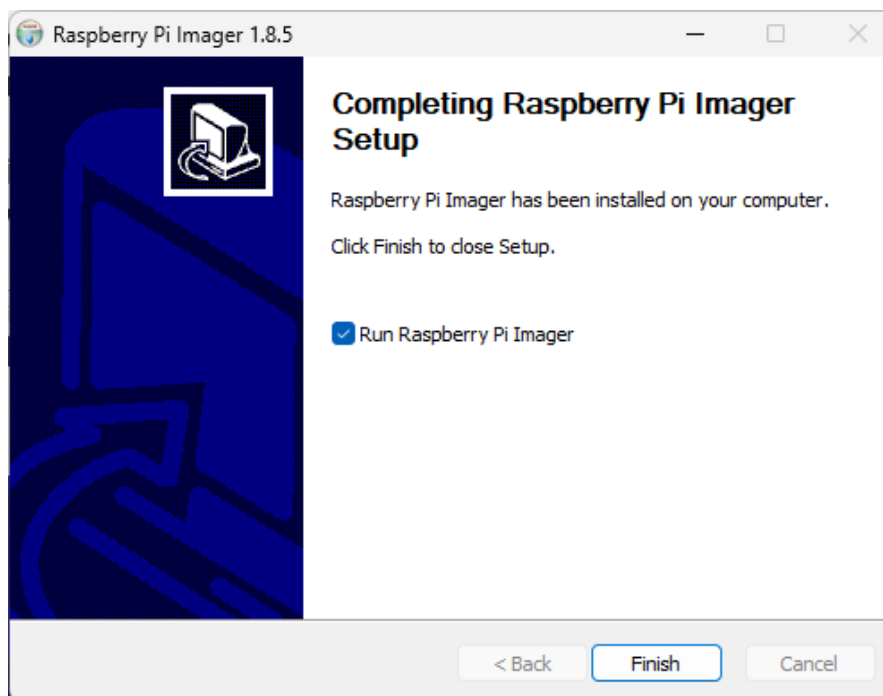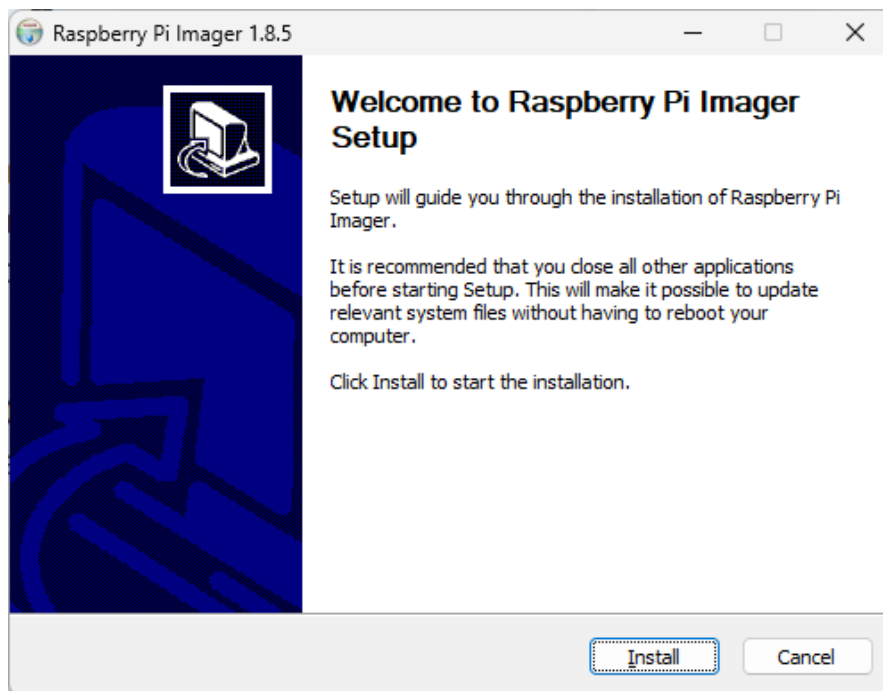# Practical 1

Aim: - Making a Raspberry Pi headless, and reaching it from the network using WiFi and SSH.

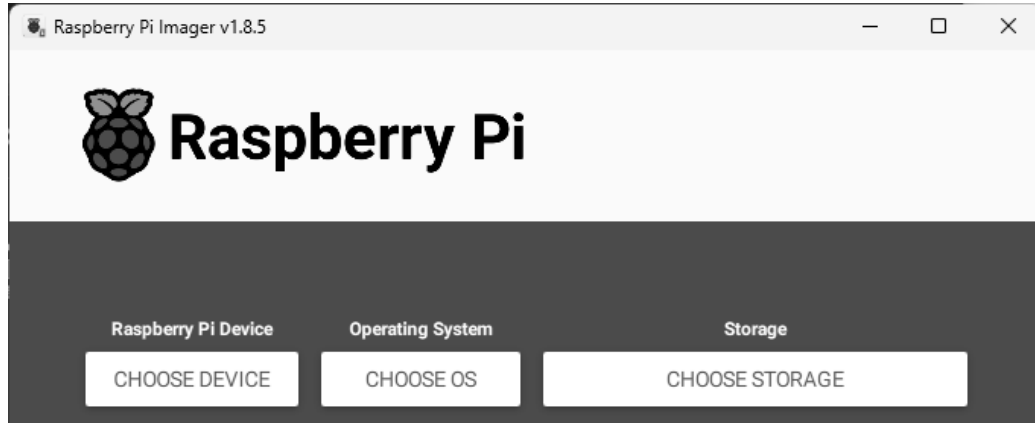**Prerequisite:**
- Raspberry pi imager download here

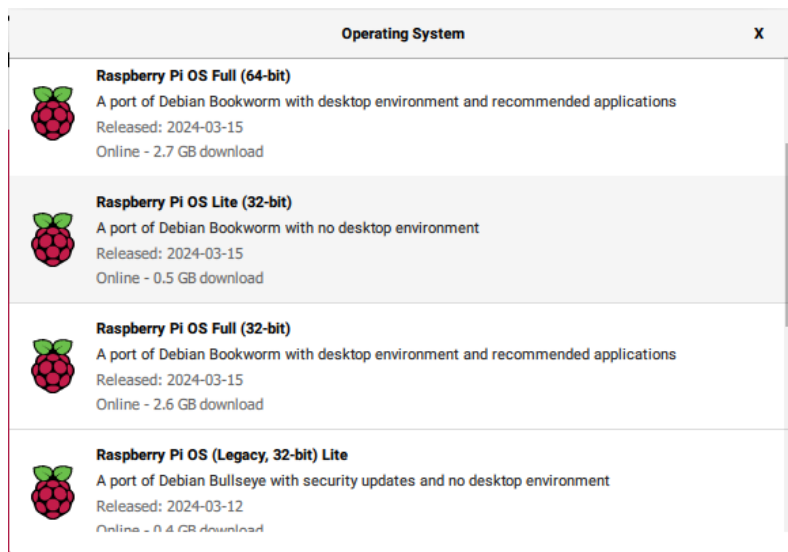**Step 1: Install Raspberry pi imager**

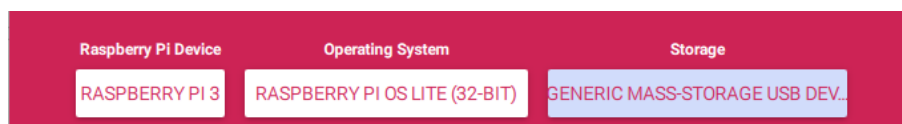## Step 2: Create a bootable SD card

Open Raspberry Pi Imager

Under **Others** choose **Raspberry Pi OS Lite (32 bit)**
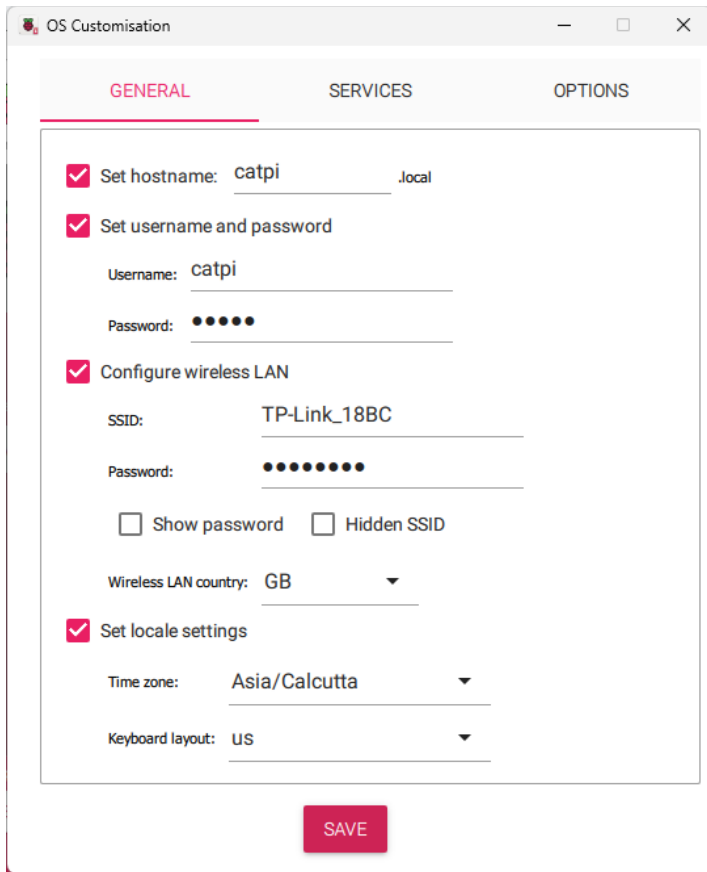

Choose the appropriate **device** and the **storage**

After Clicking **Next** Click on **Edit Settings**
Enter basic Information for wifi and login credentials

Enable SSH Service
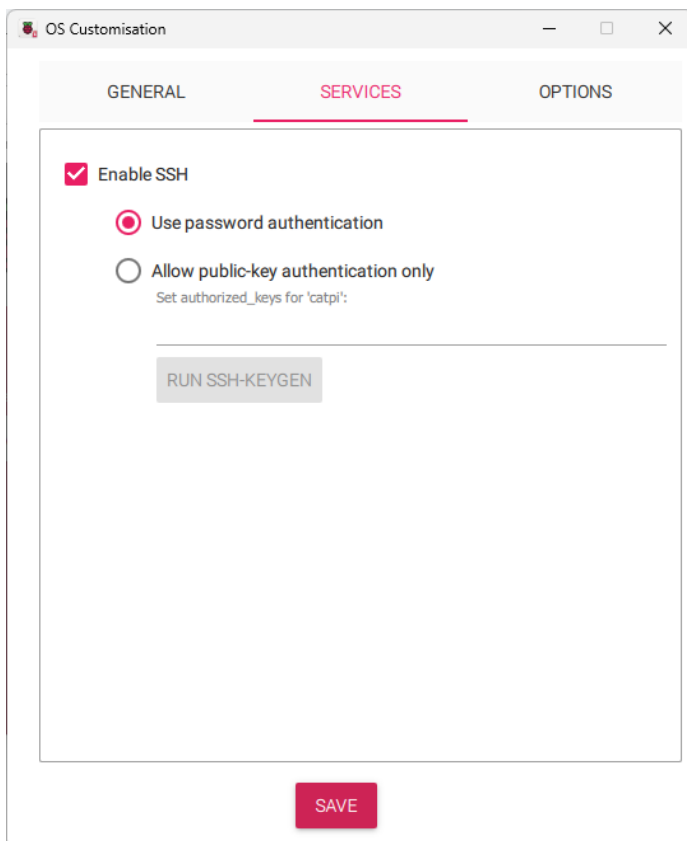
Click Yes and wait for it to finish
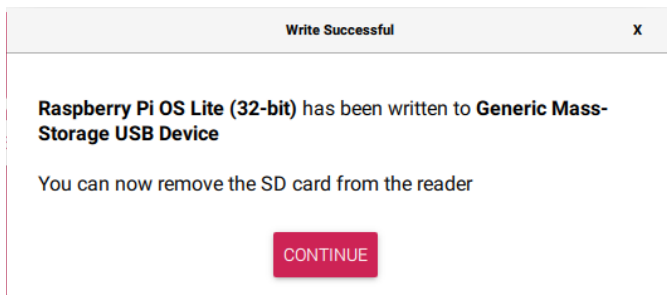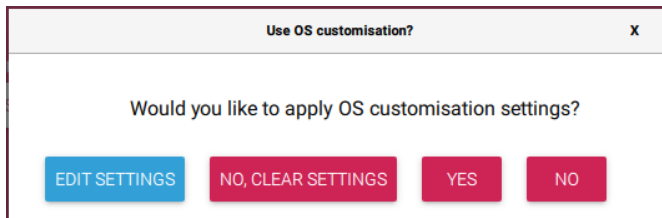
Step 3: Connect Raspberry Pi using ssh
(Note: I am using powershell 7 that has builtin ssh)

```
ssh <username>@<ip_of_rasp>
```

```
PS D:\> ssh catpi@10.128.0.130
catpi@10.128.0.130's password:
Linux catpi 6.6.28+rpt-rpi-v7 #1 SMP Raspbian 1:6.6.28-1+rpt1 (2024-04-22) armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue May  7 16:29:57 2024 from 10.128.0.119
catpi@catpi:~ $
```

Step 4: Change hostname of the system

```
catpi@catpi: ~                          ×      +   ∨

catpi@catpi:~ $ sudo raspi-config
catpi@catpi:~ $ |
```
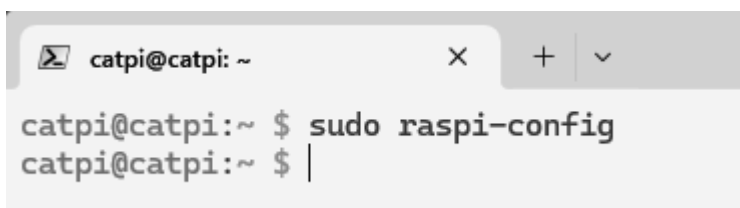
```
┌─────┤ Raspberry Pi Software Configuration Tool (raspi-config) ├─────┐
│ 1 System Options        Configure system settings                    │
│ 2 Display Options       Configure display settings                   │
│ 3 Interface Options     Configure connections to peripherals         │
│ 4 Performance Options   Configure performance settings               │
│ 5 Localisation Options  Configure language and regional settings     │
│ 6 Advanced Options      Configure advanced settings                  │
│ 8 Update                Update this tool to the latest version        │
│ 9 About raspi-config    Information about this configuration tool     │
│                                                                       │
│                                                                       │
│              <Select>                        <Finish>                 │
└───────────────────────────────────────────────────────────────────┘
```

```
┌─────┤ Raspberry Pi Software Configuration Tool (raspi-config) ├─────┐
│        S1 Wireless LAN      Enter SSID and passphrase                 │
│        S2 Audio             Select audio out through HDMI or 3.5mm jack│
│        S3 Password          Change password for the 'catpi' user      │
│        S4 Hostname          Set name for this computer on a network    │
│        S5 Boot / Auto Login Select boot into desktop or to command line│
│        S6 Splash Screen     Choose graphical splash screen or text boot│
│        S7 Power LED         Set behaviour of power LED                 │
│        S8 Browser           Choose default web browser                 │
│                                                                       │
│              <Select>                        <Back>                   │
└───────────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────────┐
│ Please enter a hostname                                           │
│                                                                   │
│ catpi_____    │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│         <Ok>                    <Cancel>                          │
└─────────────────────────────────────────────────────────────────┘
```

Step 5: Update the system

```
sudo apt update && sudo apt upgrade
```

```
catpi@catpi:~ $ sudo apt update && sudo apt upgrade -y
Get:1 http://archive.raspberrypi.com/debian bookworm InRelease [23.6 kB]
Get:2 http://raspbian.raspberrypi.com/raspbian bookworm InRelease [15.0 kB]
Get:3 http://archive.raspberrypi.com/debian bookworm/main arm64 Packages [387 kB]
Get:4 http://archive.raspberrypi.com/debian bookworm/main armhf Packages [397 kB]
Get:5 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf Packages [14.5 MB]
Ign:5 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf Packages
Get:5 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf Packages [14.5 MB]
Fetched 13.2 MB in 1min 20s (165 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
40 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: http://raspbian.raspberrypi.com/raspbian/dists/bookworm/InRelease: Key is stored in legacy trusted.gpg keyring (/etc/
apt/trusted.gpg), see the DEPRECATION section in apt-key(8) for details.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  linux-headers-6.6.28+rpt-common-rpi linux-headers-6.6.28+rpt-rpi-v6 linux-headers-6.6.28+rpt-rpi-v7
  linux-headers-6.6.28+rpt-rpi-v7l linux-image-6.6.28+rpt-rpi-v6 linux-image-6.6.28+rpt-rpi-v7
  linux-image-6.6.28+rpt-rpi-v7l linux-kbuild-6.6.28+rpt pastebinit python3-pycryptodome
The following packages have been kept back:
  linux-image-rpi-v8:arm64
The following packages will be upgraded:
```