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Aim :- Study of connectivity & configuration of Raspberry Pi, Beagle board circuit with basic peripherals LEDs or vertical standing GPIO, its use in the program.

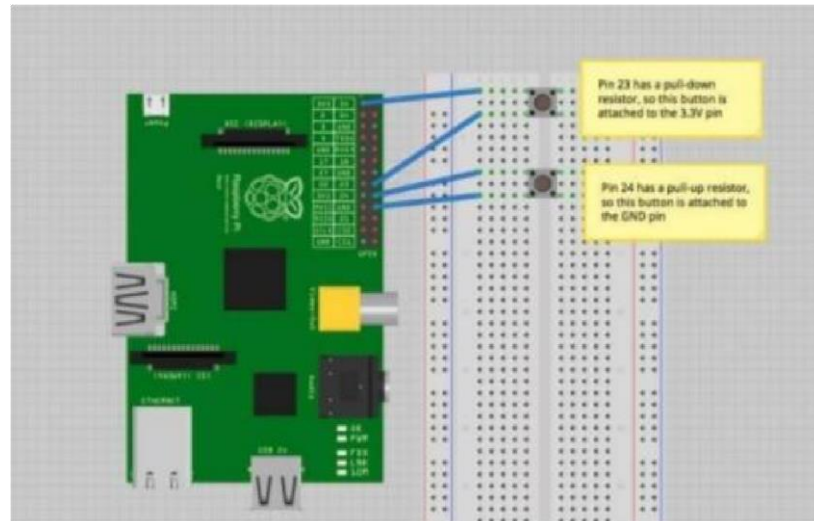
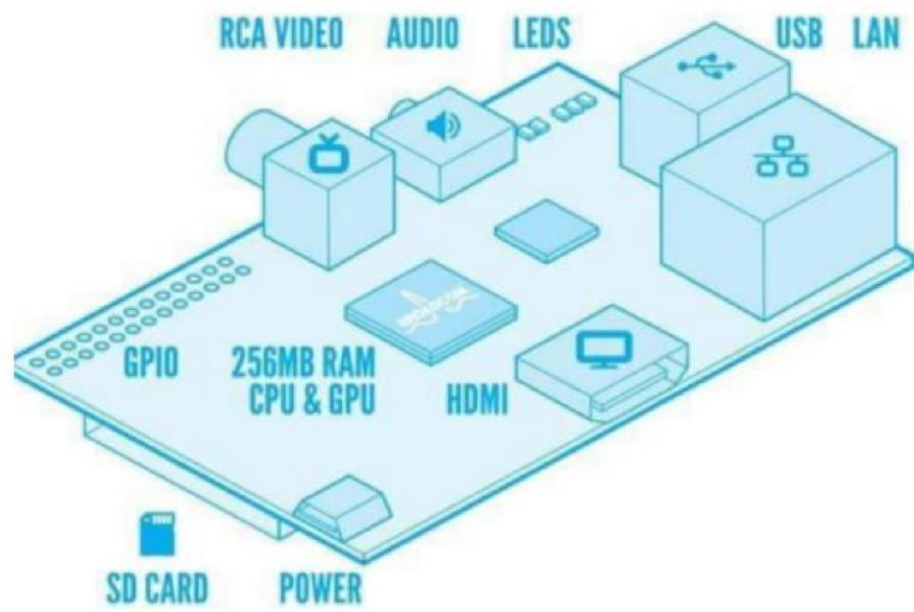
Theory :-

Connectivity, configuration of Raspberry-Pi guides to configures Raspberry-Pi.

- |                            |                         |
|----------------------------|-------------------------|
| 1. raspi-config            | 8. localisation         |
| 2. Config.txt              | 9. Default pin config   |
| 3. wireless                | 10. Device Trees config |
| 4. wireless access point   | 11. Kernel Commandline  |
| 5. Audio config            | 12. VART Config         |
| 6. Camera Config           | 13. Screen Saver        |
| 7. External storage config |                         |

Connectivity of Raspberry-Pi :-

Connectivity is truly superb for a such tiny device especially on the B version of Raspberry-Pi. There are 2 USB, 2 ports that can be used to look up peripherals or adapters this can be together expanded with a powered hub. It is water nothing that both already share the bandwidth of signal channel of the system bus.





### GPIO mode :-

The GPIO BOARD option specifies that you are referring to the pins by the "Broadcom kernel number, these are the numbers after" GPIO in the green rectangle around the outside of below dig.

- The model B+ uses the same numbering as the model B v2.0, adds new pins (27-40)
- The Raspberry Pi zero, Pi 2B + Pi 3B use the same numbering as the B+

### Building a circuit :-

In the circuit shown below, two momentary switches are wired to GPIO pins 25 + 24 (16 + 18 on board). The switch on pin 25 is tied to 3.3V, while the switch on pin 24 is tied to ground.

To setup pins write.

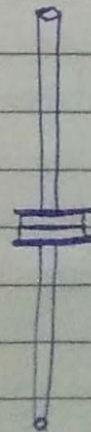
GPIO setup (23 GPIO.IN, pull-up-down = GPIO PUP-DOWN)

GPIO setup (24 GPIO.IN, pull-up-down = GPIO PUP-UP)

### Resistor :-

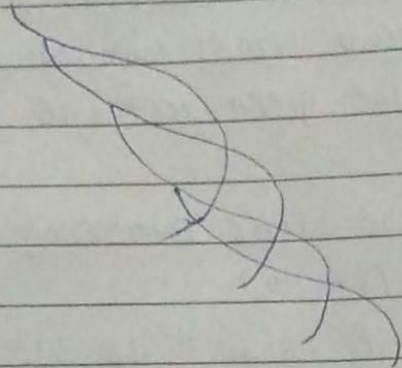
You must always use resistors to connect LEDs up to GPIO pins of Raspberry-Pi.

The Raspberry-Pi can only supply a small current (about 50mA). The LED will want to draw more + if allowed to they will burn out Raspberry pi. Therefore putting the resistors in circuit will ensure that only this small current will flow + Pi will not be damaged.





Jumper wires :-



Jumper wires are used in bread boards to jump from one connection to other.

- The ones you will be using in this circuit have different connectors on each end.
- The end with 'pin' will go into Breadboard.

Conclusion :-

Thus, we have studied connectivity & configuration of Raspberry pi and also use of GPIO.