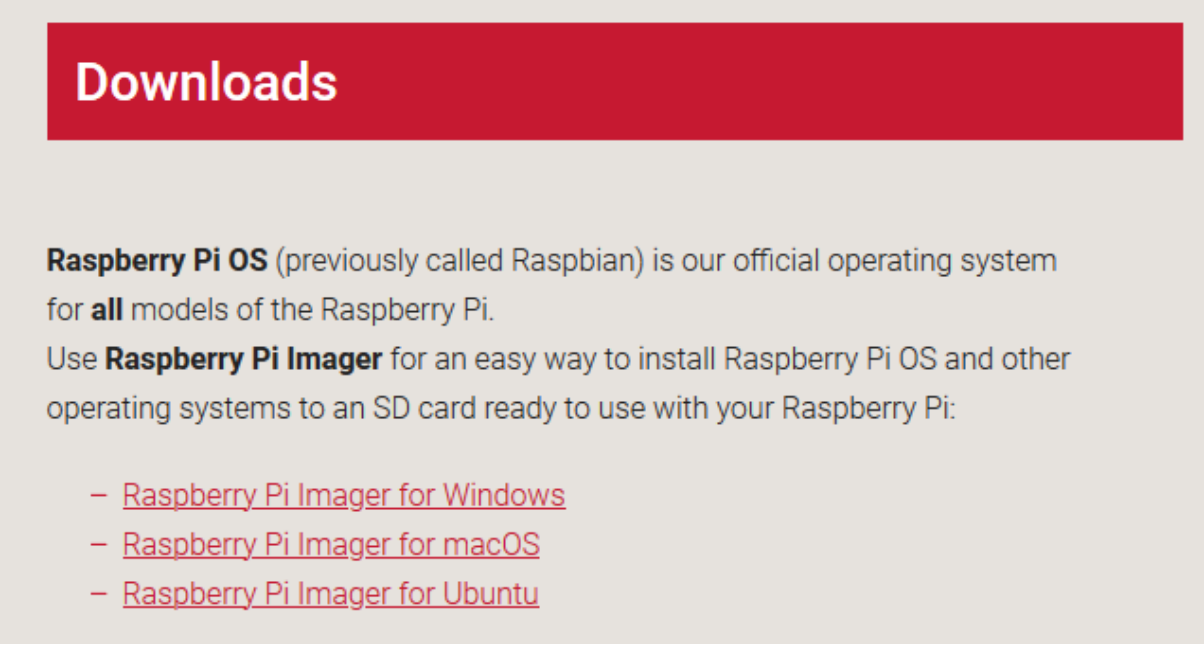
Case: 1 **Download and Install Raspberry Pi Imager & Operating System .**

Step 1 — Download and Install Raspberry Pi Imager

The first step is to download the Raspberry Pi Imager from the official Raspberry Pi website. This tool will allow you to choose an OS, have it downloaded automatically, and write it to the SD card of your choice.

Do not download files from third-party websites as they may be malicious. Only use trusted sources.

The imager tool is available on Windows, macOS, and Ubuntu. Images shown will be from a Mac, but the tool will work the same across the supported platforms.



Raspberry Pi Imager from the Raspberry Pi Foundation

Download the Raspberry Pi Imager for your operating system and follow the installation instructions.

Launch Raspberry Pi Imager

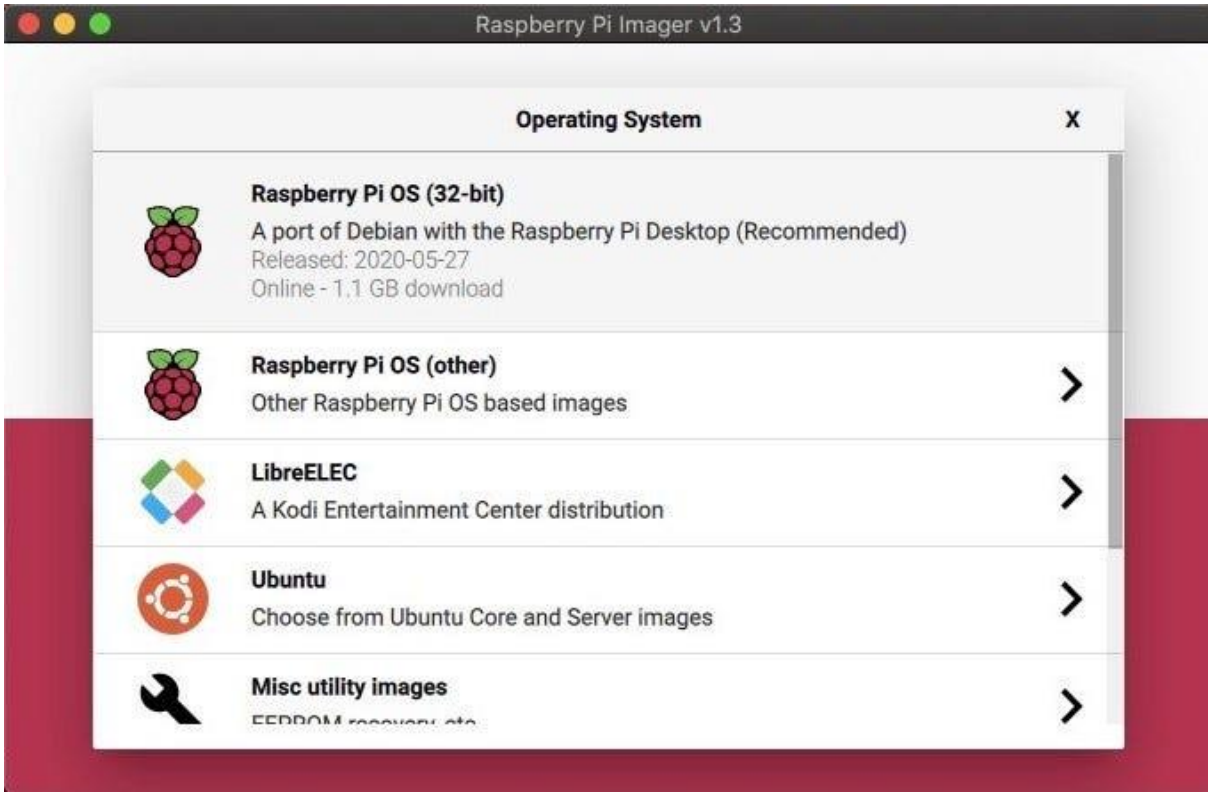
Raspberry Pi Imager

Step 2: Choose OS

- Several operating systems are available for selection within the Raspberry Pi Imager, but we will focus on Raspberry Pi OS.

- There are 3 versions of Raspberry Pi OS available. We will briefly touch on each one but we will be using **Raspberry Pi OS (32-bit)** for this guide.

Select CHOOSE OS



OS Selection within Raspberry Pi Imager

- Raspberry Pi OS (32-bit) Lite: This version provides the bare essentials to get you up and running. There is no Graphical User Interface (GUI) with this image and the size is around 0.4 GB.

- Raspberry Pi OS (32-bit): This version includes a GUI and has basic software installed. The size of this image is around 1.1 GB.

- Raspberry Pi OS Full (32-bit): This version includes a GUI and more software installed than the non-full version. The size of this image is around 2.5 GB

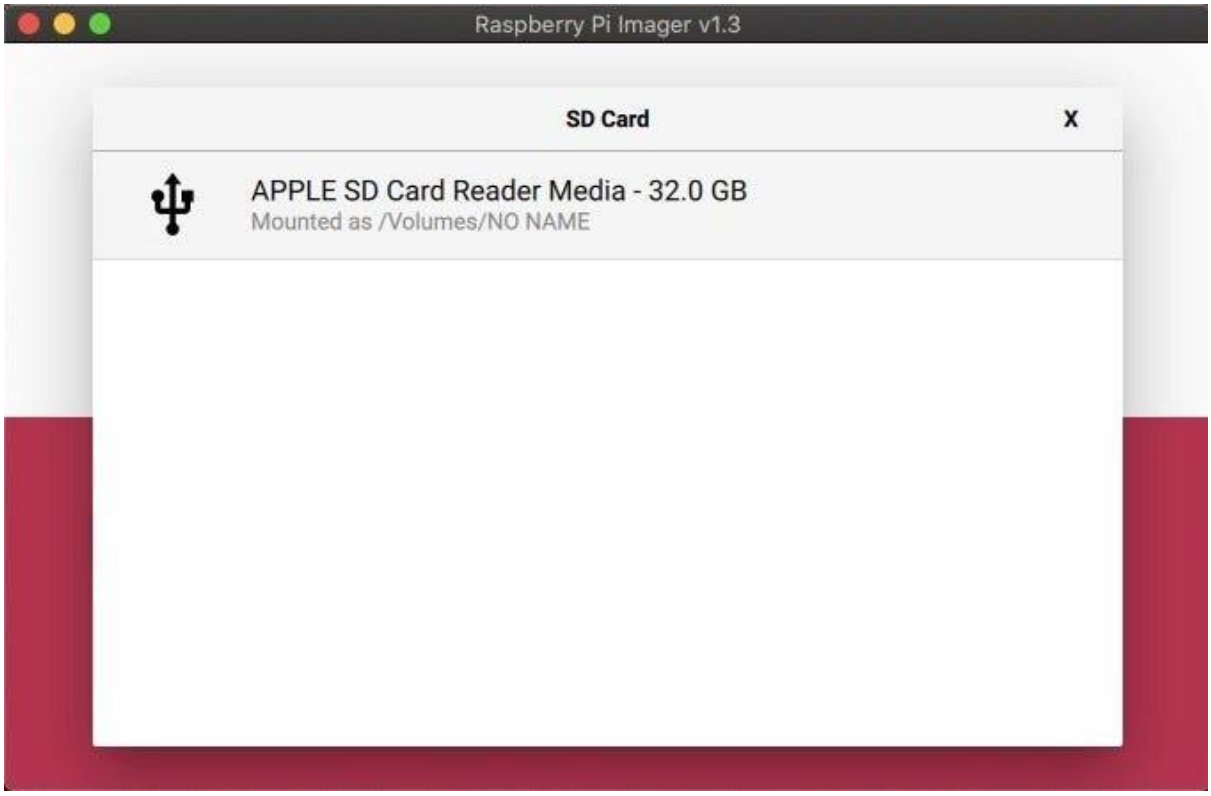
Select Raspberry Pi OS (32-bit)

OS Selected in Raspberry Pi Imager

Step 3: Choose SD Card

- You'll now need your SD card connected to your computer to copy over the OS you chose.

Select CHOOSE SD CARD and select the SD card you have connected to your computer.



Select SD Card

You're now ready to begin writing the OS to your SD card.

OS and SD Card selected

Step 4: Write to SD Card

This step will write the selected OS to the SD card and run a verification that the copy was successful.

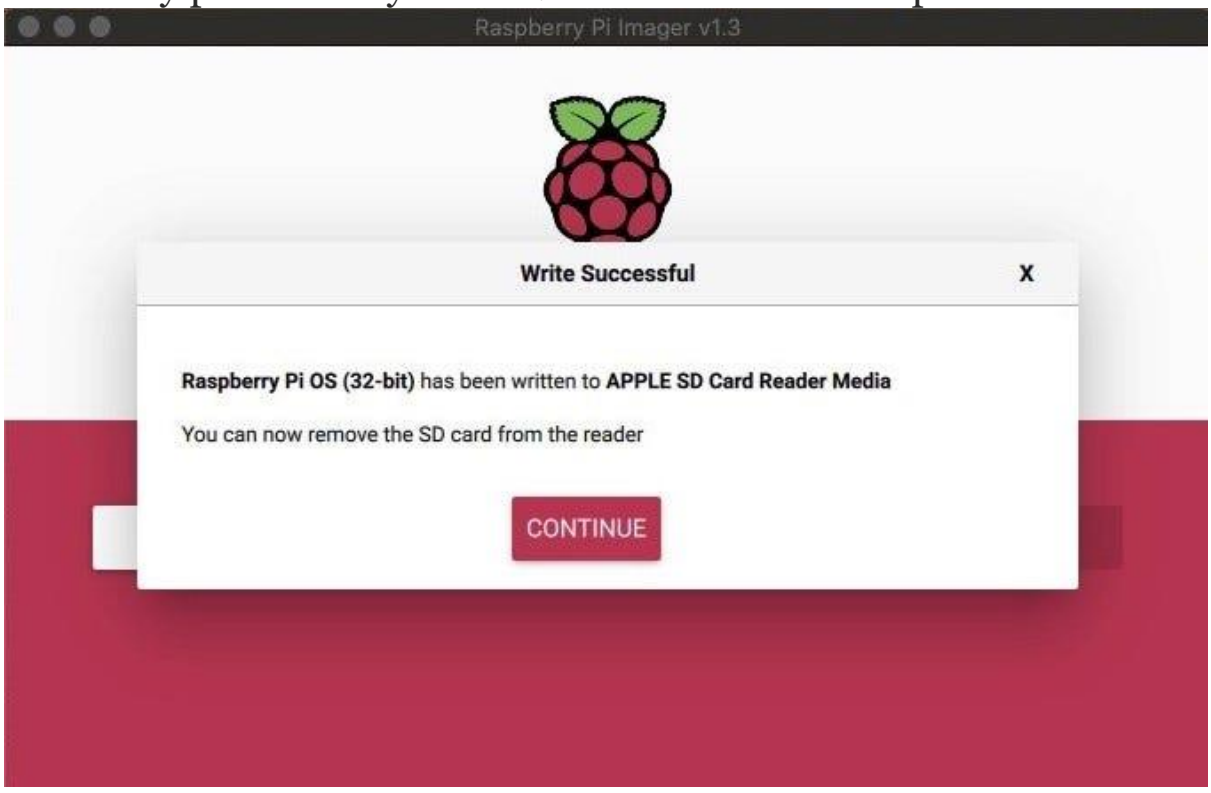
Select WRITE

Write Process Started

The writing process will vary depending on the OS you selected. Typically, this will only take a few minutes.

Verifying Write

The verify process only takes about a minute to complete.



Write Successful

The OS has now been copied to your SD card. You are now ready to move on to booting your Raspberry Pi.

Select CONTINUE

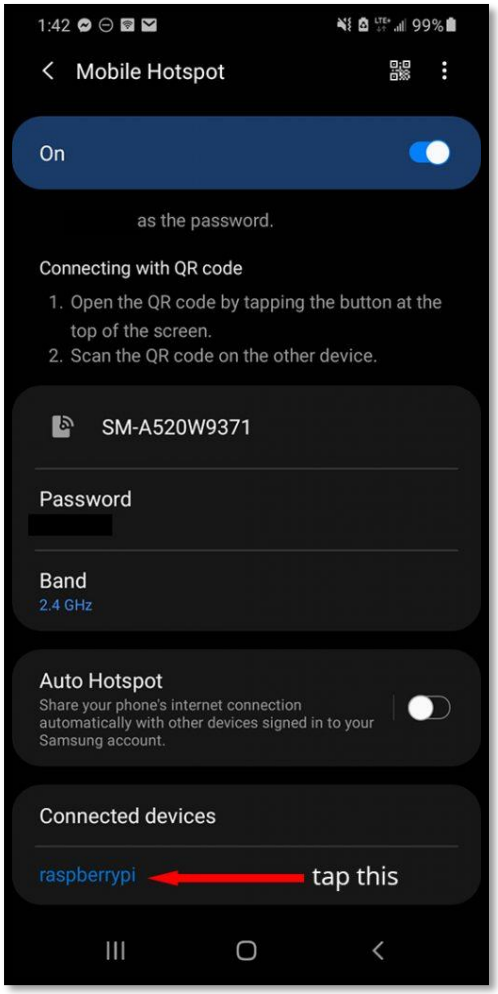
➔ Then Enable the ssh to connect the raspberry pi directly to the Desktop.

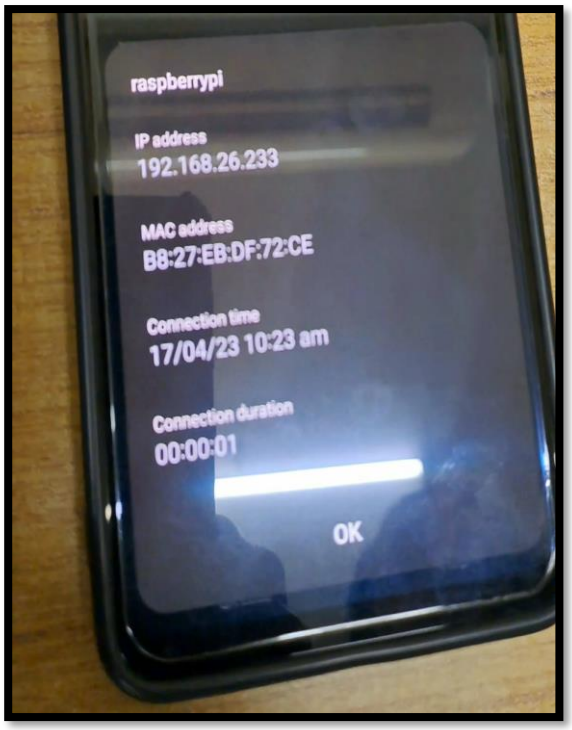
⇨First open the sd card in laptop after completing the above the above process and the create a new empty text file without extension, Name as: - " ssh ".

⇨ Save the below file as: -"wpa_supplicant.conf "

```
country=IN
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
network={
     ssid="YOUR WIFI NAME "
     psk="YOUR WIFI PASSWORD"
     key_mgmt=WPA-PSK
  }
```

➔Then if all the above steps are successful the you may able to see the ip address op raspi pi in the “Ip address tracker” OR if you are connected to mobile hotspot then it is displayed there to connected device.

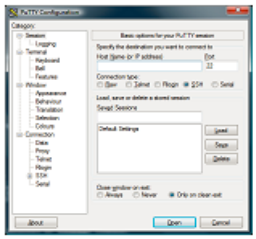




Case 2: - To install the plugins to connect the raspberry pi 4 to the desktop Directly.

Step 1: Download Prerequisites.

- Putty is necessary for this; you can download putty from here.



Download PuTTY

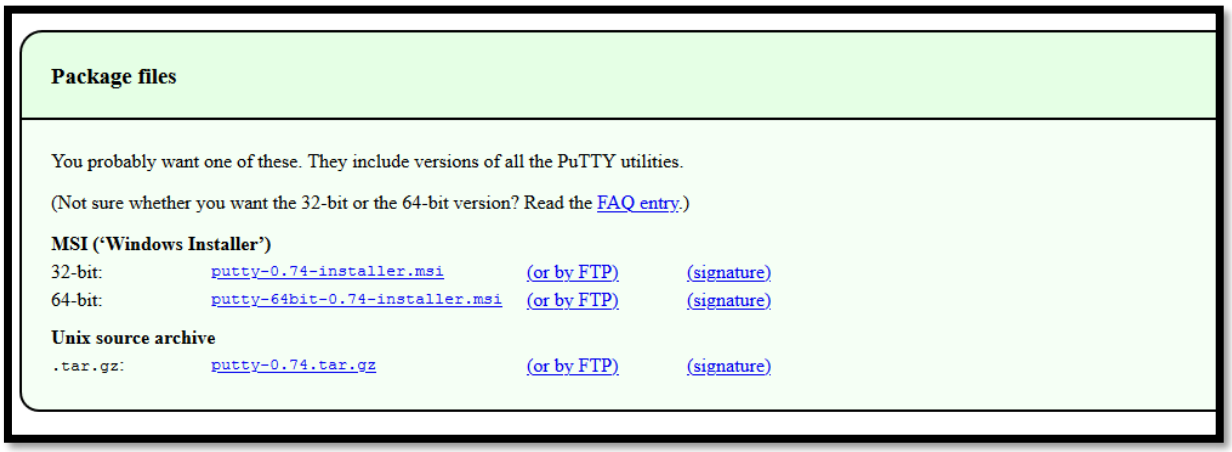
PuTTY is an SSH and telnet client, developed originally by Simon T
software that is available with source code and is developed and supp

You can download PuTTY here.

Below suggestions are independent of the authors of PuTTY. They are *not* to be seen a

Download link

- After clocking the download dialog, you will be asked to choose the type of installer you would like, you can choose according to your system (32-bit, 64-Bit Windows or Unix tar ball)



Package files

You probably want one of these. They include versions of all the PuTTY utilities.

(Not sure whether you want the 32-bit or the 64-bit version? Read the FAQ entry.)

MSI ('Windows Installer')

32-bit:	putty-0.74-installer.msi	(or by FTP)	(signature)
64-bit:	putty-64bit-0.74-installer.msi	(or by FTP)	(signature)

Unix source archive

.tar.gz:	putty-0.74.tar.gz	(or by FTP)	(signature)

Download type

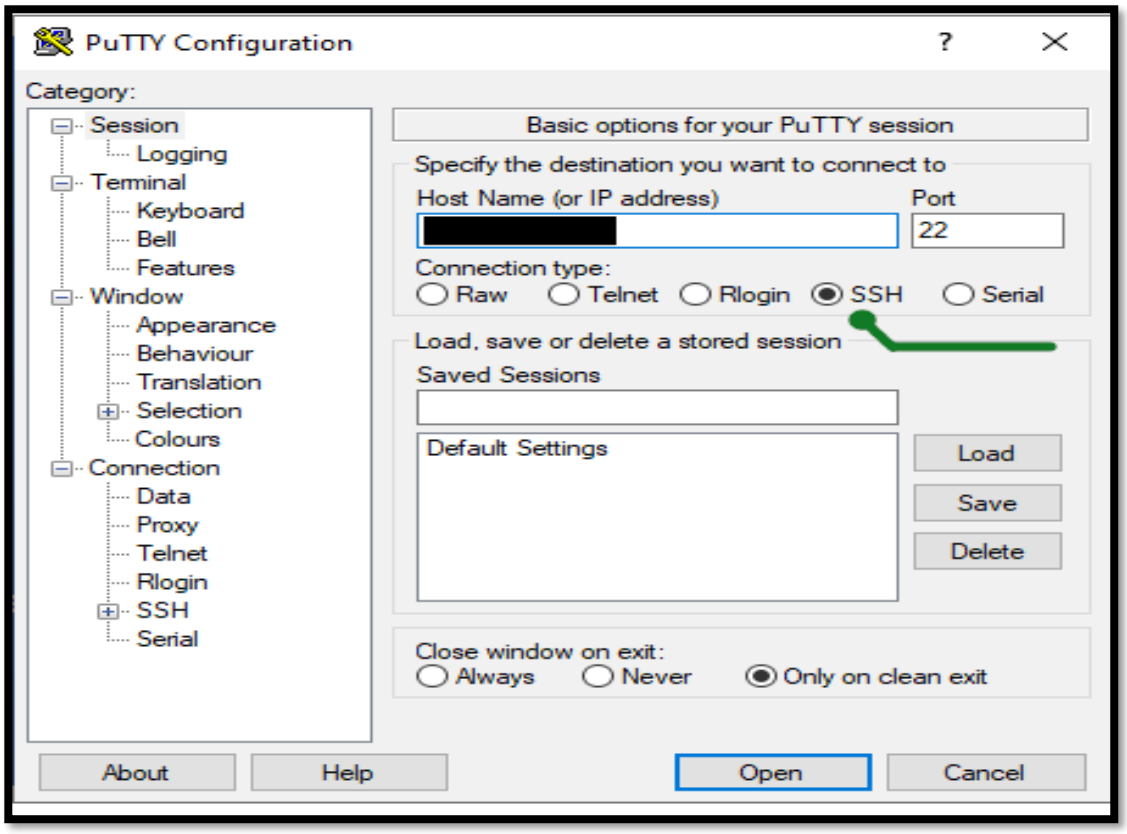
Note-You need to put a **SSH** named Blank file in the Raspberry pi's BOOT partition from the PC before we get ahead and do the whole process.

- After downloading the putty just simply install it in your system. Open it and we will now go to the connection process.

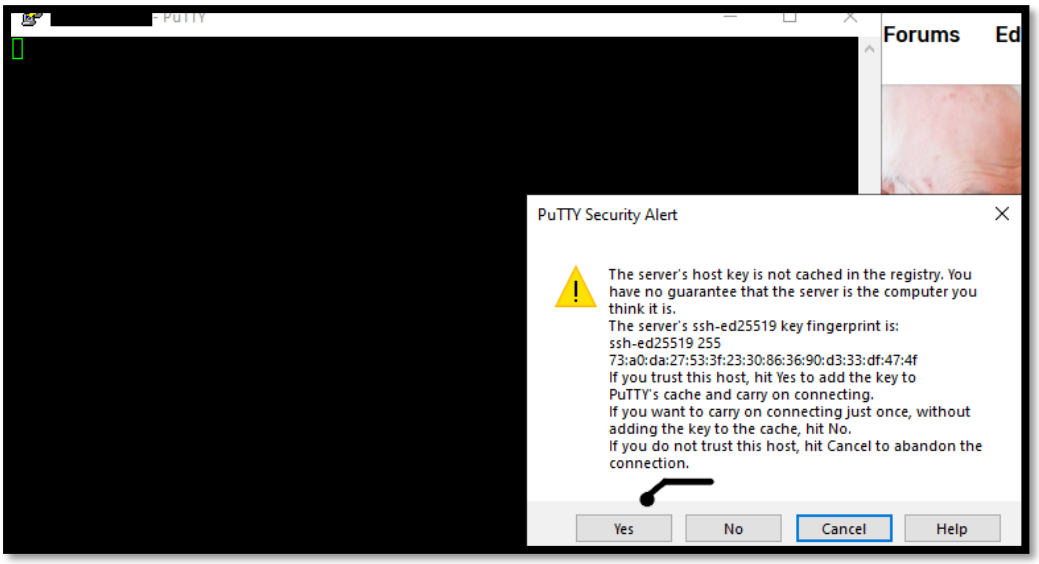
Step 2: Getting IP of your Raspberry Pi

- To get the IP of your Raspberry Pi there are several processes which I have discussed in another blog, discussing it here will only make this article lengthy.

PUTTY

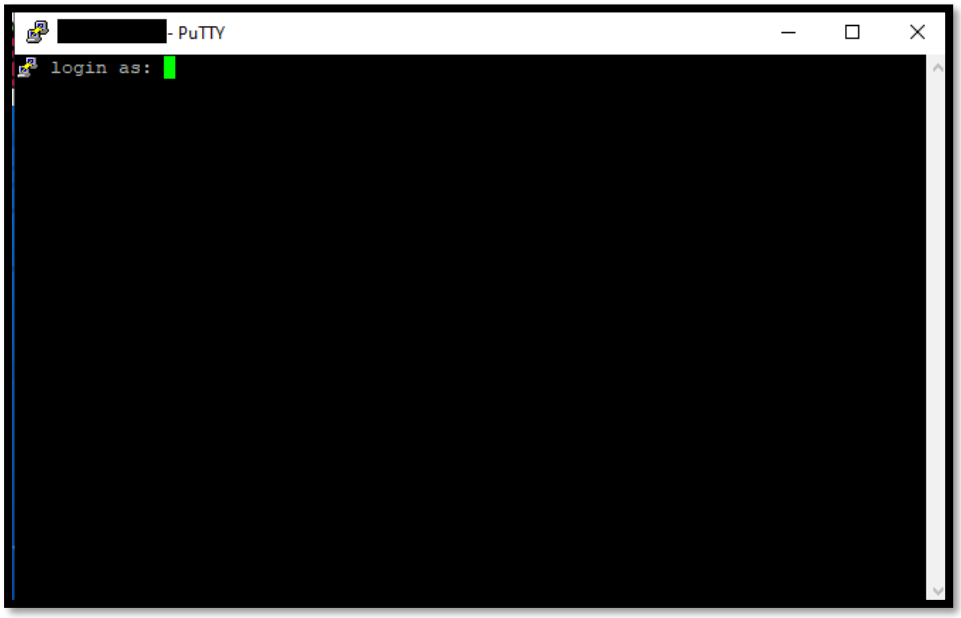


•Put you IP and you don't need to change the port, just click on SSH as shown in above Image.



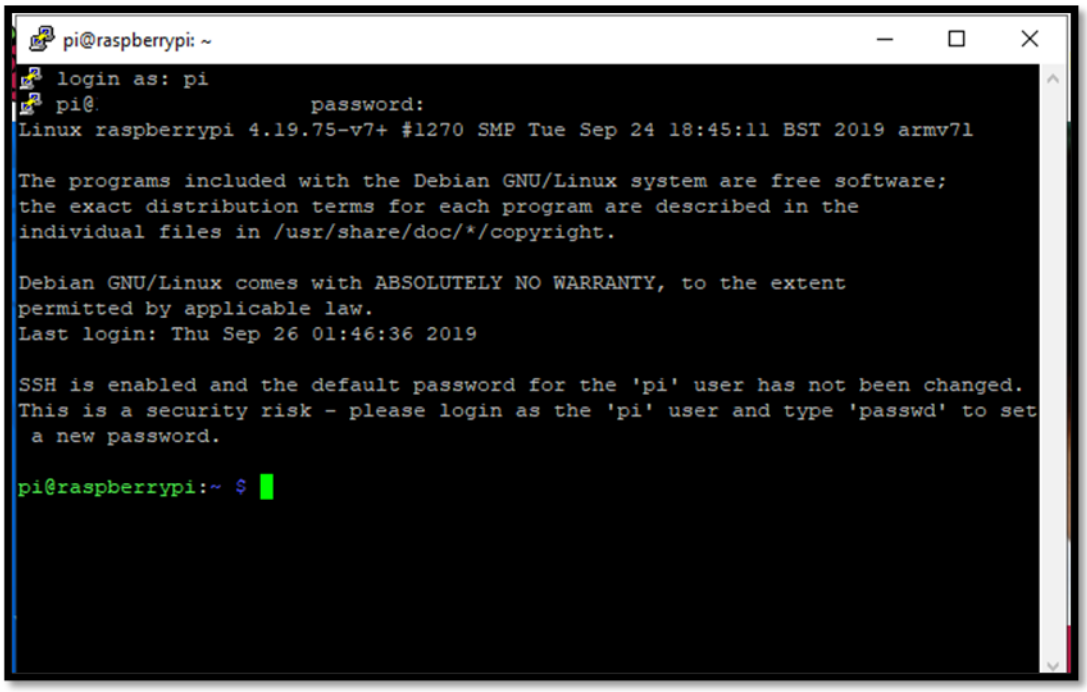
click yes on dialog

- Click yes as shown in the above image.



Enter default login id and password.

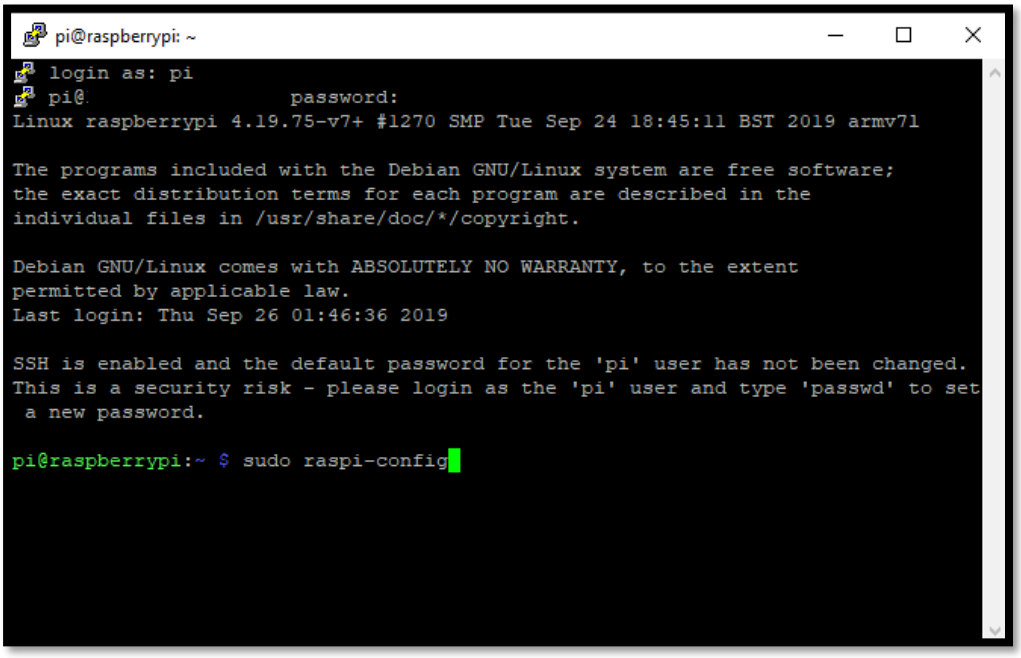
•Once it gets connected. Type username- "pi" and pswd- "raspberry" its default (don't panic if you don't see the password while typing).



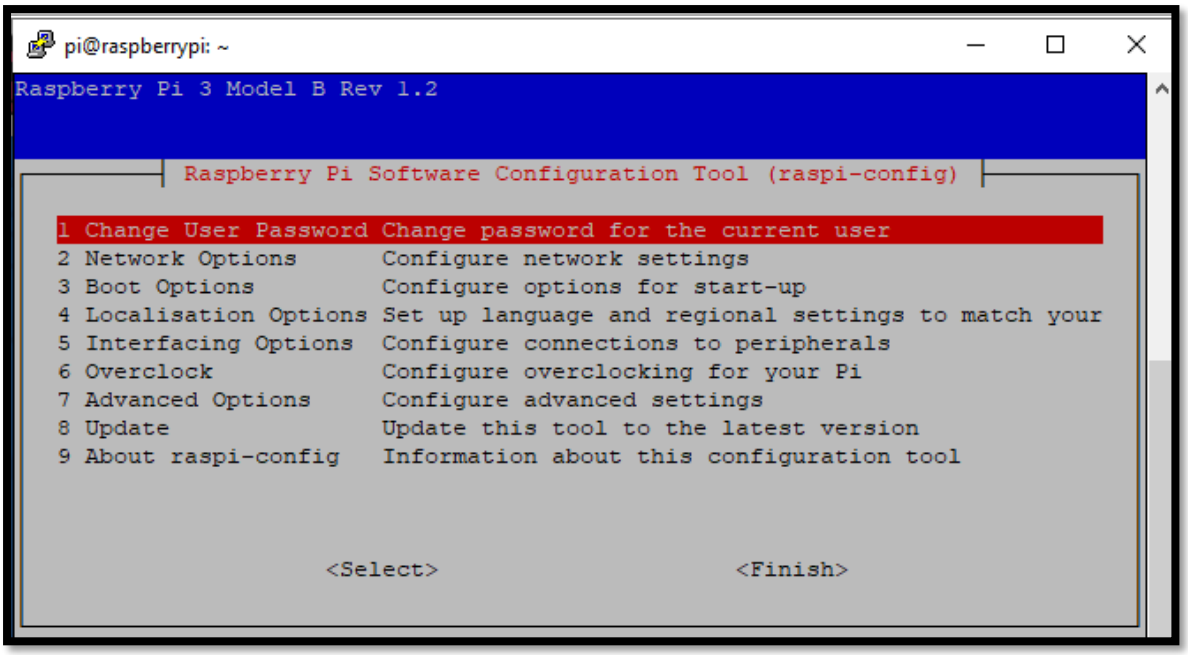
Once connected you will see above screen

- You will see something like this after the connection. Now you are done. You can access your pi through this terminal, it's the same raspberry pi terminal. You can run various tasks through it. If you want to view your raspberry pi screen on the laptop you can follow the below steps.

Step 3: Connecting VNC through Putty

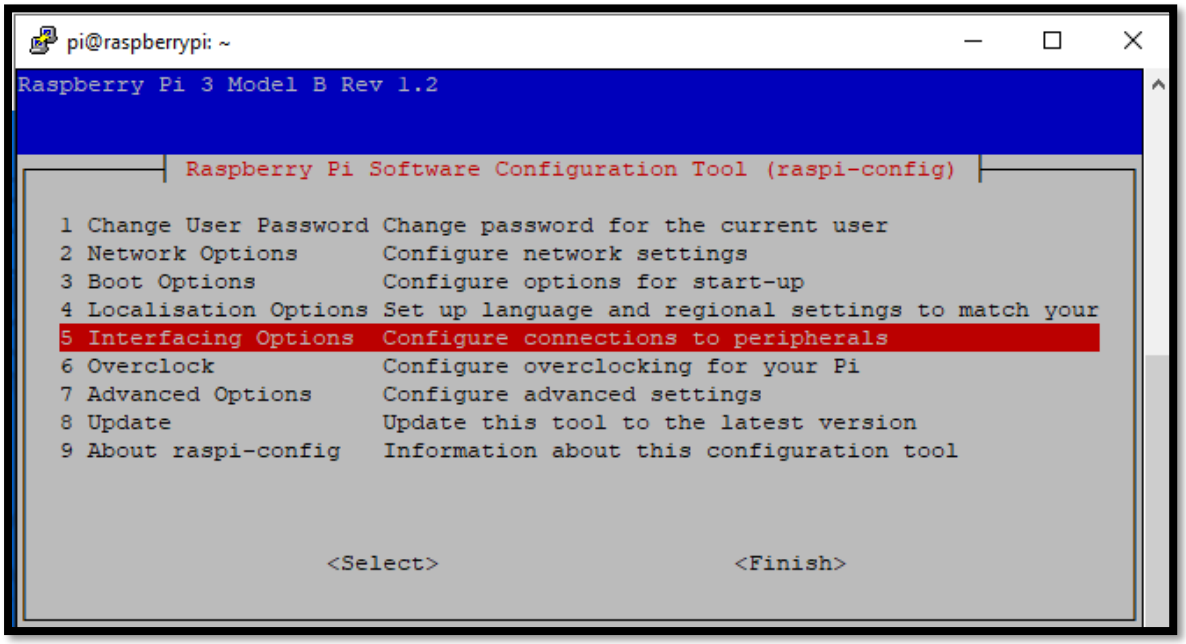


- **type command to go into the config menu: - sudo raspi-config**
- **After that in the terminal type above command.**

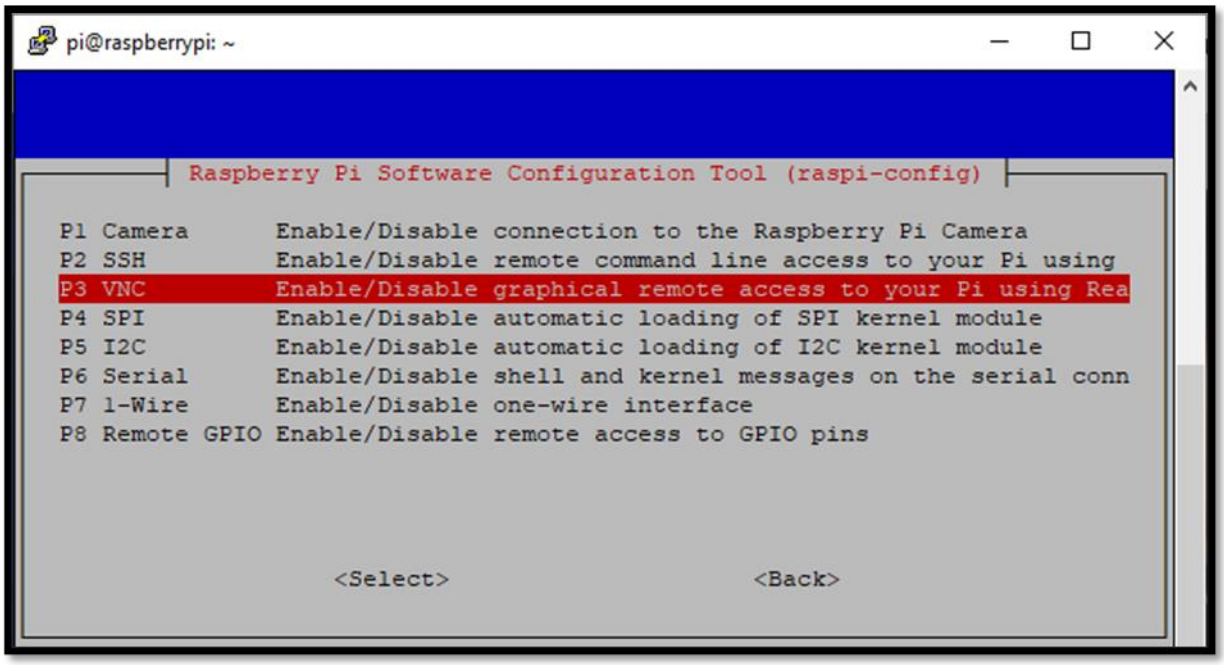


config menu

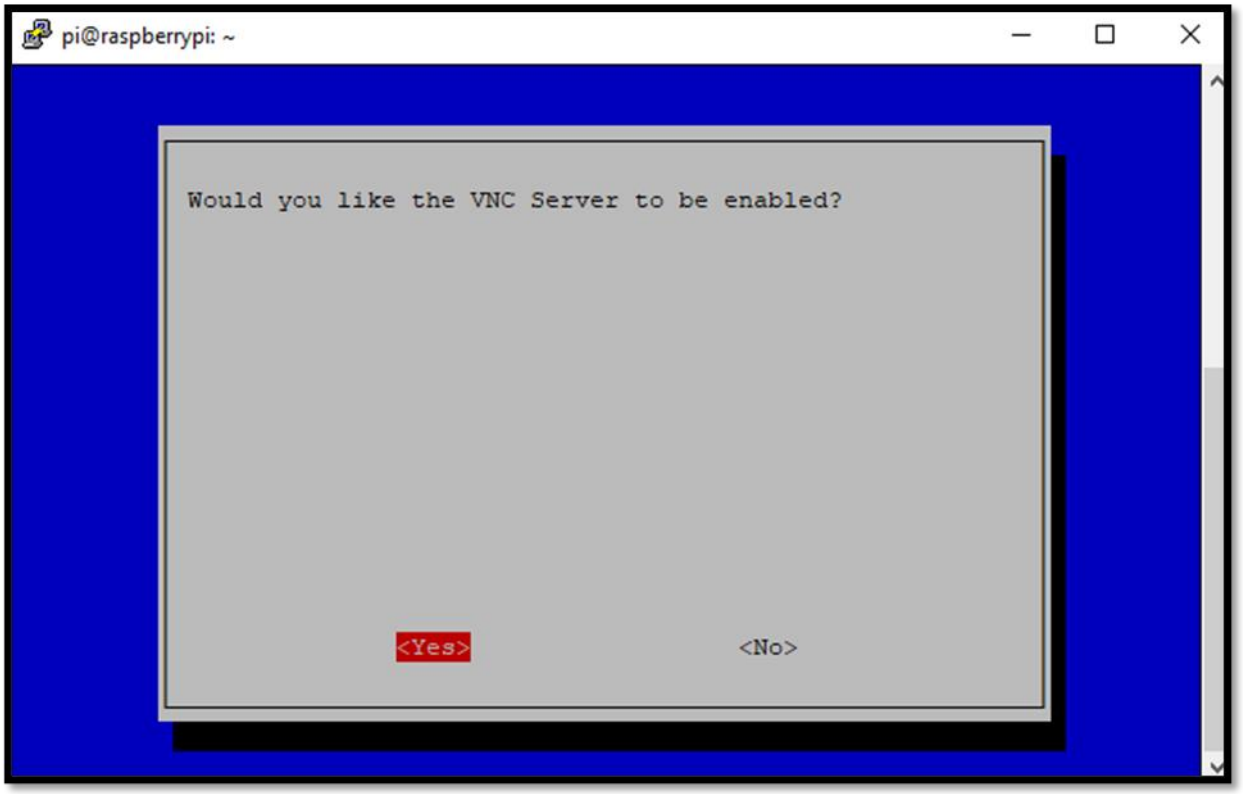
- The config menu of raspberry pi will pop up just go to Interfacing options> VNC > Enable it. After that just restart your Pi.



Interfacing options



Enable VNC



Click yes

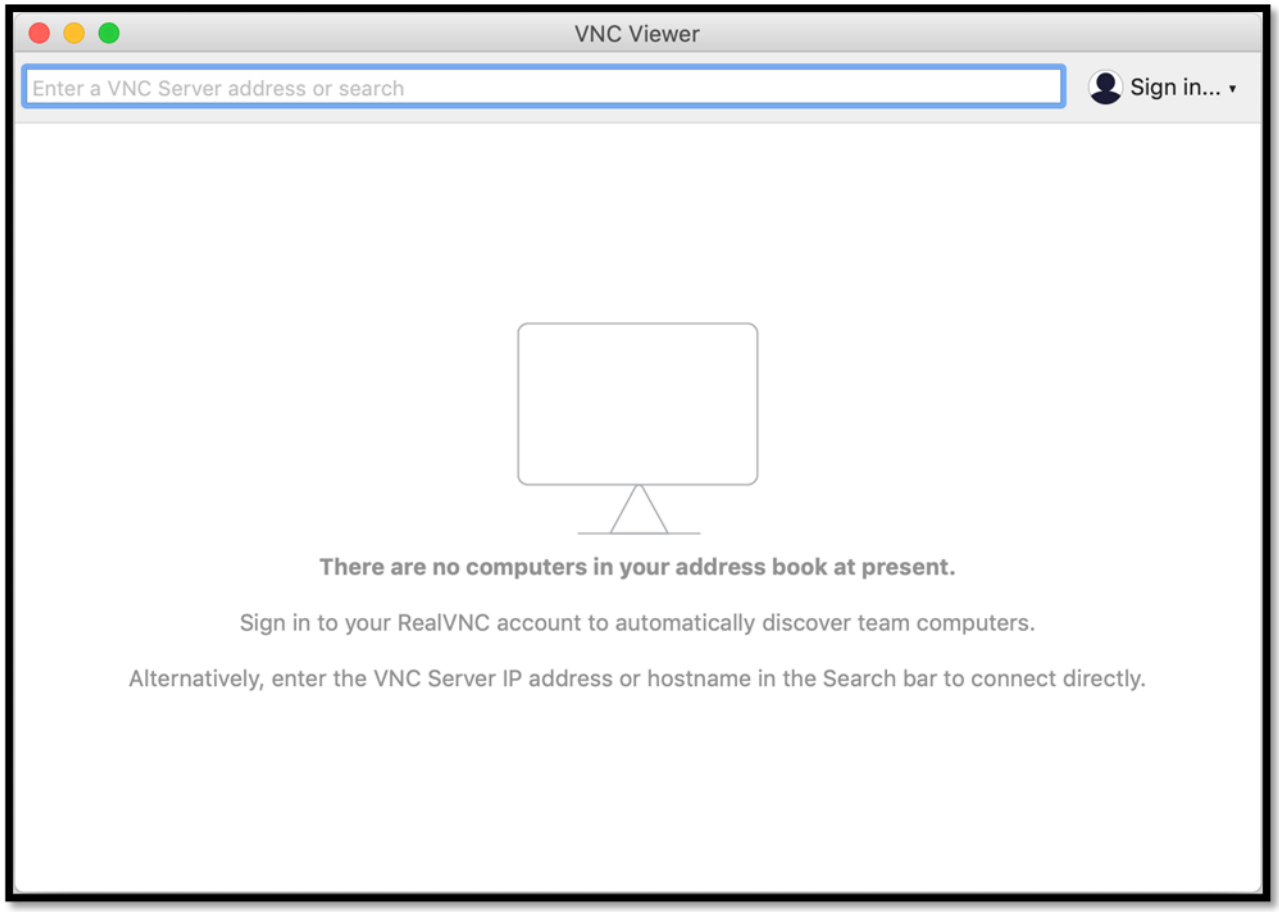
Once VNC is enabled you can put the IP of your Raspberry Pi into the VNC viewer and view your raspberry pi on the laptop screen or phone screen or if you don't wanna use VNC, you can directly use your raspberry pi through its terminal and run tasks.

Installing a VNC Viewer

You will need to install a VNC Viewer on your computer, so you can connect to you Raspberry Pi. There are a number of viewers available, but the easiest to set up is Real VNC Viewer. You can download Windows and Mac installers from here: https://www.realvnc.com/en/connect/download/viewer/

Testing your server over your local network

After you have installed a VNC Viewer, you should test that you can connect to your Raspberry Pi on your local network. You should do this before setting.

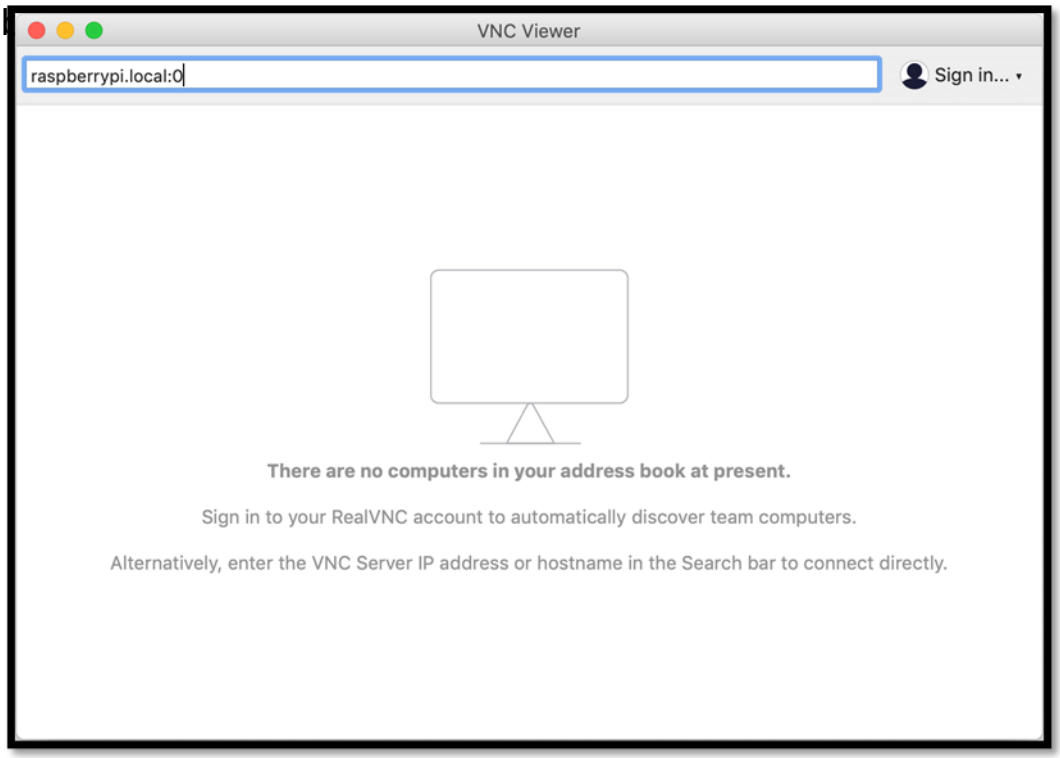


up the tunnel for remote access, to check that everything is installed correctly.

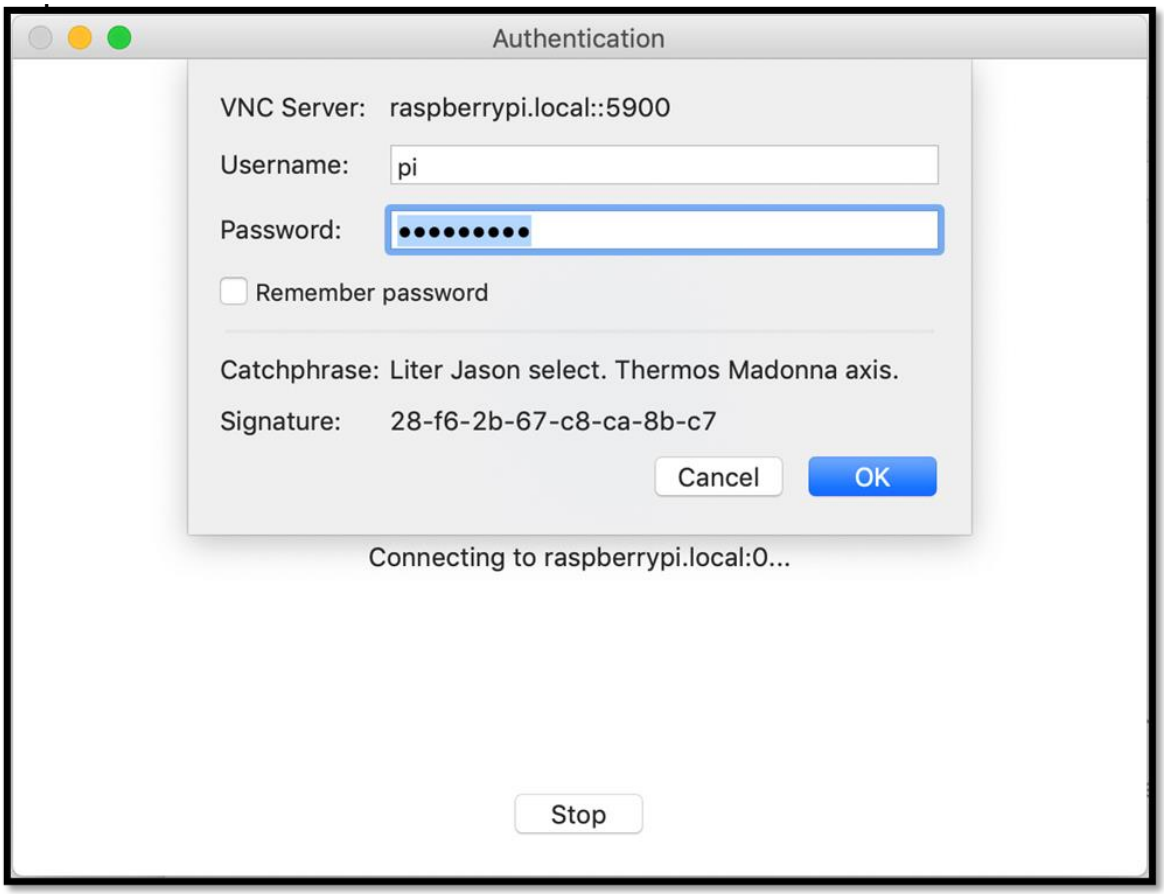
1. Open Real VNC Viewer.

2. Enter the address "raspberrypi. local:0", where "raspberrypi" is the hostname of your device, and press Enter.

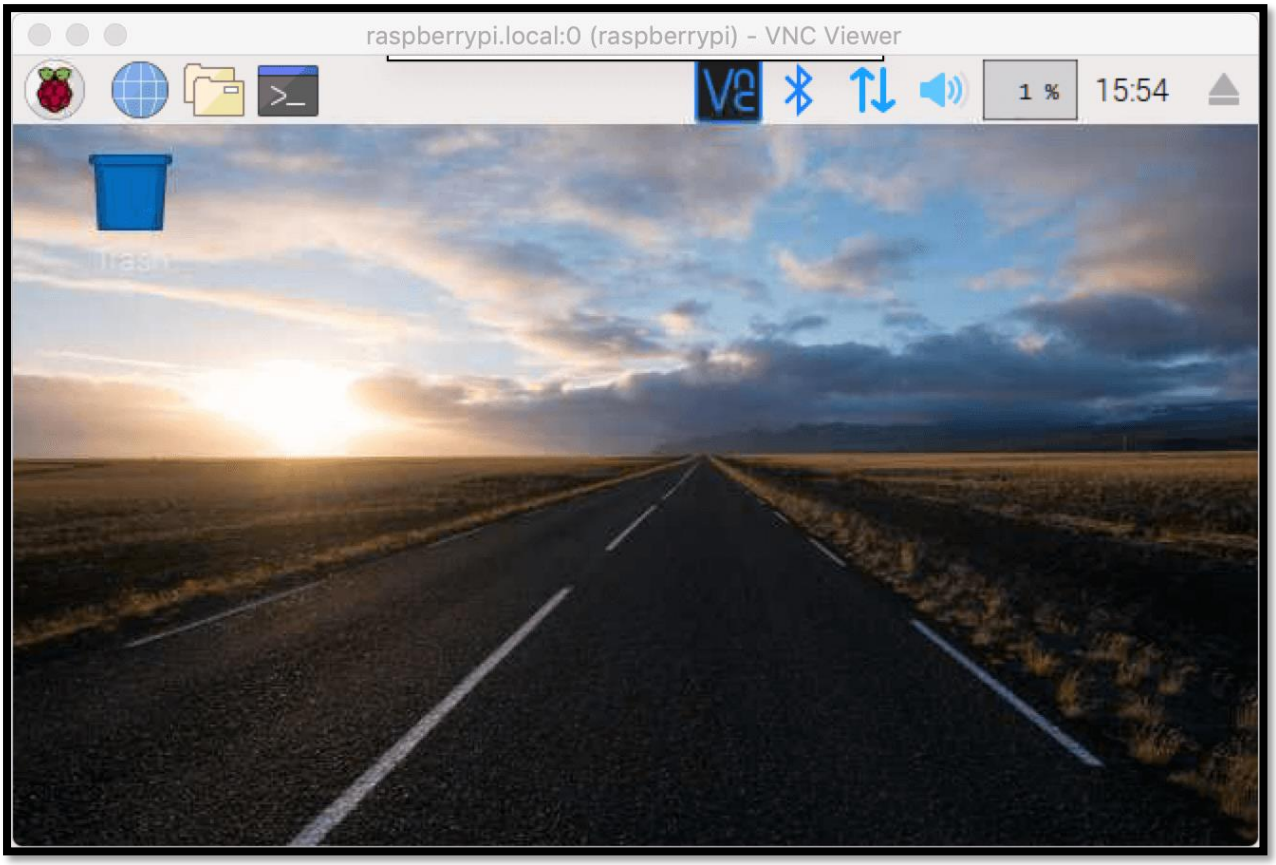
NOTE: Please make sure that your Raspberry Pi is not using the default password 'raspberry', so that your device is protected from unauthorized



3. Enter the username and password for the raspberry pi login. For example, username "pi" and password "raspberry", and press OK.



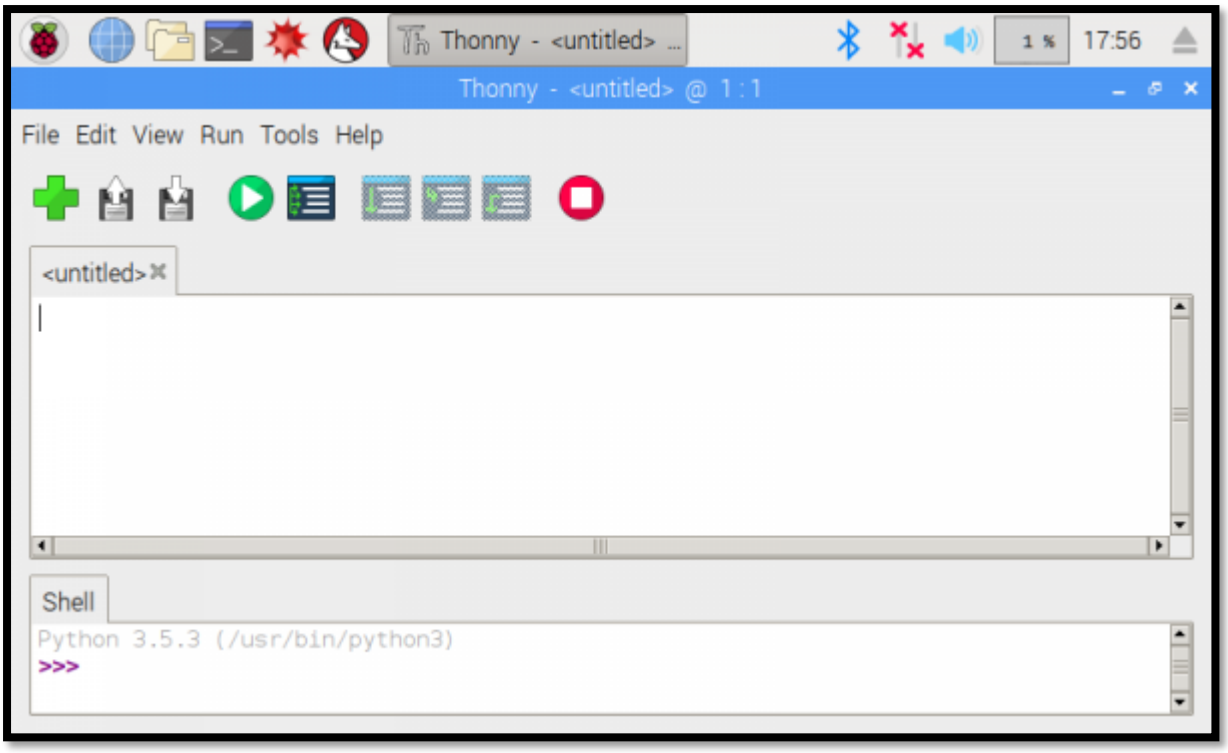
4. The VNC session should start, and you should see your Raspberry Pi desktop.



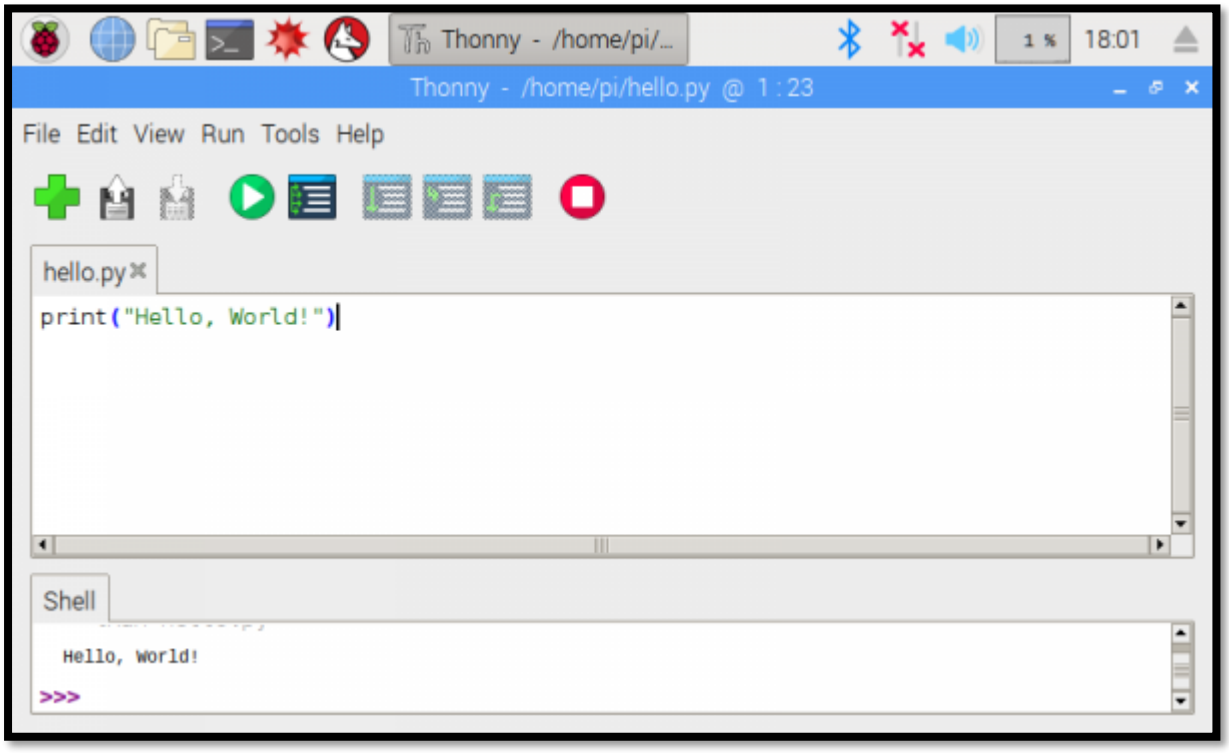
Python IDE In Raspberry Pi

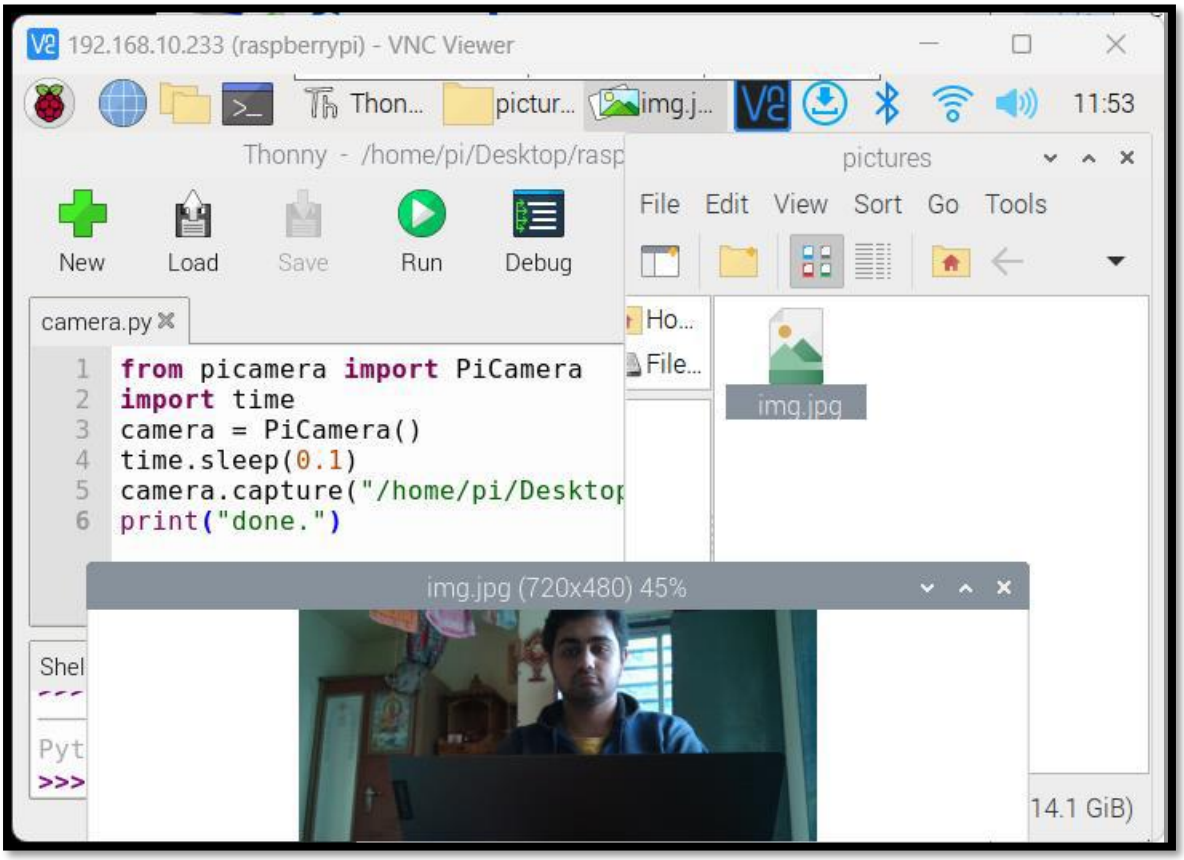
Thonny

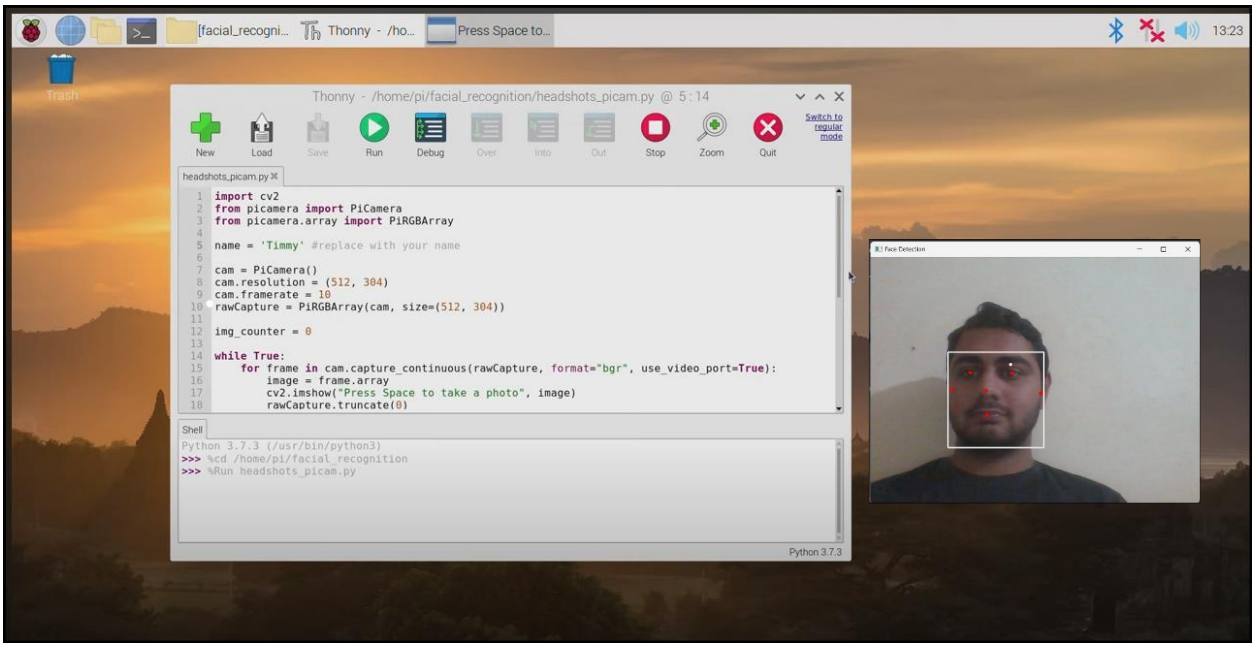
- Finally, Thonny is another great, easy-to-use IDE that comes pre-loaded on Raspbian. It focuses on Python and has an interactive environment when you load the program. Start Thonny by clicking on the Raspberry Pi icon followed by Programming > Thonny Python IDE.



Write your program in the top pane, click File > Save as... to save it, and click Run > Run current script to execute the program. Output will appear in the bottom interpreter pane.







OS DUMPER	https://www.raspberrypi.com/software/
VNC	https://www.realvnc.com/en/connect/download/viewer/
Putty	https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html