

## 1. Preparation

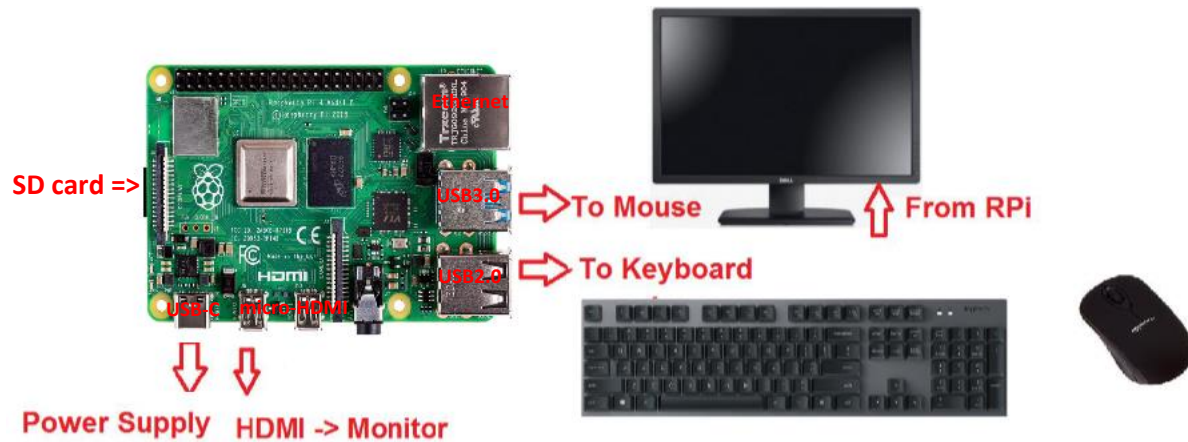
Raspberry Pi 4 B Board

USB-C power supply

Micro SD card with Reader/Adapter (64 GB is preferred)

Monitor with micro-HDMI to HDMI cable, Keyboard, Mouse (Used once, only for the first-time setup)

Ethernet Cable (Optional, we can choose that connect/login to the board in wireless mode, e.g. WIFI)



## 2. Set Up

1> Install Raspberry Pi OS using Raspberry Pi Imager on your PC/laptop

- Download Raspberry Pi Imager using this link [Raspberry Pi OS – Raspberry Pi](#)
- Install Raspberry Pi Imager
- Insert SD card in your PC/laptop and run Raspberry Pi Imager

**Choose OS** – “Raspberry Pi OS (32-bit)”

**Choose Storage**

Then Click **Write**

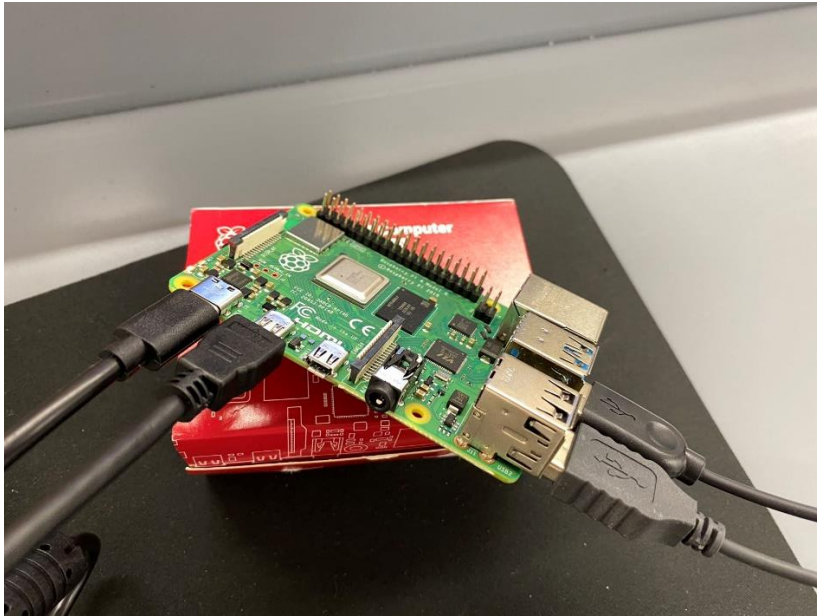


After the above steps are done, you have downloaded the OS into your SD Card successfully.

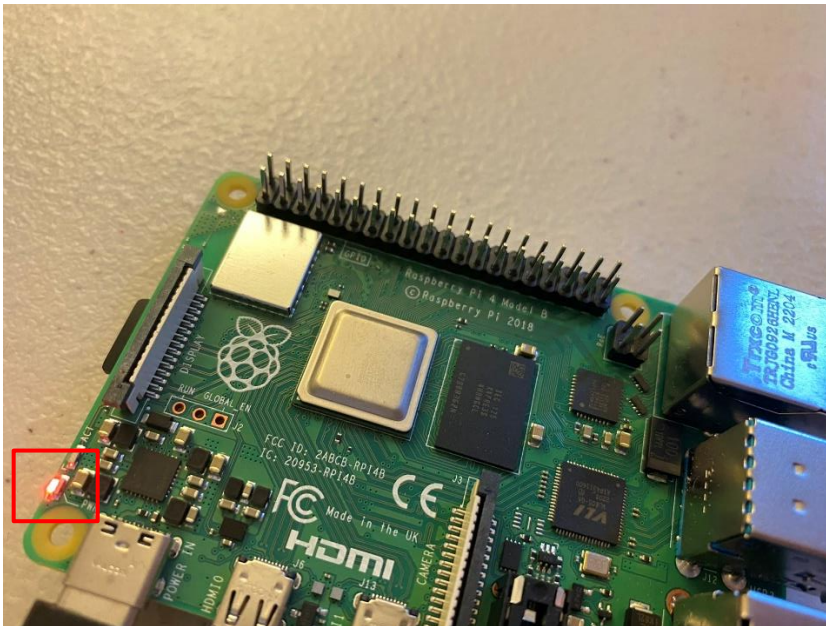
Reference Link: [Projects](#) | [Computer coding for kids and teens](#) | [Raspberry Pi](#)

## 2> Setup the Raspberry Pi Board

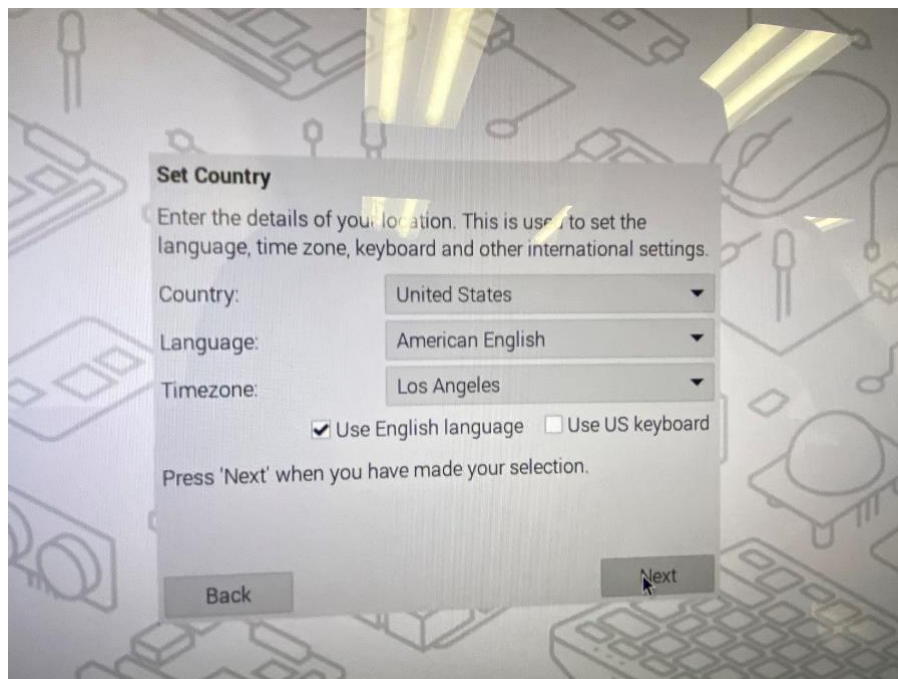
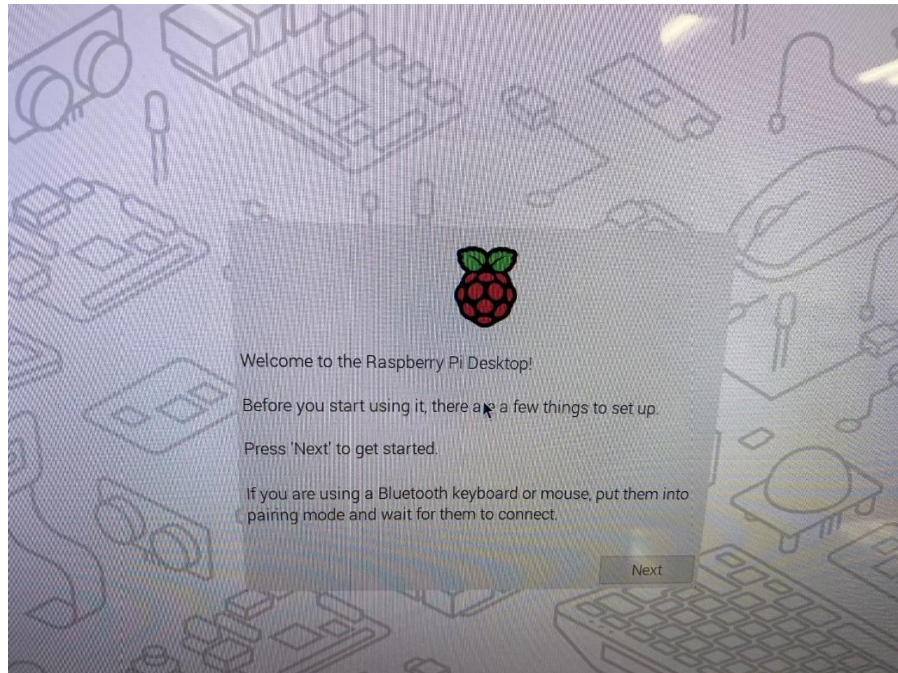
- a. Insert your SD card into Raspberry Pi Board
- b. Connect Monitor, Keyboard and Mouse with your Raspberry Pi Board



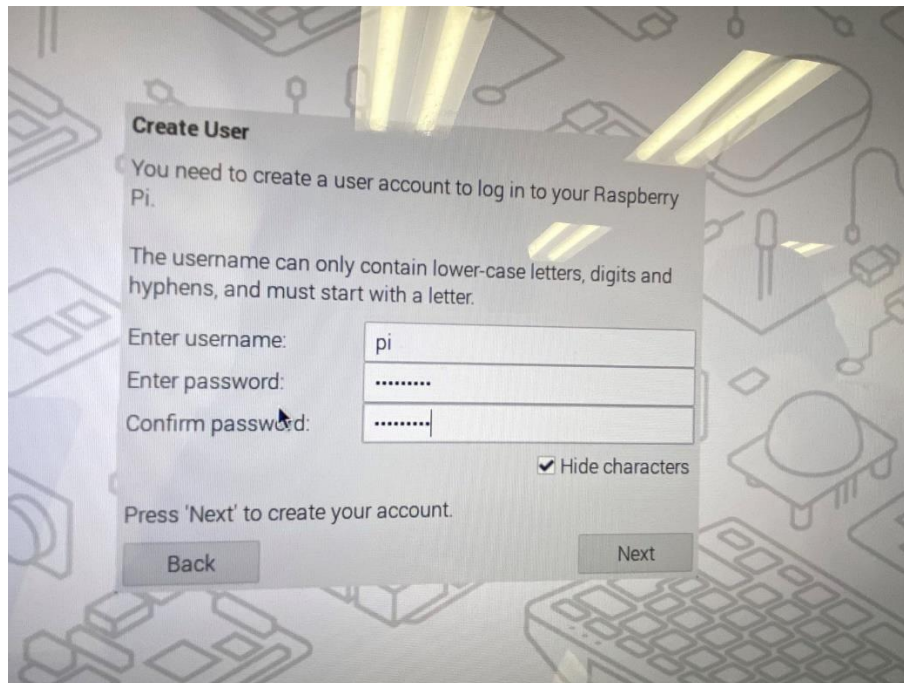
- c. Plug in Power Supply and Power On  
After power on, you should see the power led is on.



- d. In the monitor, follow the instructions to do basic configuration  
(Snapshots attached for reference)







**Create User**

You need to create a user account to log in to your Raspberry Pi.

The username can only contain lower-case letters, digits and hyphens, and must start with a letter.

Enter username:

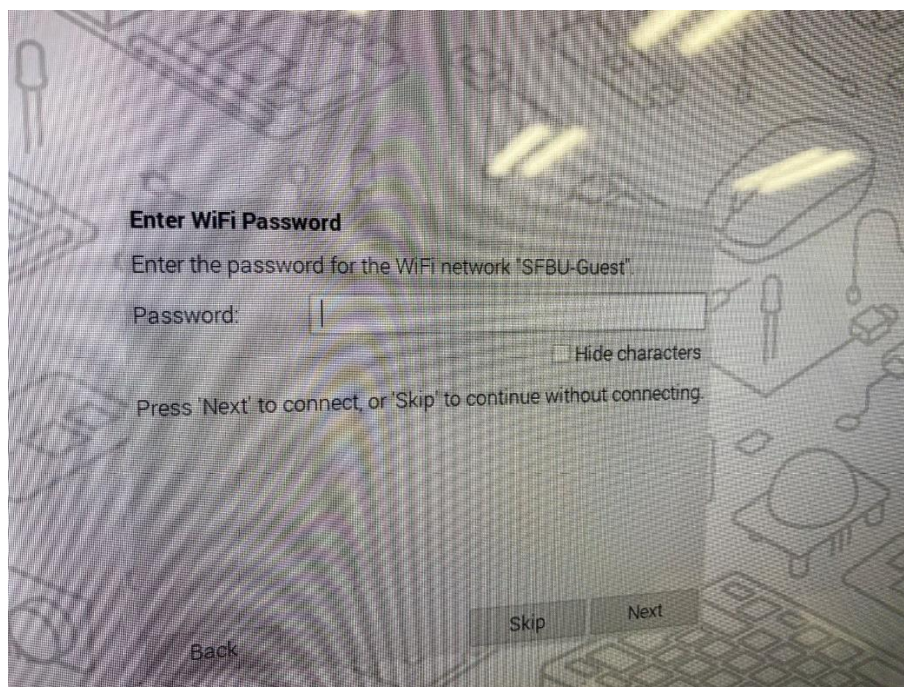
Enter password:

Confirm password:

☒ Hide characters

Press 'Next' to create your account.

**Remember the username and password that are used for logging into your raspberry pi board later.**



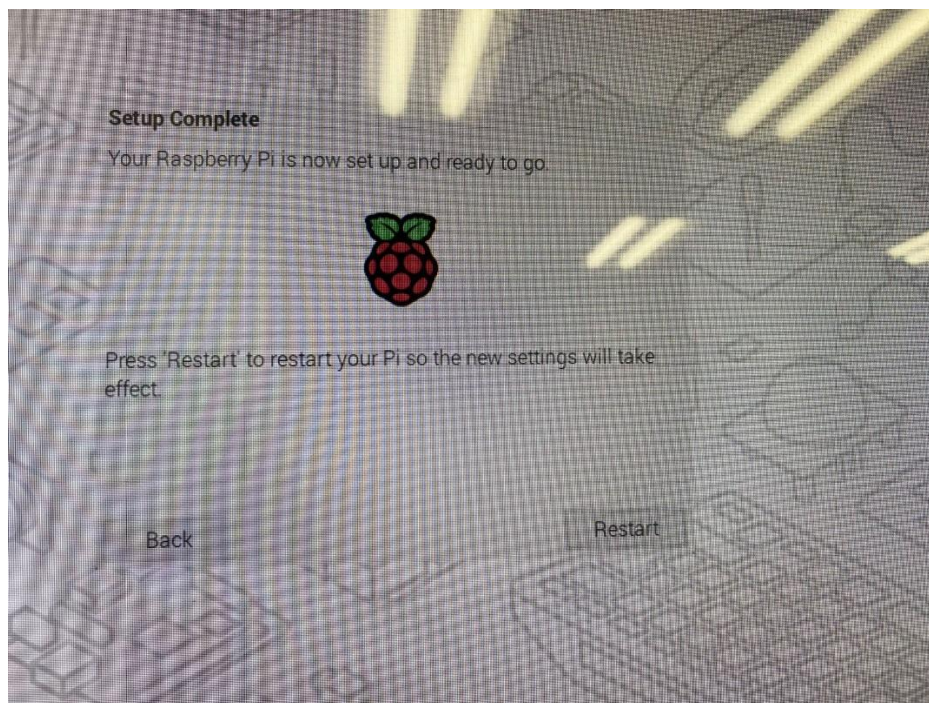
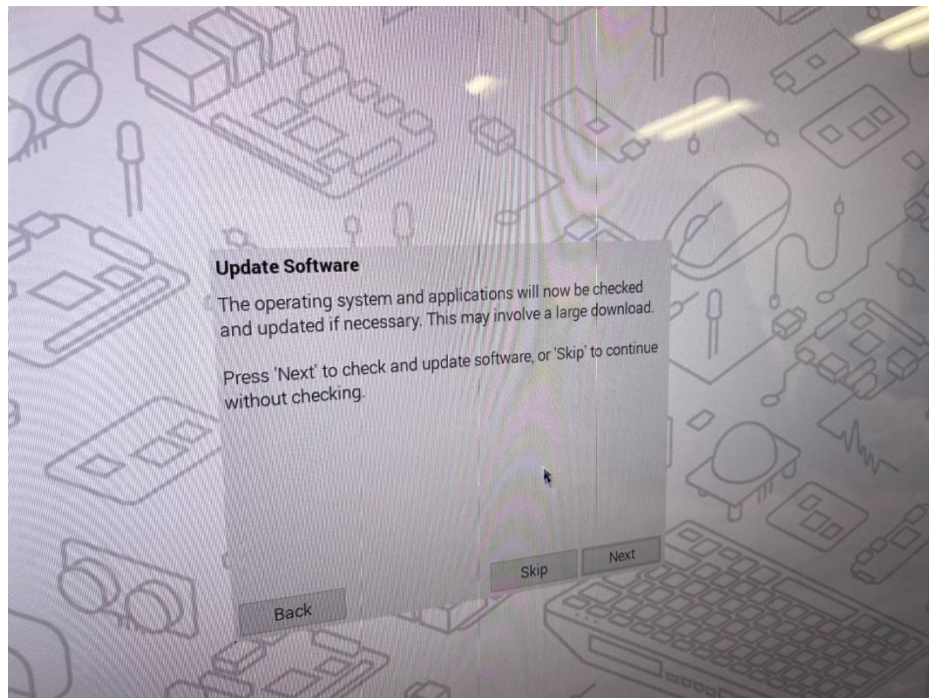
**Enter WiFi Password**

Enter the password for the WiFi network 'SFBU-Guest'.

Password:

☐ Hide characters

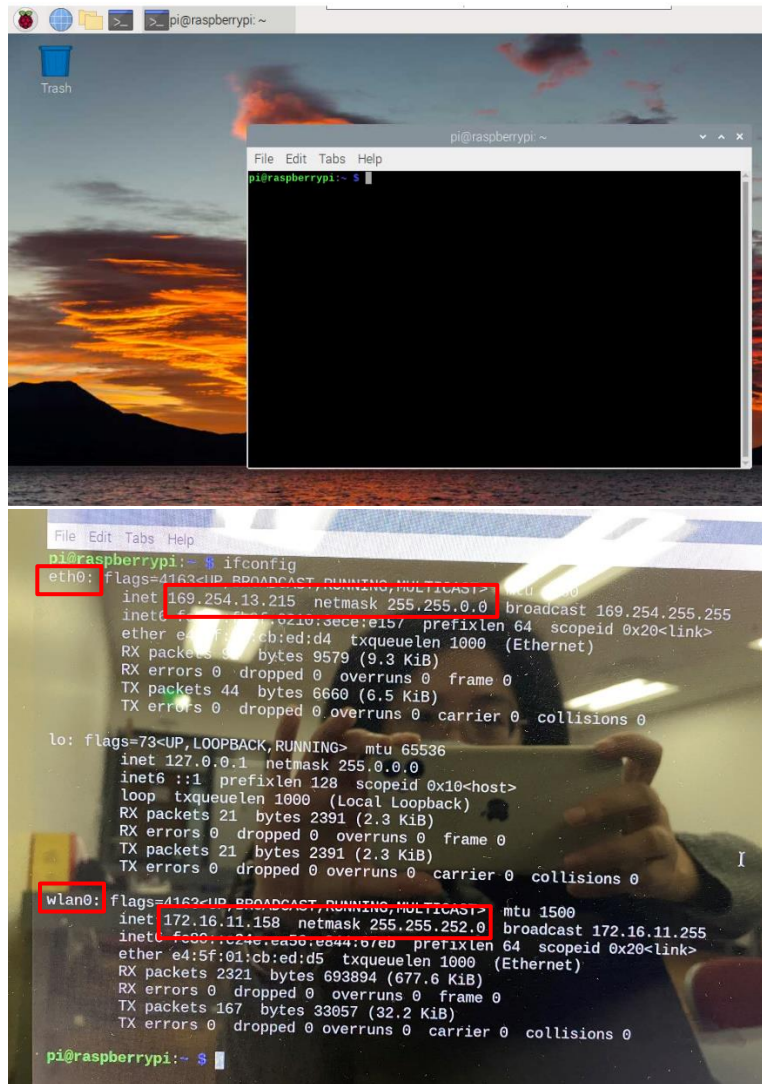
Press 'Next' to connect, or 'Skip' to continue without connecting.



So far, you have done the basic setup for the board already!!!!



- e. Get the **IP information** of your Raspberry Pi Board
- Open a terminal, type command “**ifconfig**” (See the snapshots)



```
pi@raspberrypi:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 169.254.13.215 netmask 255.255.0.0 broadcast 169.254.255.255
    inet6 fe80::c219:3ece:e157 prefixlen 64 scopeid 0x20<link>
    ether e8:9f:cb:ed:d4 txqueuelen 1000 (Ethernet)
    RX packets 5 bytes 9579 (9.3 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 44 bytes 6660 (6.5 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 21 bytes 2391 (2.3 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 21 bytes 2391 (2.3 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

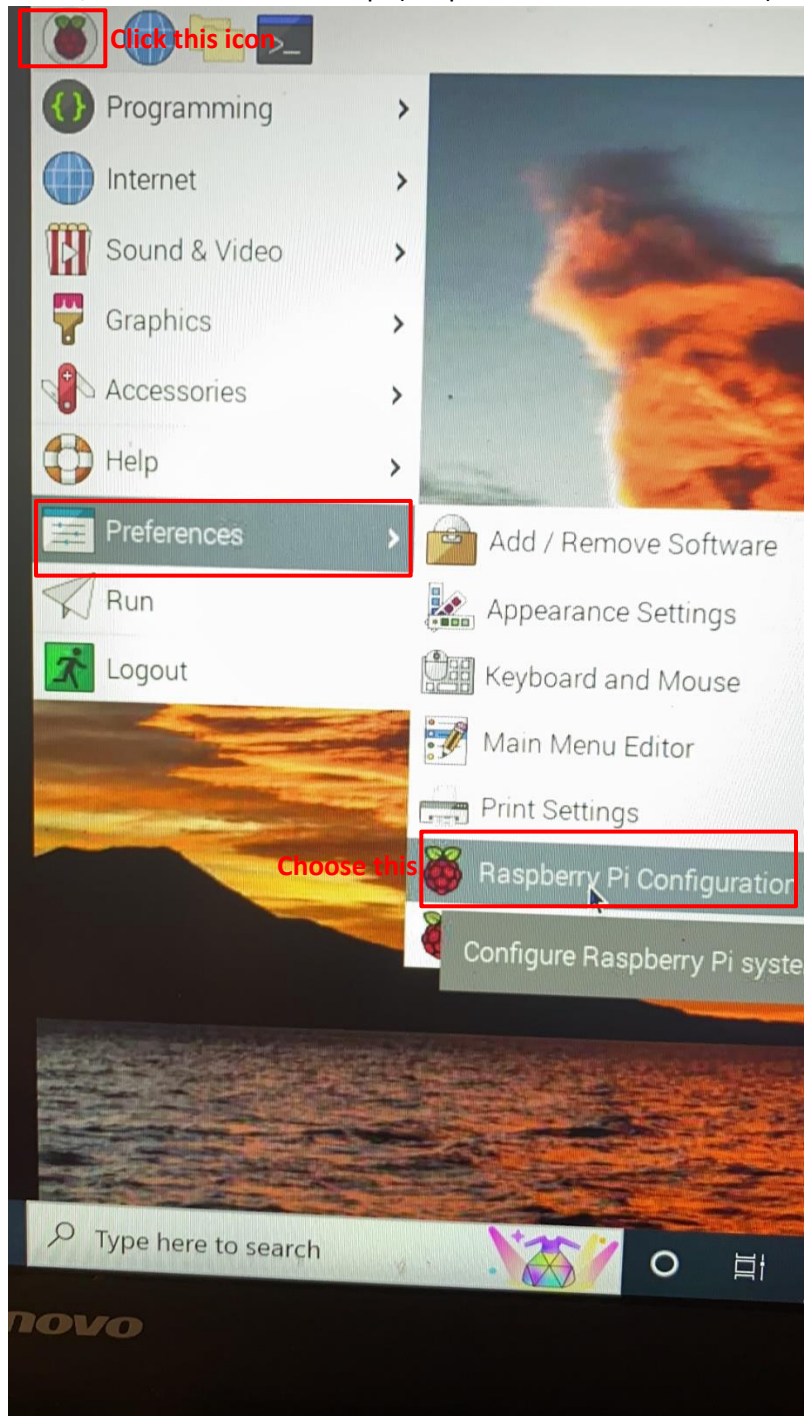
wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.16.11.158 netmask 255.255.252.0 broadcast 172.16.11.255
    inet6 fe80::c219:3ece:e157 prefixlen 64 scopeid 0x20<link>
    ether e4:5f:01:cb:ed:d5 txqueuelen 1000 (Ethernet)
    RX packets 2321 bytes 693894 (677.6 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 167 bytes 33057 (32.2 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

pi@raspberrypi:~$
```

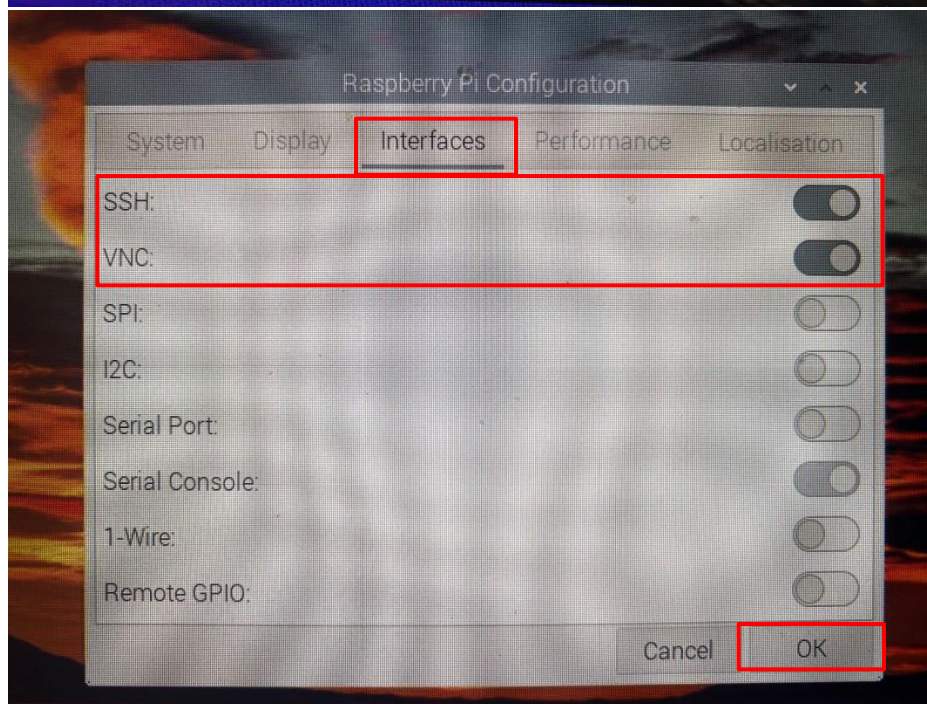
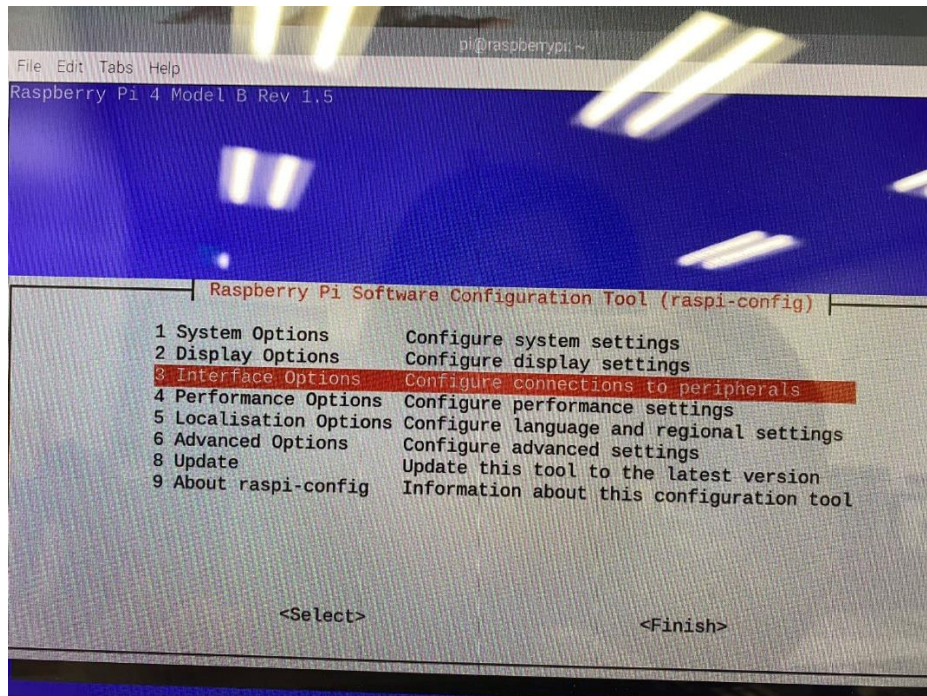
Now you have got the IP information.

Note: If you want to connect Raspberry Pi Board with **Ethernet** cable, use **eth0 ip address** information; otherwise, if you want to connect Raspberry Pi board in **WIFI** mode, use **wlan0 ip address** information.

- f. **Enable SSH and VNC interfaces**, otherwise, you could not log in the board by PuTTY/VNC Viewer in next Step. (Snapshots are attached below)





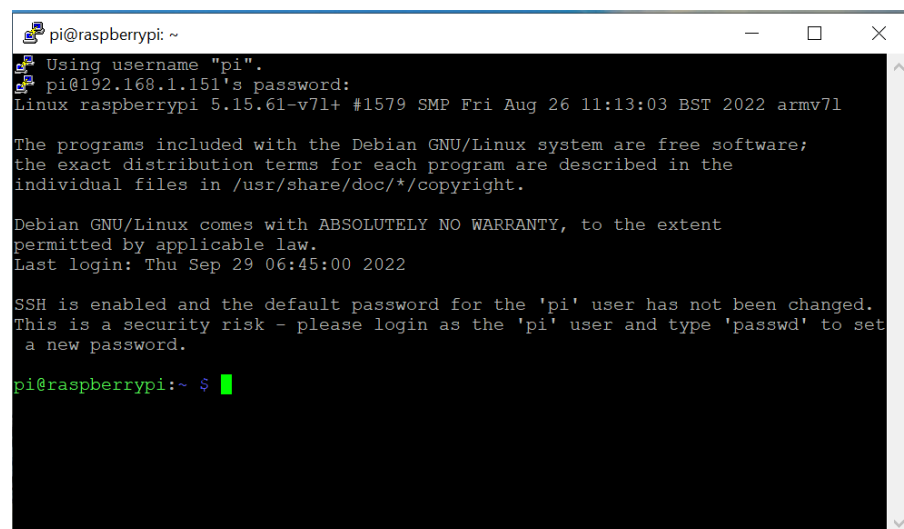
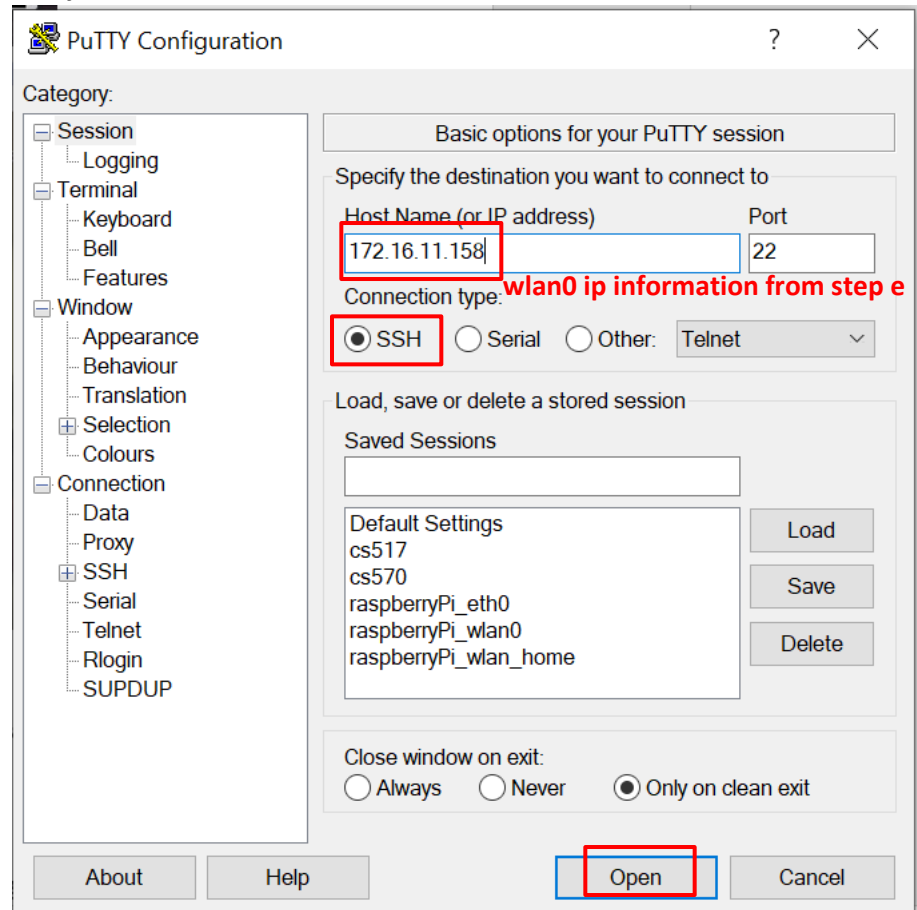


- g. Back to your PC/laptop, Download and Install Tool PuTTY or VNC Viewer  
From this link [Download VNC Viewer | VNC® Connect \(realvnc.com\)](https://realvnc.com/) to download VNC Viewer.

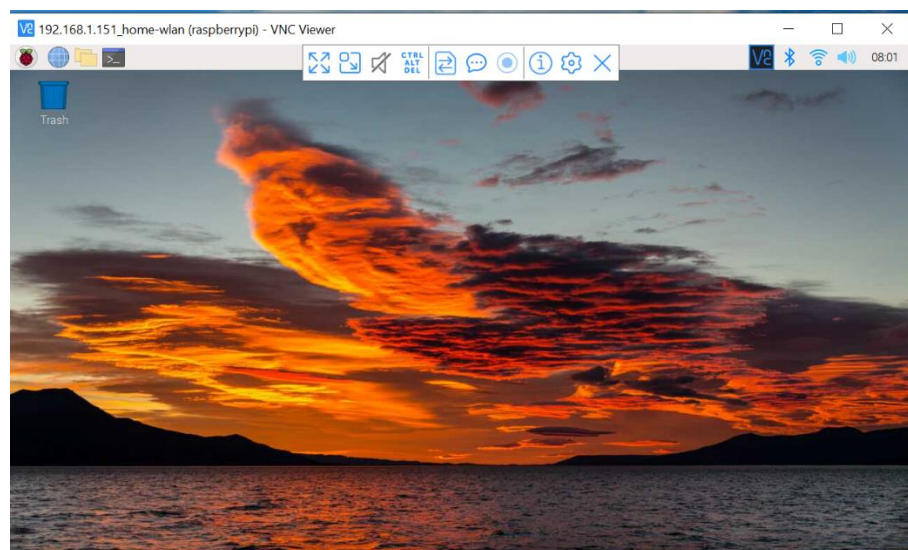
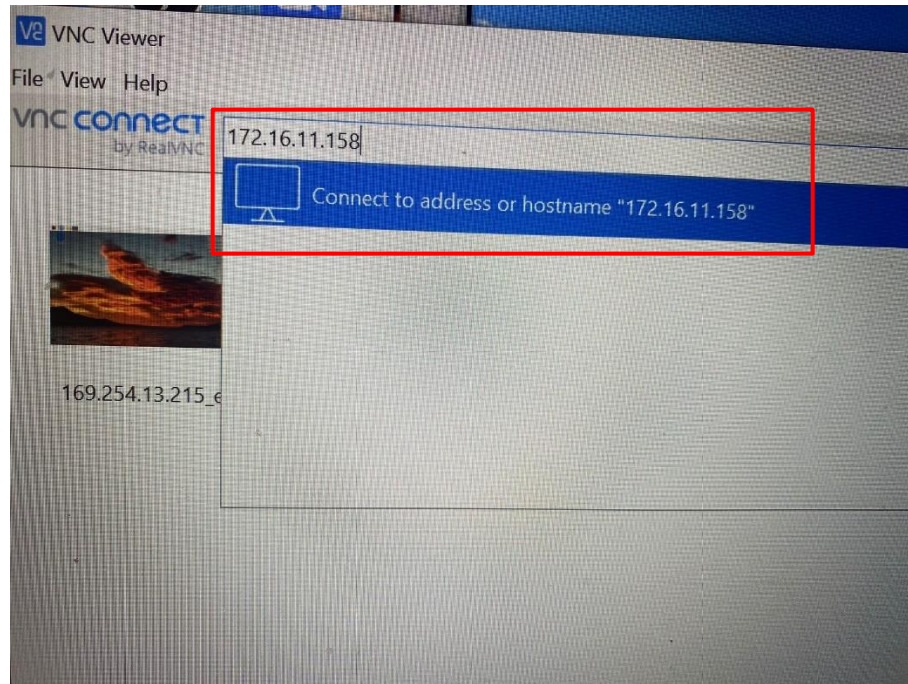


See the snapshots for reference about the connection to the board by using PuTTY and VNC Viewer in WIFI mode.

### PuTTY:



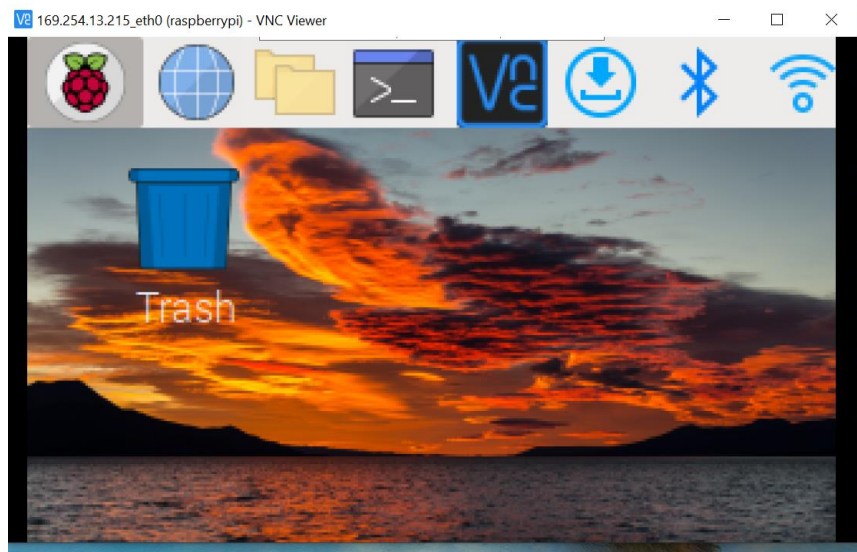
## VNC Viewer:





- h. If your vnc display normally, skip this step. Fix VNC display Issue in case you get the same problem with me in step g.

**Problem:** VNC **ONLY** display **the top left corner** of Raspberry Pi GUI in VNC terminal. At the same time, the display **resolution** is too **low**.



**Fix:** Change the boot configuration setting by modifying the file `/boot/config.txt` like this.

Login the board by putty and open a terminal.

`$sudo vi /boot/config.txt`

```
pi@raspberrypi: ~  
pi@raspberrypi:~ $ sudo vi /boot/config.txt  
pi@raspberrypi:~ $
```

Edit file `config.txt`

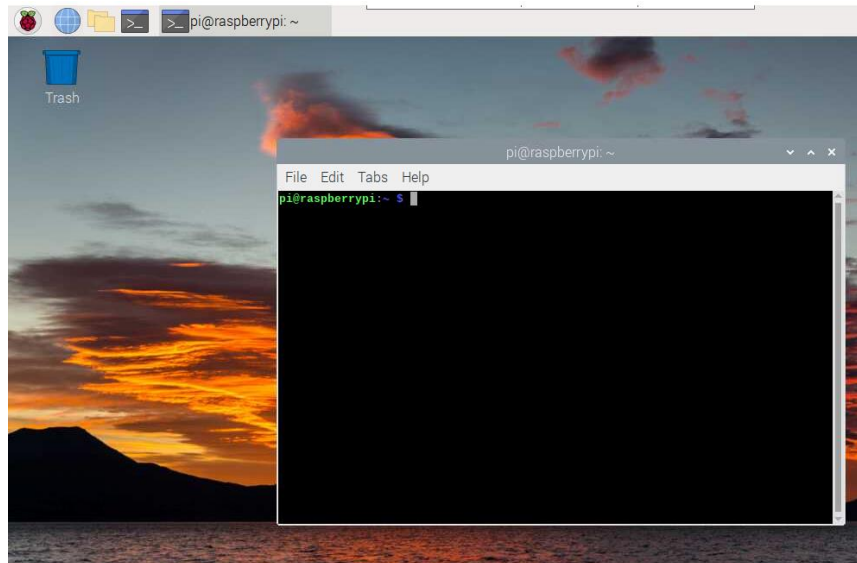
```
# uncomment to force a console size. By default it will be display's size minus  
# overscan.  
framebuffer_width=1280  
framebuffer_height=720  
  
# uncomment if hdmi display is not detected and composite is being output  
hdmi_force_hotplug=1  
  
# uncomment to force a specific HDMI mode (this will force VGA)  
hdmi_group=1  
hdmi_mode=1  
  
# Enable DRM VC4 V3D driver  
#dtoverlay=vc4-kms-v3d  
#max_framebuffers=2
```

Matched to your laptop display resolution

**\$sudo reboot**

```
pi@raspberrypi: ~  
pi@raspberrypi:~ $ sudo vi /boot/config.txt  
pi@raspberrypi:~ $ sudo reboot
```

**After reboot, VNC Display normally:**



**Reference link:** [Fix :: Tiny VNC Display Rapsberry Pi Bullseye Upper Left Corner - YouTube](#)

**Done!!!**