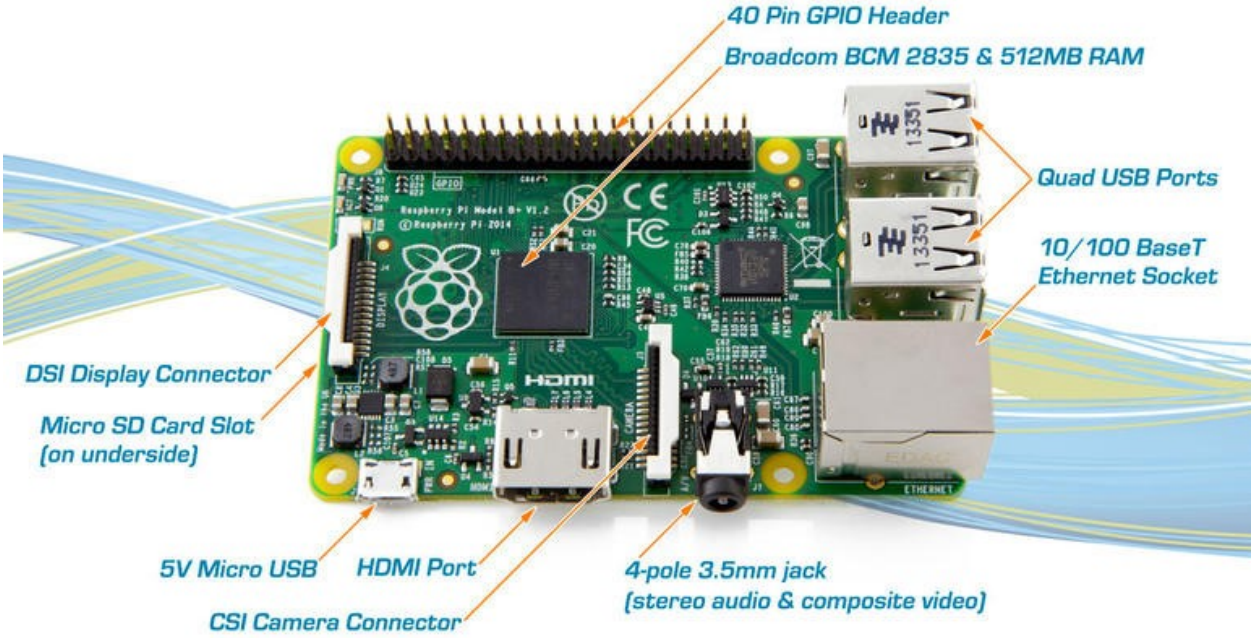
Breadboard

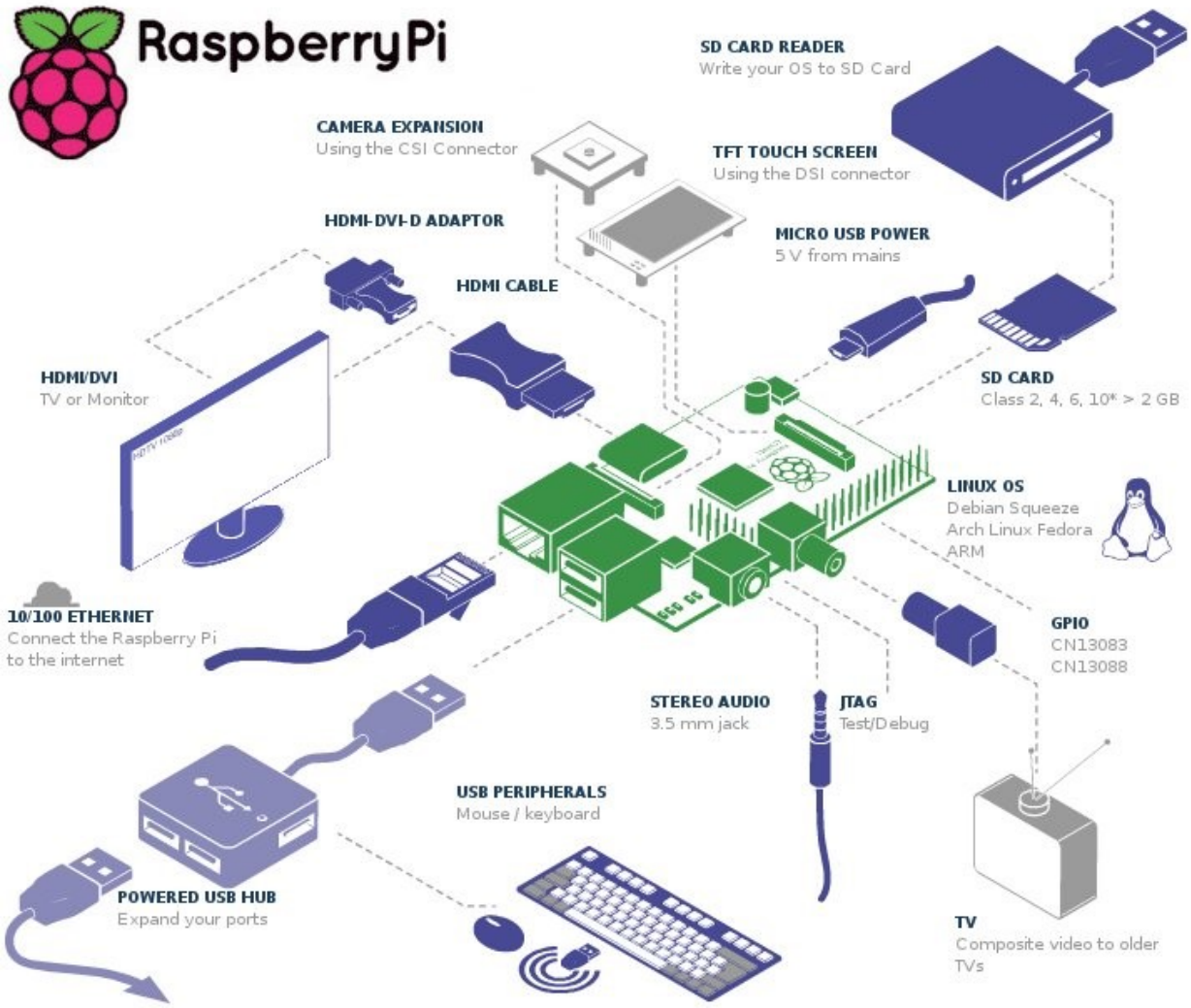
I have leant basics of bread board from
https://learn.sparkfun.com/tutorials/how-to-use-a-breadboard
The below image help you understand how breadboard circuit is aligned internally.



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. We have different configurations in boards, showing below one type of image.

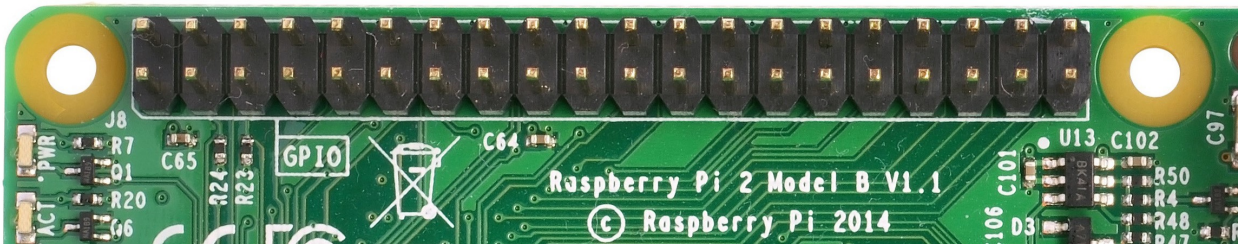

40 Pin GPIO Header
Broadcom BCM 2835 & 512MB RAM
Quad USB Ports
10/100 BaseT
Ethernet Socket
DSI Display Connector
Micro SD Card Slot
(on underside)
5V Micro USB
HDMI Port
CSI Camera Connector
4-pole 3.5mm jack
(stereo audio & composite video)

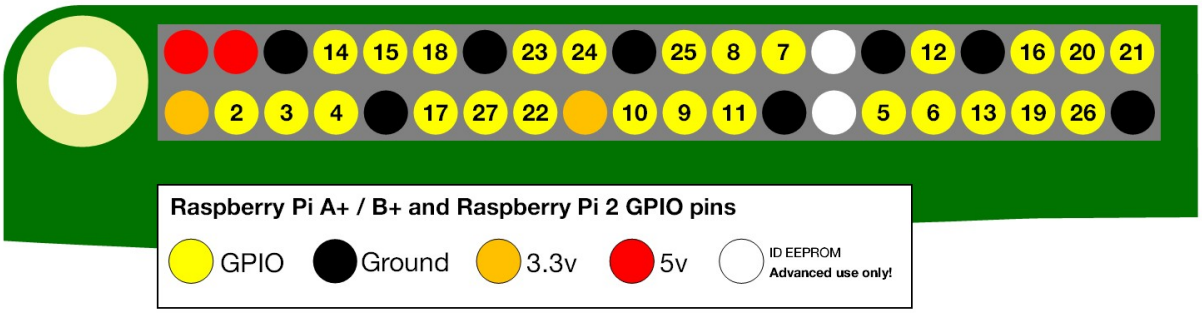


Raspberry GPIO pins

I have understood GPIO pins of raspberry pi 2 using the below site

https://www.raspberrypi.org/documentation/usage/gpio-plus-and-raspi2/





PI Connection related

For Fixed IP configuration, we have followed the below link

https://pihw.wordpress.com/guides/direct-network-connection/

We can do a permanent or temp fixed ip and get connected with a system via RJ45 cable.

This helps us to ping the fixed ip configured on raspberry pi and as we know pi IP address we can connect via SSH using putty or some other tools. This can be helpful when there is no display connected to pi.

Temporary for a session

Now set the new address as follows:

For network settings where the IP address is obtained automatically, use an address in the range 169.254.X.X (169.254.0.0 – 169.254.255.255):

sudo ifconfig eth0 169.254.0.2

For network settings where the IP address is fixed, use an address which matches the laptop/computers address except the last number.

Permanent settings

In the above blog follow steps from text below the line mentioned in blog. Procedure has toggling when need changes.

“To do that we can edit the “cmdline.txt” file which is located on the boot partition of the SD Card.”