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# 7-inch Touch Screen

[www.sunfounder.com](http://www.sunfounder.com)

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# CONTENTS

<b>1</b>	<b>Packing List</b>	<b>3</b>
<b>2</b>	<b>Install the OS</b>	<b>5</b>
<b>3</b>	<b>Quick Guide</b>	<b>13</b>
<b>4</b>	<b>Button &amp; Port</b>	<b>17</b>
<b>5</b>	<b>Fixed</b>	<b>19</b>
<b>6</b>	<b>On-Screen Settings</b>	<b>21</b>
6.1	Menu Item Descriptions . . . . .	22
<b>7</b>	<b>Settings for Raspberry Pi</b>	<b>23</b>
7.1	Adjust the Resolution . . . . .	23
7.2	Install Virtual Keyboard on Raspberry Pi . . . . .	25
7.3	Right Click on Raspberry Pi . . . . .	31
7.4	Rotate the Display and Touch Angle . . . . .	32
<b>8</b>	<b>Product Features</b>	<b>37</b>
<b>9</b>	<b>FAQ</b>	<b>39</b>
<b>10</b>	<b>Copyright Notice</b>	<b>41</b>





**Dear Customers:**

Thanks for purchasing SunFounder 7 inch Touchscreen. It uses a premium integrated circuit, which has the advantages of low power consumption, stable performance, no radiation, etc. It is small, easy to use, and secure. The display applies to computer, Raspberry Pi devices, portable display and so on. It is suitable for the Raspberry Pi 3 model B/B+ and 4 Model B, and has the 1024×600 physical resolution. The resolution is adjustable within the range 640×480~1920×1200. Ideal for applications like retro gaming, industrial control, as a secondary monitor, in home automation, for 3D printing control, and as a .

Please read this instruction carefully for reliable and long-term use and the best audio-visual effects.

**Note:**

- 1) Please use the proper power adapter included in the package. Pay attention to using other qualified power supplies if needed.
- 2) Do not expose the device to sunlight, neither deposit or use it at too cold, too hot or humid place.
- 3) Avoid bright light exposure when you use it to ensure good image effect and long-term use of the device.
- 4) Although shock protection and precautions have been designed inside the device, you should avoid violent collisions.
- 5) For the screen equipped with touch display, please avoid excessive force on it when you touch in case of potential damages on the touch screen surface.
- 6) Do not use chemical reagent or solvent to clean the device. Please use a piece of soft cloth to wipe the dust on the device so it can display the beautiful colors as it always does.
- 7) No adjustable components for users in the device. For nonprofessionals, do not try to open or repair this product by yourself in case of unwanted damages.

If you have any questions, please send an email to [service@sunfounder.com](mailto:service@sunfounder.com) and we'll reply as soon as possible.

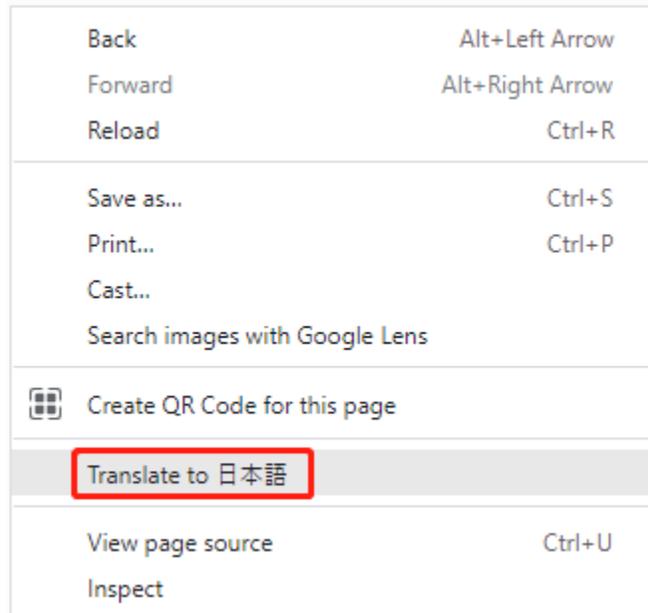
**About the display language**

In addition to English, we are working on other languages for this course. Please contact [service@sunfounder.com](mailto:service@sunfounder.com) if you are interested in helping, and we will give you a free product in return. In the meantime, we recommend using Google Translate to convert English to the language you want to see.

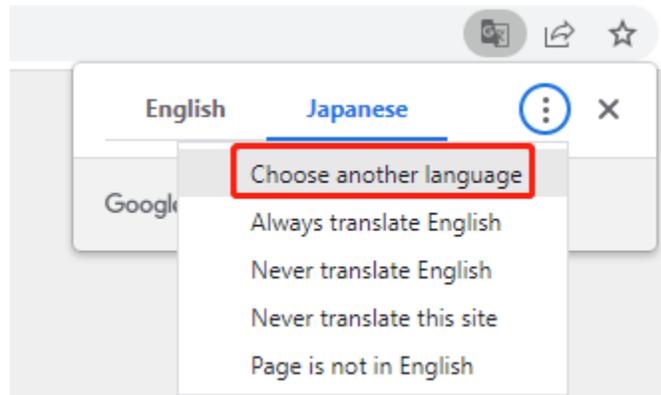
The steps are as follows.

## 7-inch Touch Screen

- In this course page, right-click and select **Translate to xx**. If the current language is not what you want, you can change it later.



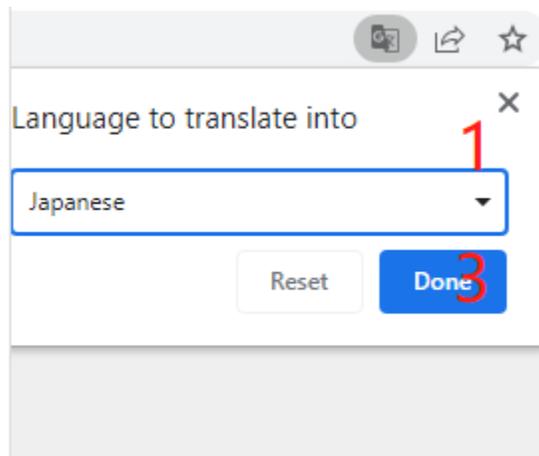
- There will be a language popup in the upper right corner. Click on the menu button to **choose another language**.



- Select the language from the inverted triangle box, and then click **Done**.

Arabic  
Armenian  
Azerbaijani  
Bangla  
Basque  
Belarusian  
Bosnian  
Bulgarian  
Burmese  
Catalan

2

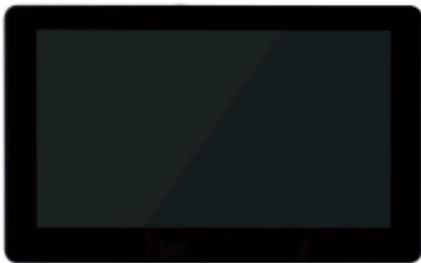




PACKING LIST

7 Inch IPS Touch Screen

1 Pcs



Bracket

1 Pcs



Micro HDMI to HDMI Cable

1 Pcs



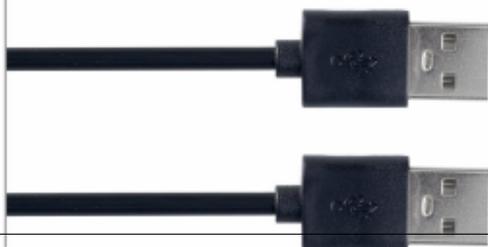
Standard HDMI Cable

1 Pcs



Type A to Type A USB Cable

1 Pcs



12V Power Adapter

1 Pcs



Different adapter specifications received  
in different countries

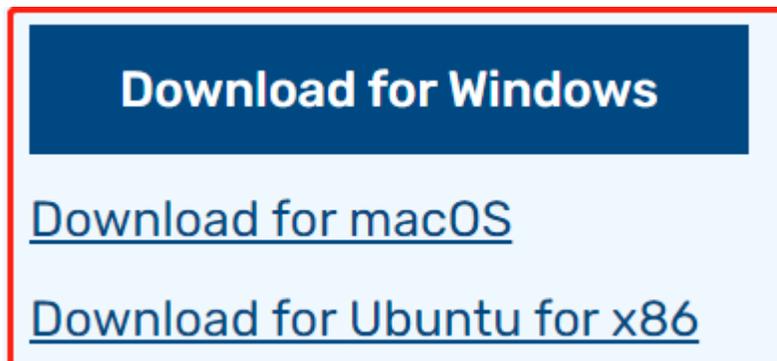
## INSTALL THE OS

### Required Components

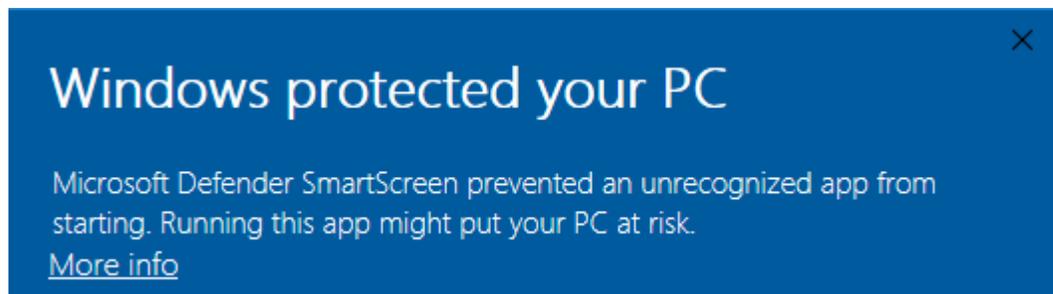
- Raspberry Pi 5B
- A Personal Computer
- A Micro SD card

### Installation Steps

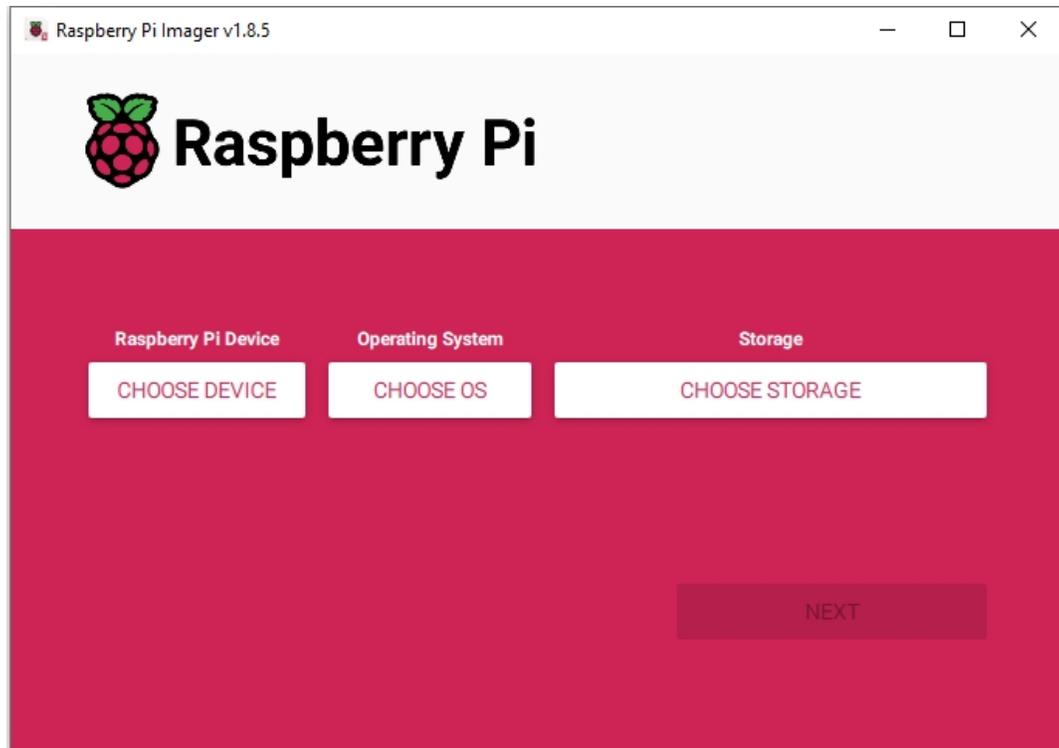
1. Visit the Raspberry Pi software download page at [Raspberry Pi Imager](#). Choose the Imager version compatible with your operating system. Download and open the file to initiate installation.



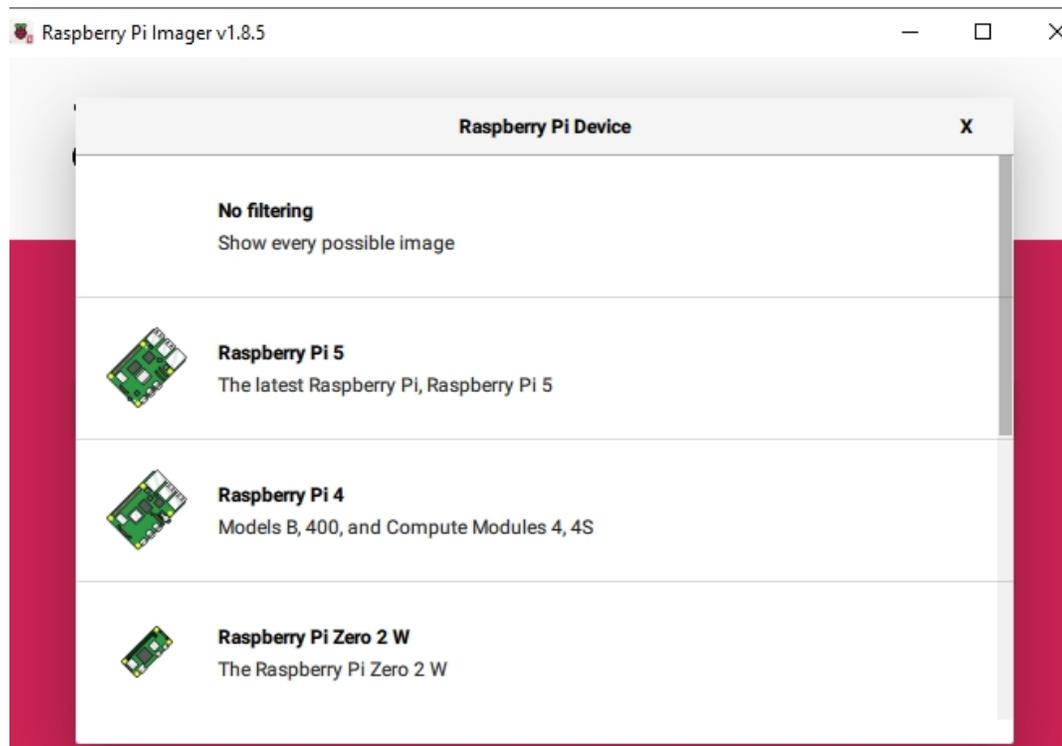
2. A security prompt may appear during installation, depending on your operating system. For example, Windows might display a warning message. In such cases, select **More info** and then **Run anyway**. Follow the on-screen guidance to complete the installation of the Raspberry Pi Imager.



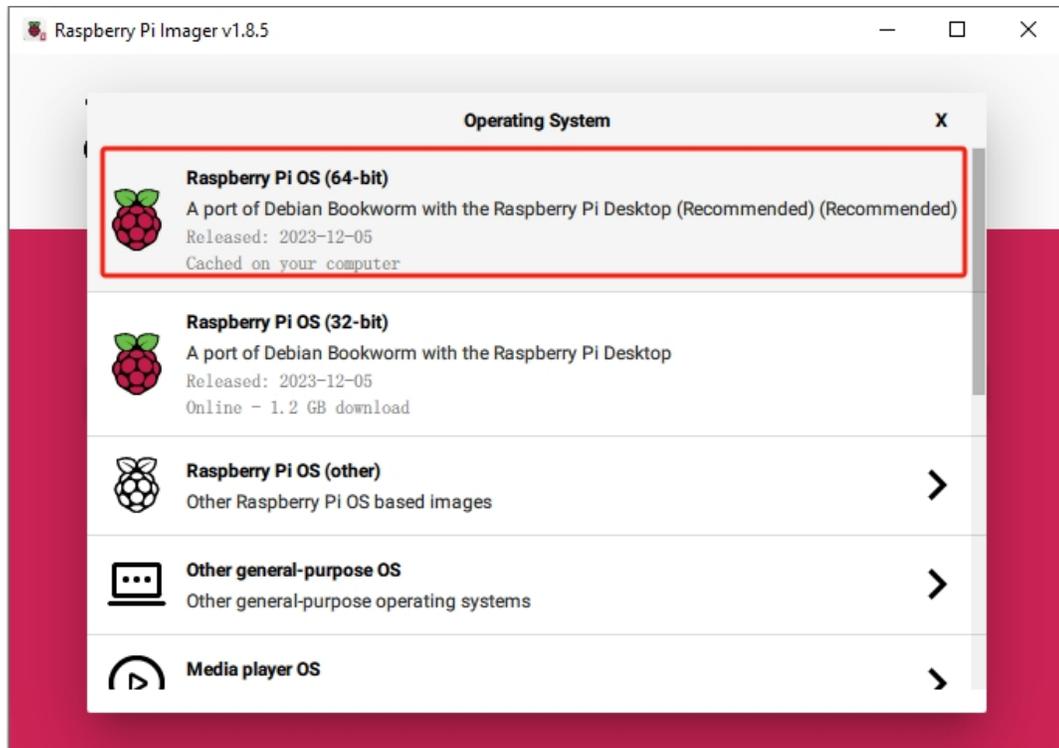
3. Insert your SD card into your computer or laptop's SD card slot.
4. Launch the Raspberry Pi Imager application by clicking its icon or typing `rpi-imager` in your terminal.



5. Click **CHOOSE DEVICE** and select your specific Raspberry Pi model from the list.

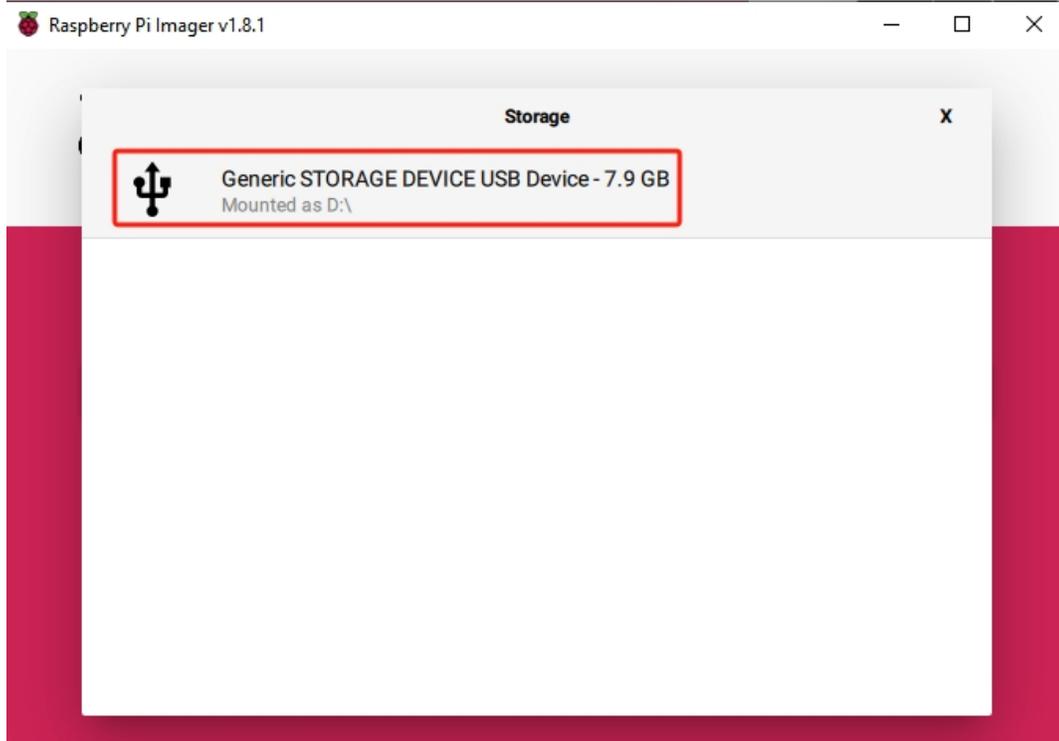


6. Then click on Choose OS and select an operating system for installation.

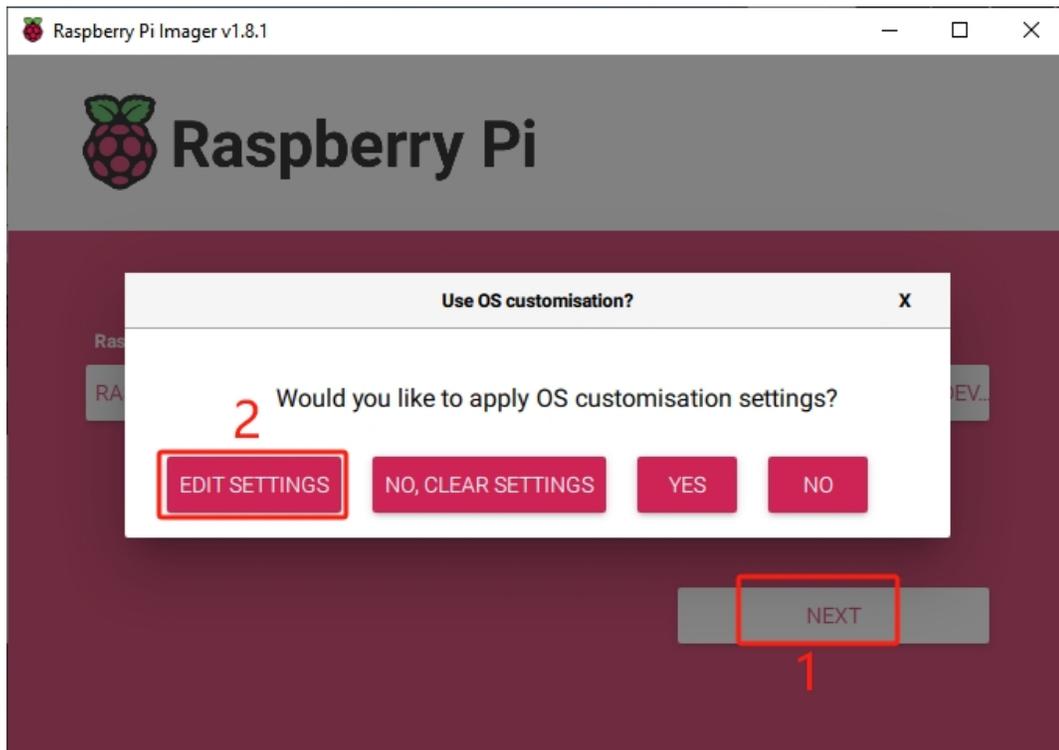


7. Click **Choose Storage** and select the appropriate storage device for the installation.

**Note:** Ensure you select the correct storage device. To avoid confusion, disconnect any additional storage devices if multiple ones are connected.



- Click **NEXT** and then **EDIT SETTINGS** to tailor your OS settings. If you have a monitor for your Raspberry Pi, you can skip the next steps and click 'Yes' to begin the installation. Adjust other settings later on the monitor.

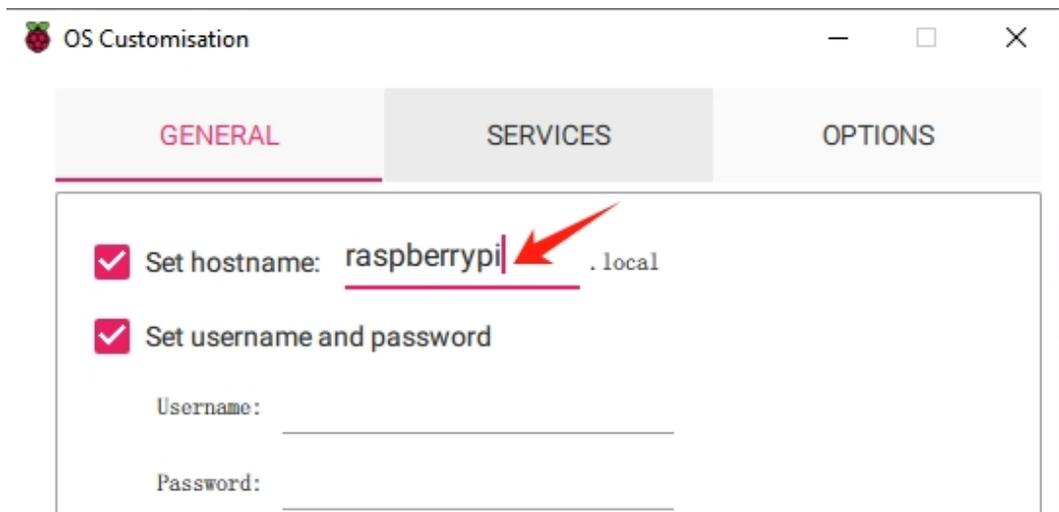


- Define a **hostname** for your Raspberry Pi.

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**Note:** The hostname is your Raspberry Pi's network identifier. You can access your Pi using `<hostname>.local` or `<hostname>.lan`.

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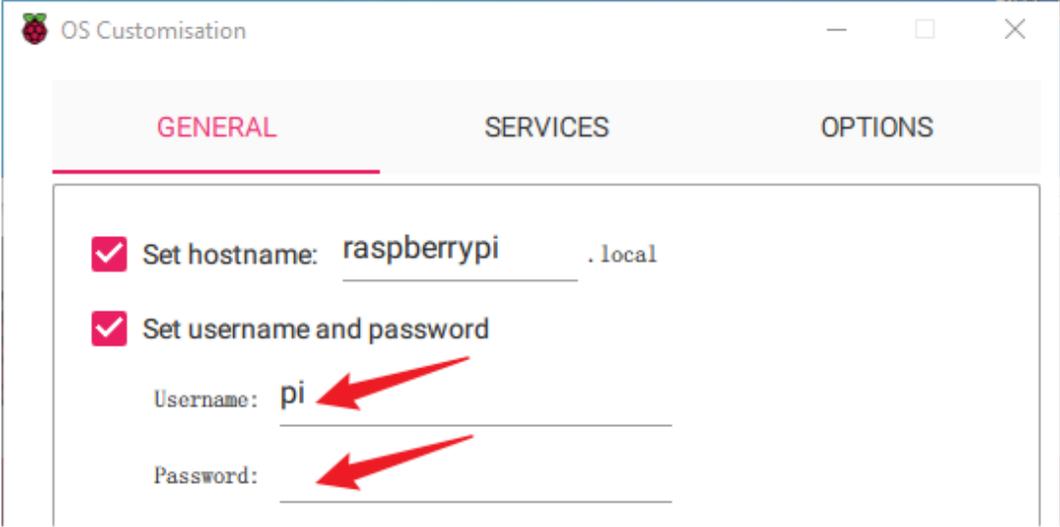
- Create a **Username** and **Password** for the Raspberry Pi's administrator account.

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**Note:** Establishing a unique username and password is vital for securing your Raspberry Pi, which

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lacks a default password.



OS Customisation

GENERAL SERVICES OPTIONS

Set hostname: raspberrypi .local

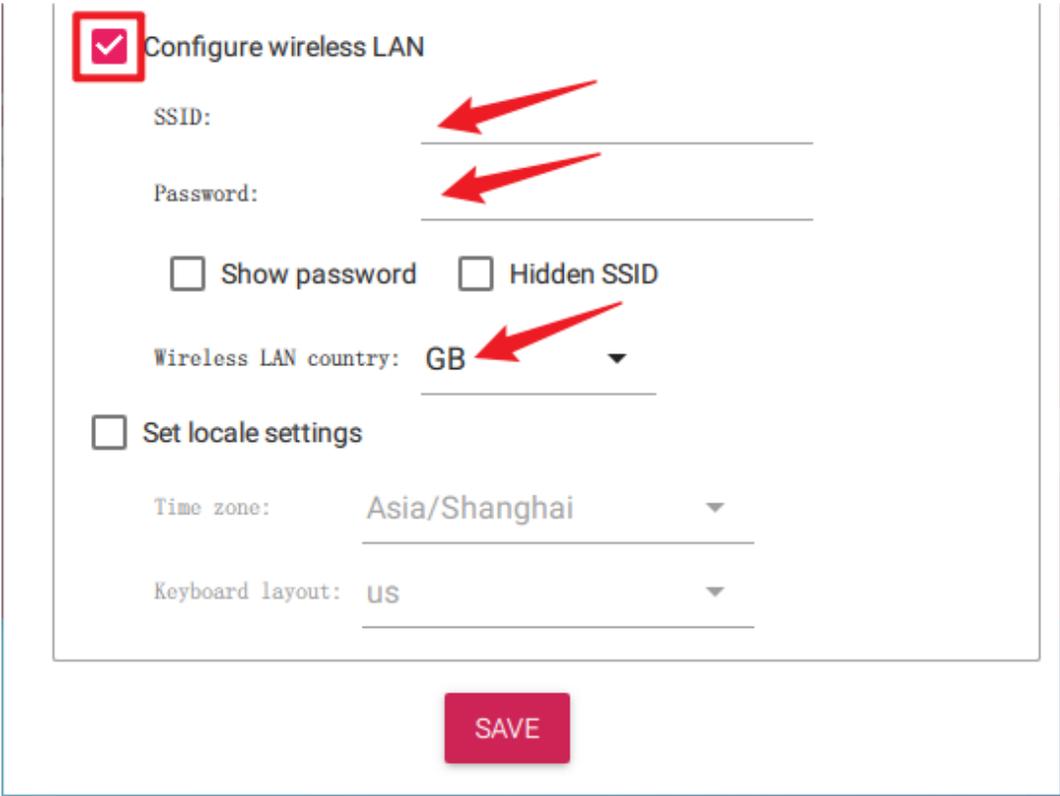
Set username and password

Username: pi

Password: \_\_\_\_\_

11. Configure the wireless LAN by providing your network's **SSID** and **Password**.

**Note:** Set the Wireless LAN country to the two-letter ISO/IEC alpha2 code corresponding to your location.



Configure wireless LAN

SSID: \_\_\_\_\_

Password: \_\_\_\_\_

Show password  Hidden SSID

Wireless LAN country: GB

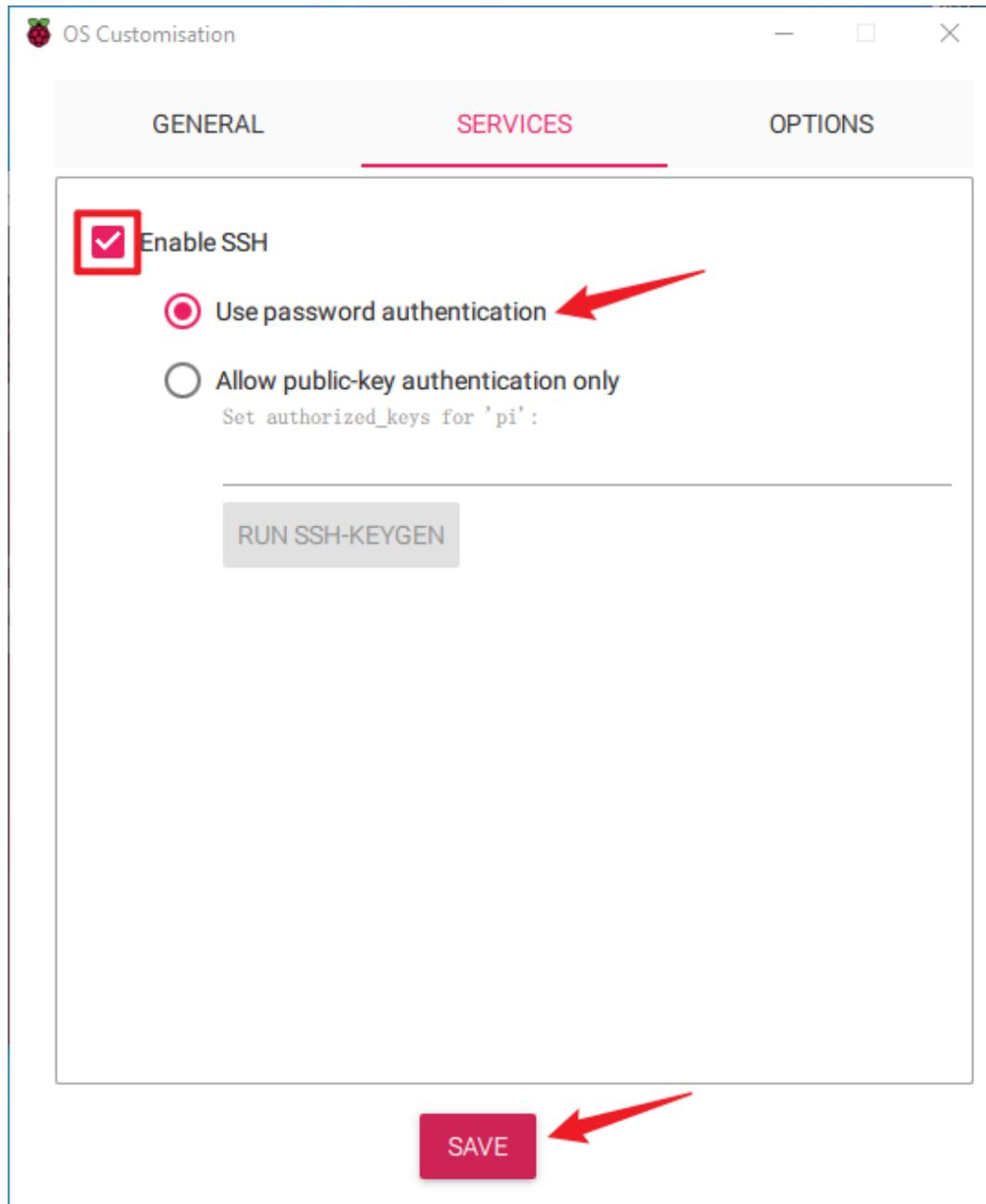
Set locale settings

Time zone: Asia/Shanghai

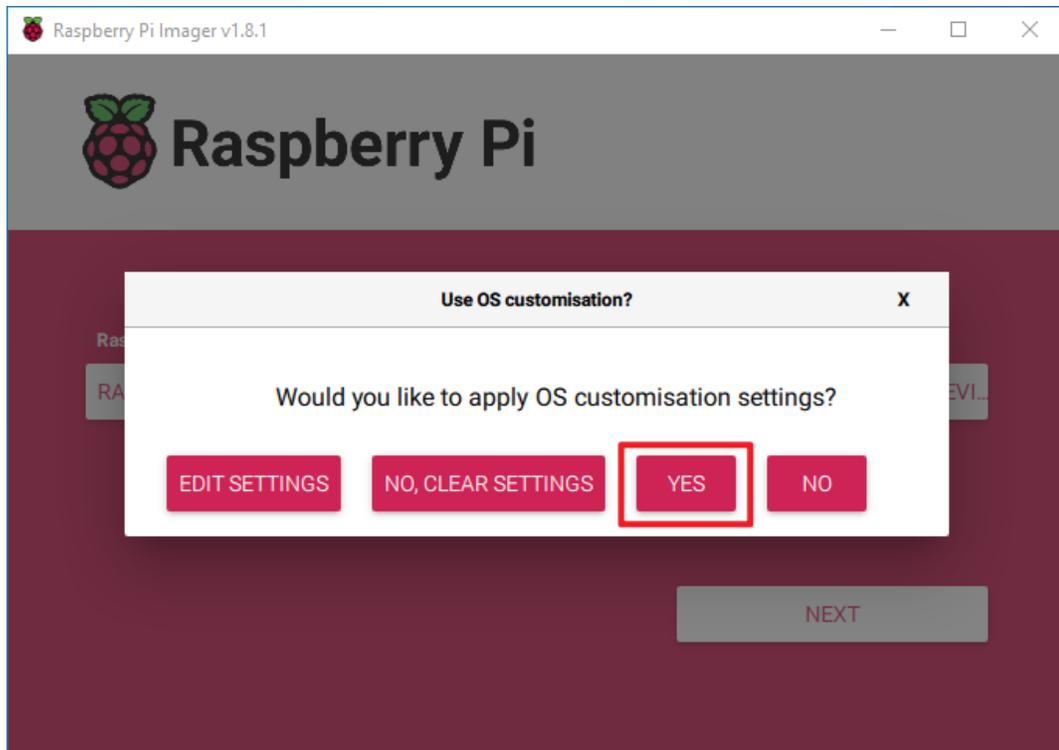
Keyboard layout: US

SAVE

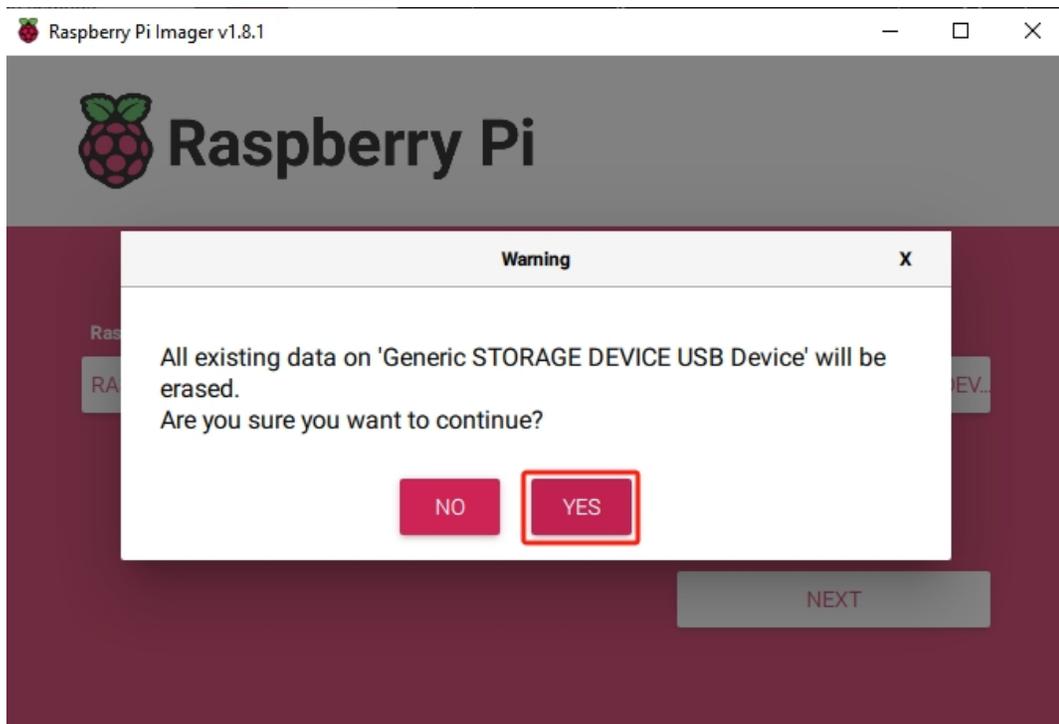
12. Click **SERVICES** and activate **SSH** for secure, password-based remote access. Remember to save your settings.



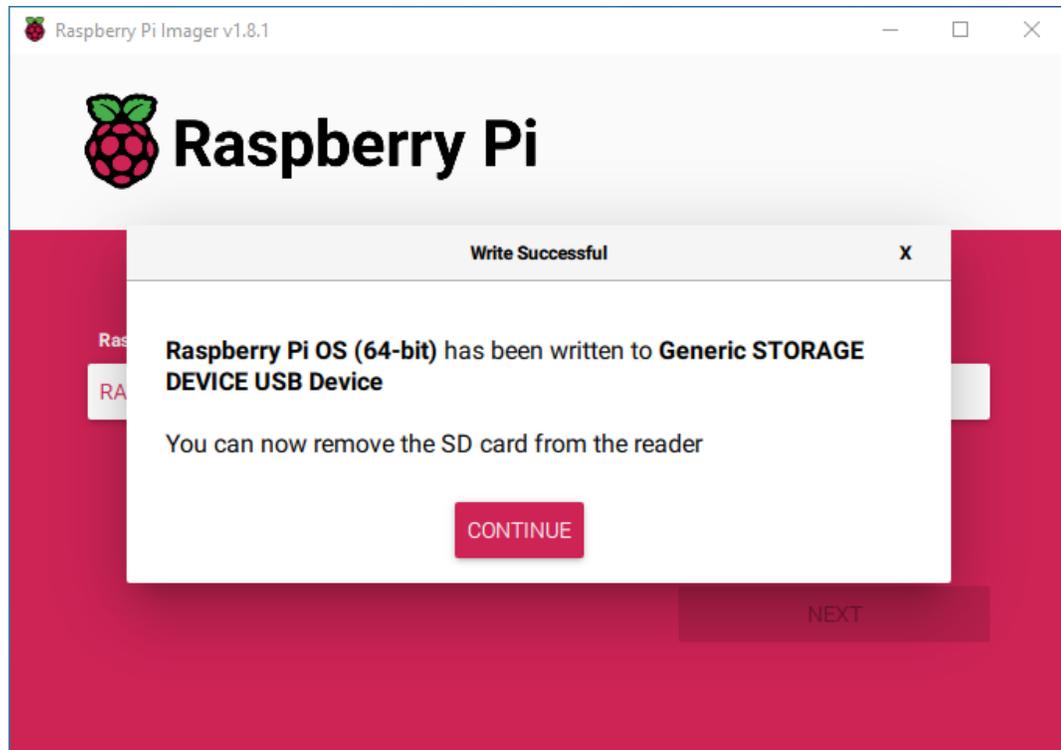
13. Confirm your selected settings by clicking **Yes**.



14. If the SD card contains existing data, ensure you back it up to prevent data loss. Proceed by clicking **Yes** if no backup is needed.

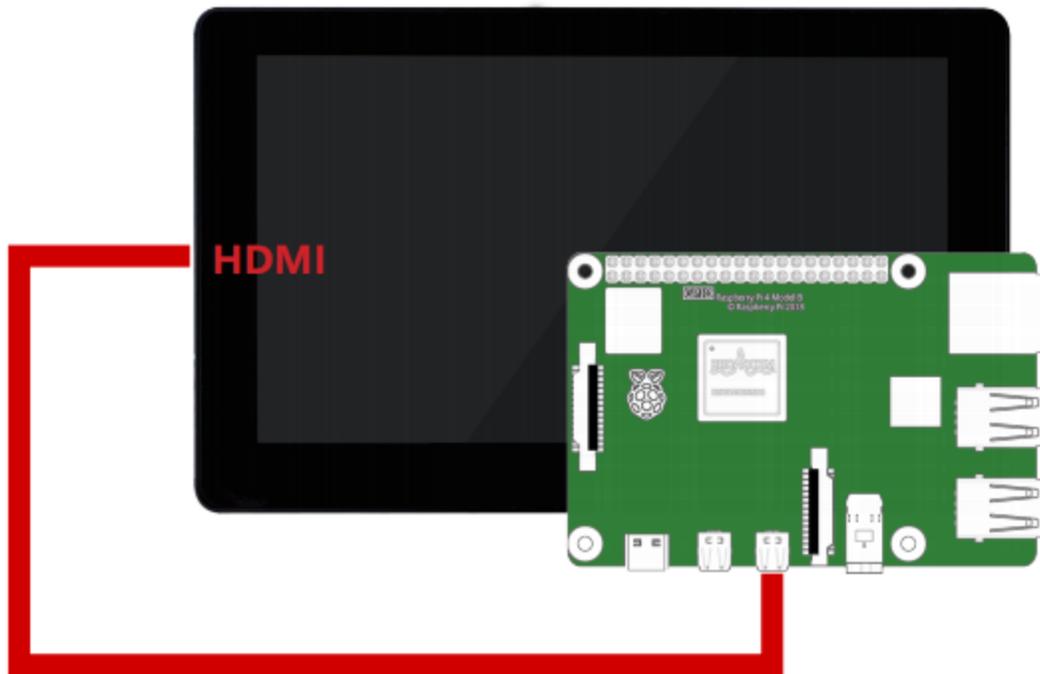


15. The OS installation process will commence on the SD card. A confirmation dialog will appear upon completion.

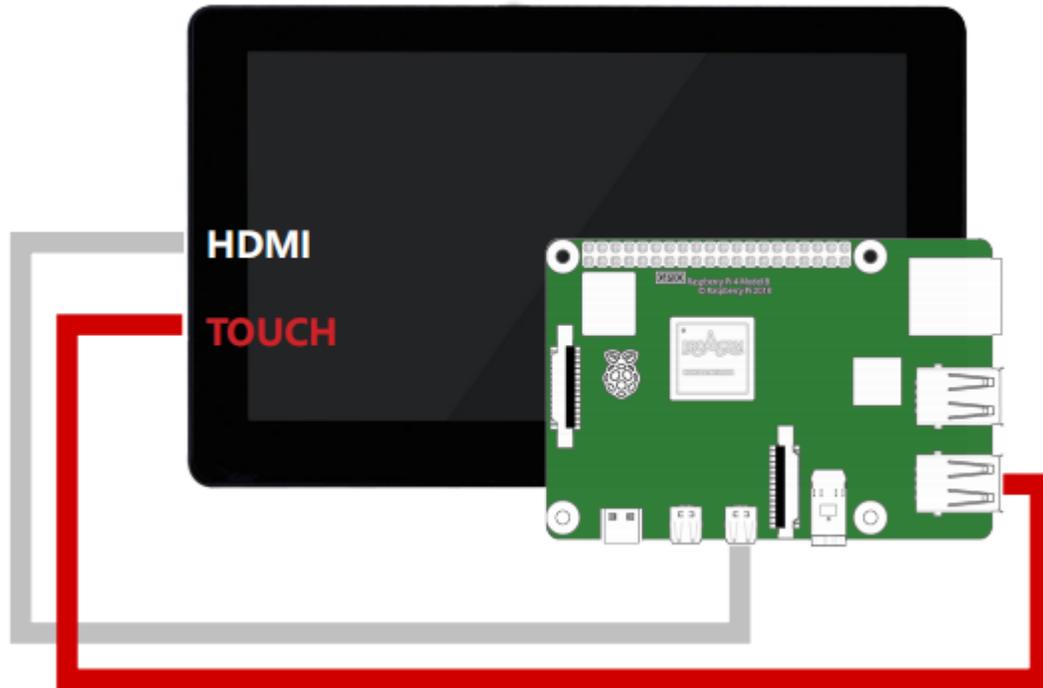


QUICK GUIDE

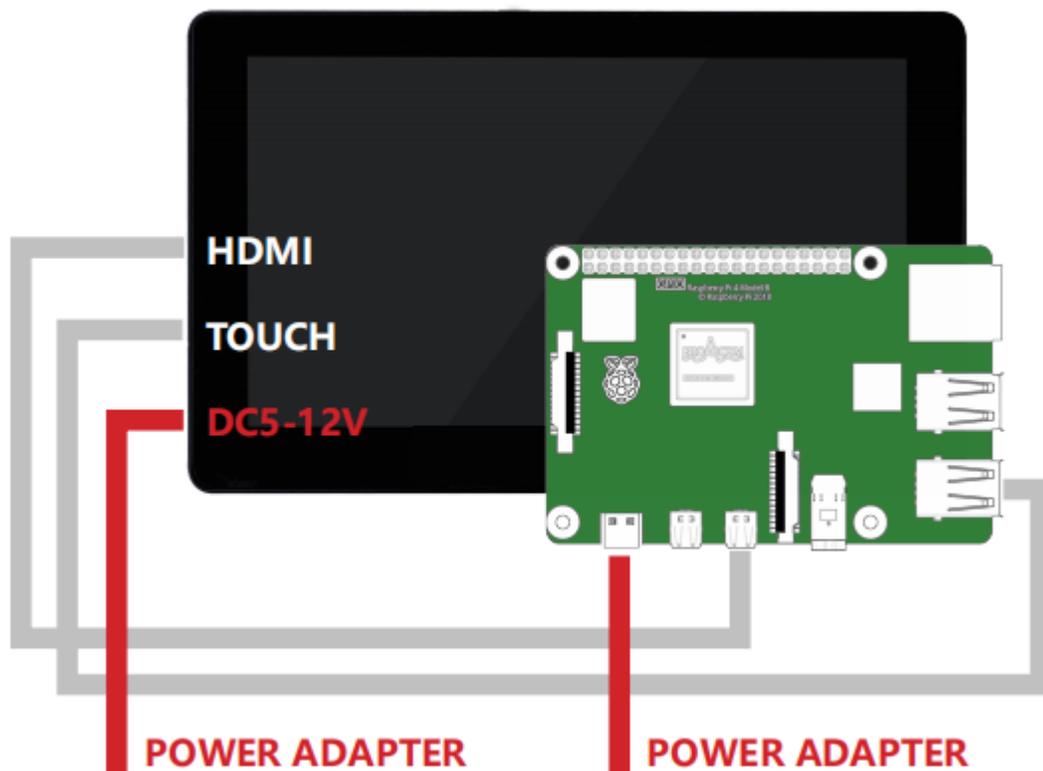
1. Plug the HDMI cable.



2. Wire up the USB cable.



3. Get the two devices connected to their own corresponding power supplies.

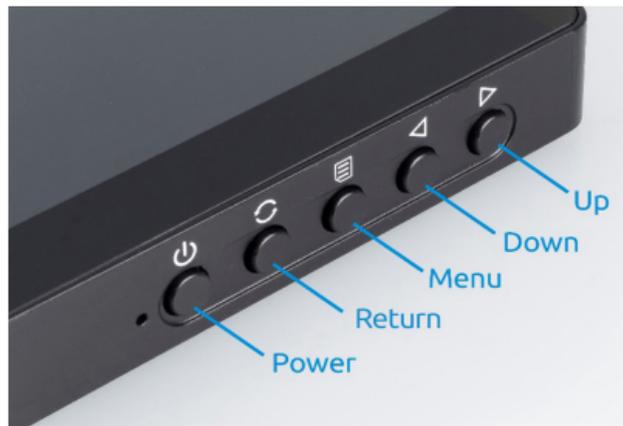


4. Have a good time!





## BUTTON & PORT



Volume up, to increase the volume level. In the menu, it is used to adjust the set value.



Volume down, to decrease the volume level. In the menu, it is used to adjust the set value.



Menu, Pop up the corresponding menu.



Return, close the menu or go back one level.



Power on/off button, to select between working and standby mode.



- DC5-12V** 12V power supply port.
- TOUCH** Touch screen signal output port.
- HDMI** High Definition Multimedia Interface.
-  3.5mm audio output port.

FIXED



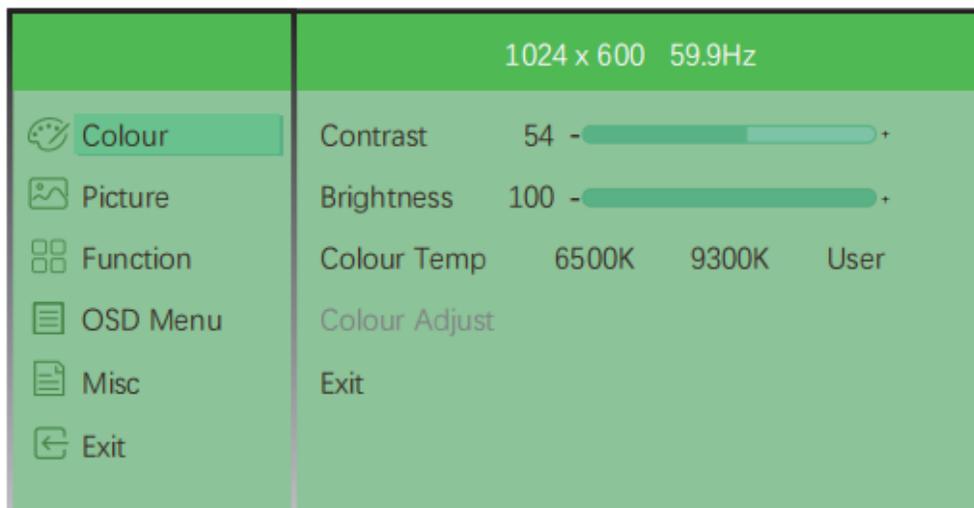
There is a screw thread at one side of the screen, and you can assemble the screen on the camera tripod.



On the back of the touch screen are 4 screw holes (M4) with a 75mm spacing. They are used to help to hang the screen on the wall.

## ON-SCREEN SETTINGS

SunFounder 7 inch Touchscreen can adjust the display via OSD Menu function which gives you the best use experience. Press the  button on the right to enter OSD Menu.



You can switch the page by pressing  or  button, select an option via  button and back to upper level via  button.

## 6.1 Menu Item Descriptions

CLASS	Function item	Description
Colour	Contrast	Adjust the difference in color and light between parts of an image.
	Brightness	Adjust the brightness of display, for easier viewing of dark pictures.
	Colour Temp	Adjust the screen color temperature, the default value is 6500K.
	Colour Adjust	This option becomes available if you selected [User] in Colour Temp. You can modify the three primary colors here to solve the problem of color difference on the screen.
Picture	Sharpness	Adjust the sharpness of graphics, and preset value 2.
OSD Menu	Language	Modify OSD Menu interface language, and the default is English.
	OSD H.POS	Adjust the horizontal position of the OSD Menu.
	OSD V.POS	Adjust the vertical position of the OSD Menu.
	OSD Timer	Adjust the time the OSD Menu display remains on the screen before it disappears.
Misc	Reset	Reset all the items to factory defaults.

## SETTINGS FOR RASPBERRY PI

### 7.1 Adjust the Resolution

For the Raspberry Pi 3 and the lower versions, you need reset the resolution ratio as follows. As for Raspberry Pi 4, when you start up it, the resolution is optimum. If you want to change its resolution, please refer to the next part.

#### For Raspberry Pi 3 or Lower Version

##### Step 1: Open config.txt.

```
sudo nano /boot/config.txt
```

##### Step 2: Modify the /boot/config.txt file.

- 1) Define a custom CVT mode (since Raspberry Pi uses the standard rate when 1024x600 is not included, you need to set the aspect ratio close to 16:9) and add the following lines below `#hdmi_force_hotplug=1`.

```
hdmi_cvt=1024 600 60 3 0 0 0
```

`hdmi_cvt=<width> <height> <framerate> <aspect> <margins> <interlace>`

value	Default	Description
width	(required)	width in pixels
height	(required)	height in pixels
framerate	(required)	framerate in Hz
aspect	3	aspect ratio 1=4:3, 2=14:9, 3=16:9, 4=5:4, 5=16:10, 6=15:9
margins	0	0=margins disabled, 1=margins enabled
interlace	0	0=progressive, 1=interlaced
rb	0	0=normal, 1=reduced blanking

- 2) Find the following lines, delete the “#” mark and modify the value like this:

```
hdmi_group=2  
hdmi_mode=87  
...  
hdmi_drive=2
```

**hdmi\_group=2** means DMT (Display Monitor Timings, the standard typically used on monitors) **hdmi\_mode=87** indicates we create a new hdmi mode named 87. **hdmi\_drive=2** selects the Normal HDMI mode.

After the modification is done, save and exit. For more details about configuring config.txt, refer to Raspberry Pi official website: <https://www.raspberrypi.org/documentation/configuration/config-txt.md>.

##### Step 3: Reboot Raspberry Pi.

## 7-inch Touch Screen

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Reboot the Raspberry pi with the command `sudo reboot`.

```
sudo reboot
```

### For Raspberry Pi 4

- 1) Click the **Raspberry Pi icon** -> **Preferences** -> **Screen Configuration**.

CLASS	Function item	Description
Colour	Contrast	Adjust the difference in color and light between parts of an image.
	Brightness	Adjust the brightness of display, for easier viewing of dark pictures.
	Colour Temp	Adjust the screen color temperature, the default value is 6500K.
	Colour Adjust	This option becomes available if you selected [User] in Colour Temp. You can modify the three primary colors here to solve the problem of color difference on the screen.
Picture	Sharpness	Adjust the sharpness of graphics, and preset value 2.
OSD Menu	Language	Modify OSD Menu interface language, and the default is English.
	OSD H.POS	Adjust the horizontal position of the OSD Menu.
	OSD V.POS	Adjust the vertical position of the OSD Menu.
	OSD Timer	Adjust the time the OSD Menu display remains on the screen before it disappears.
Misc	Reset	Reset all the items to factory defaults.

- 2) Then choose **Configure** -> **Screens** -> **HDMI-1** -> **Resolution** -> choose the resolution that you want.



- 3) After that you need to click the **tick icon** to save your configure.

```

GNU nano 3.2 /boot/config.txt Modified
# For more options and information see
# http://rpf.io/config.txt
# Some settings may impact device functionality. See link above for details
# uncomment if you get no picture on HDMI for a default "safe" mode
#hdmi_safe=1
# uncomment this if your display has a black border of unused pixels visible
# and your display can output without overscan
disable_overscan=1
# uncomment the following to adjust overscan. Use positive numbers if console
# goes off screen, and negative if there is too much border
#overscan_left=16
#overscan_right=16
#overscan_top=16
#overscan_bottom=16
# uncomment to force a console size. By default it will be display's size minus
[ Read 71 lines ]
^G Get Help ^G Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^I To Spell ^_ Go To Line

```

In Nano editor, move the cursor via **arrow keys** on the keyboard, not mouse.

## 7.2 Install Virtual Keyboard on Raspberry Pi

**Warning:** If you have installed the latest system - **Debian Bookworm**, then this feature will be unavailable.

When you use a touch panel, you can connect an external keyboard to help you do a text input operation, but it is best to install a virtual keyboard.

Install the required software with the following command.

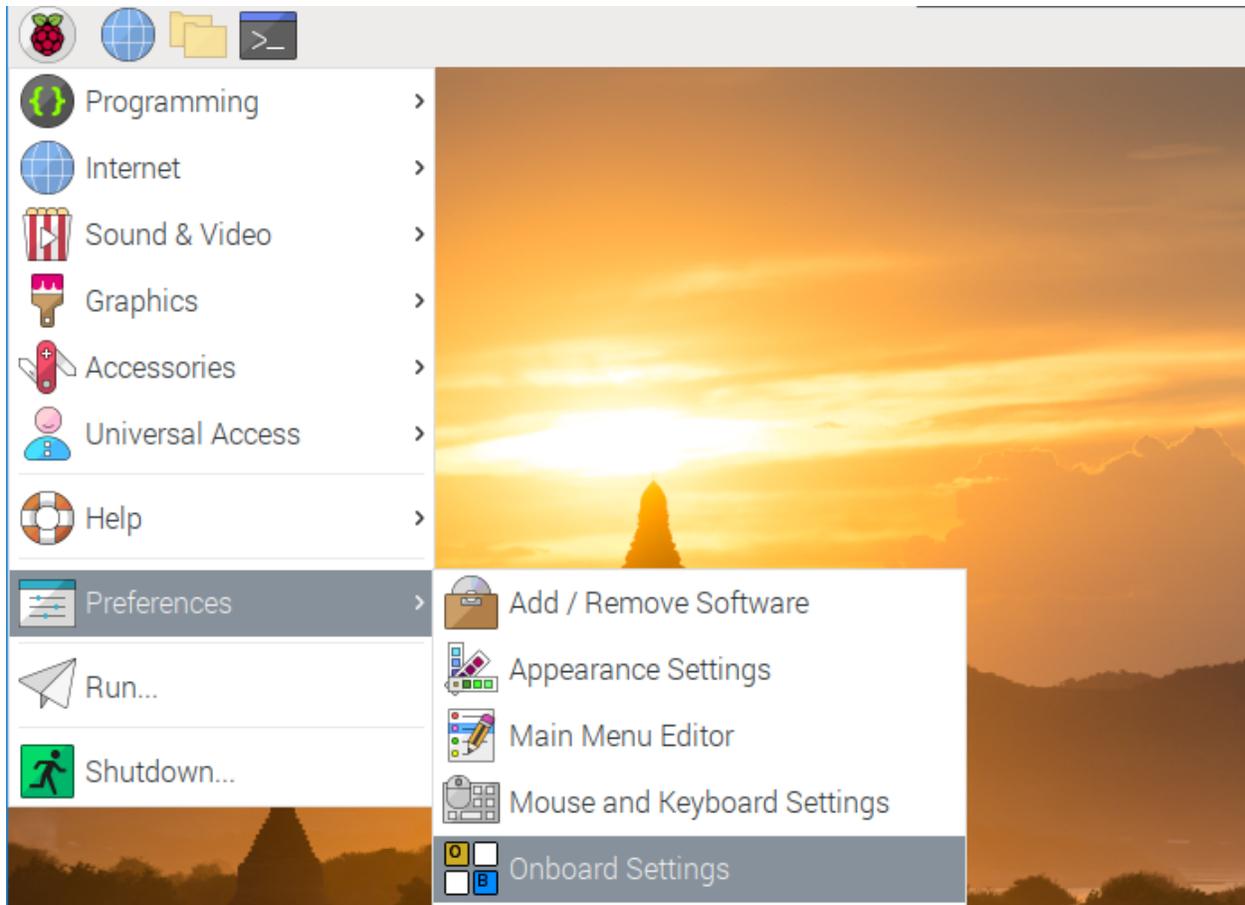
```

sudo apt install onboard
sudo apt install at-spi2-core

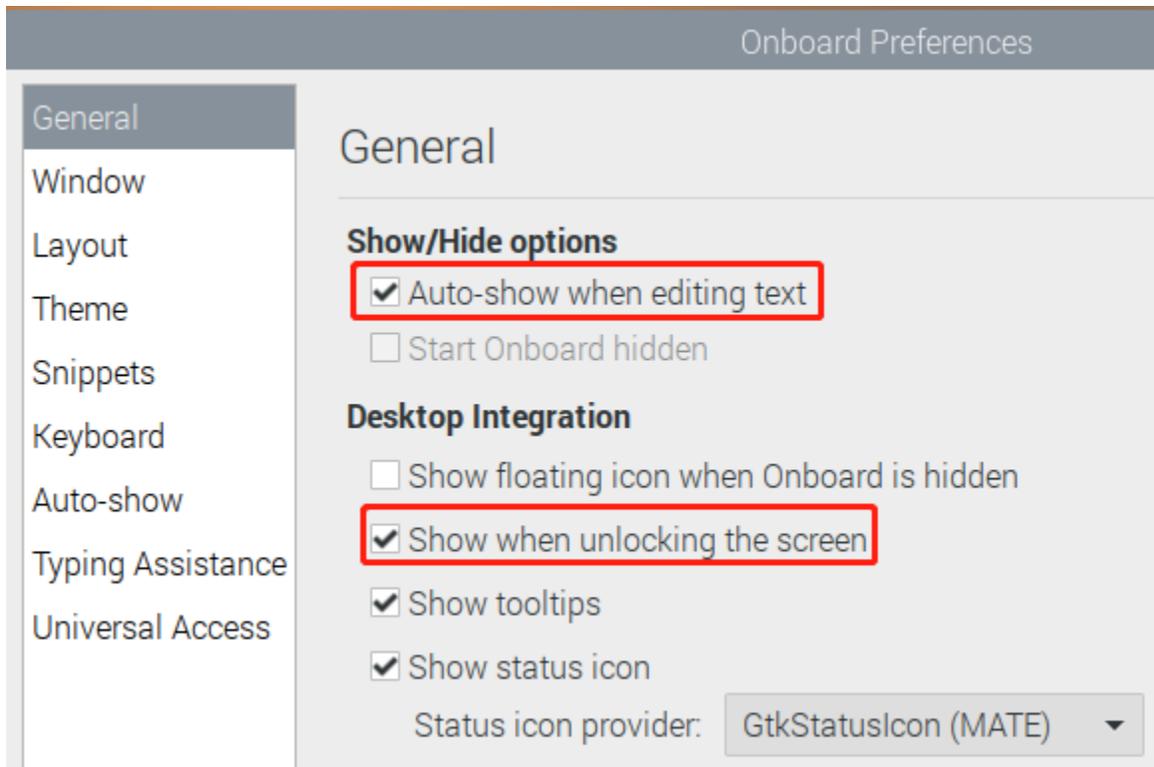
```

In order to make the virtual keyboard have a better effect, you need to do further settings.

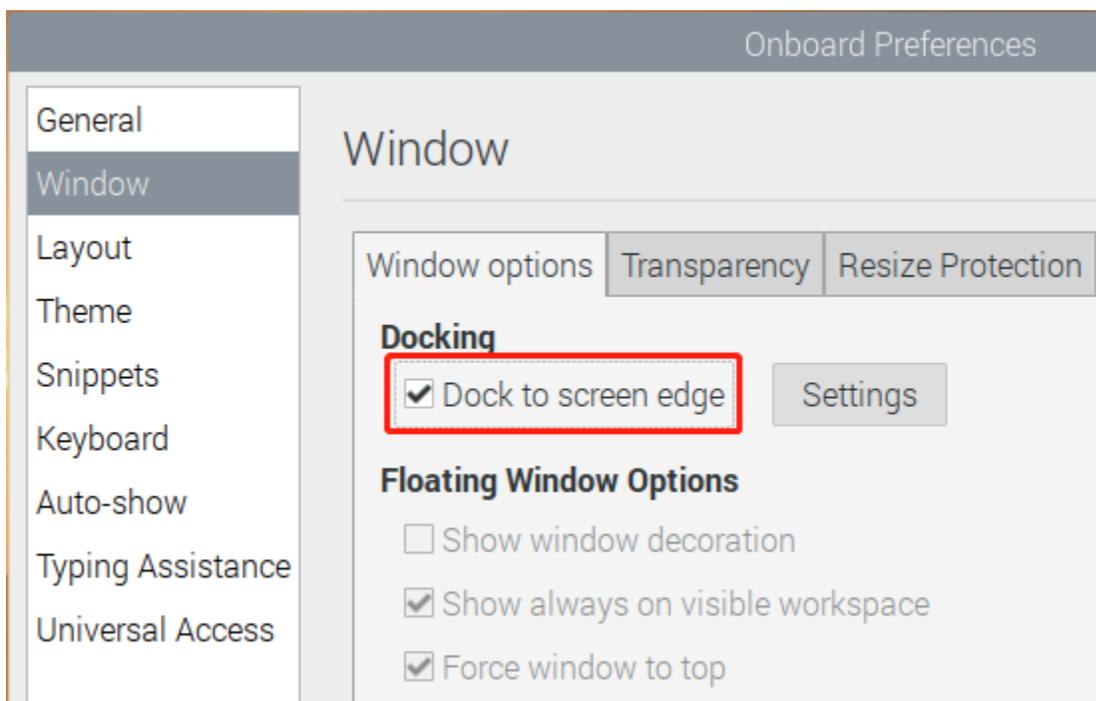
Click the Raspberry Pi icon in the upper left corner and select **Preferences** -> **Onboard Settings**.



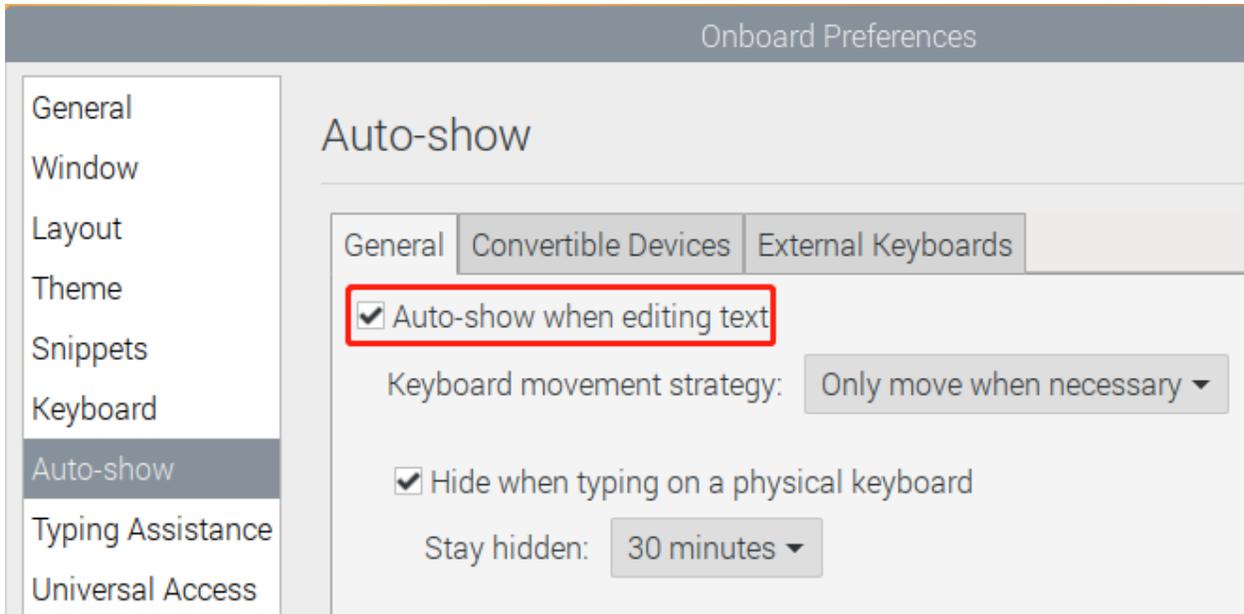
In the **General** option, check the following 2 items. When you check **Automatically display when editing text**, you will be prompted to reboot, you can reboot after all settings are complete.



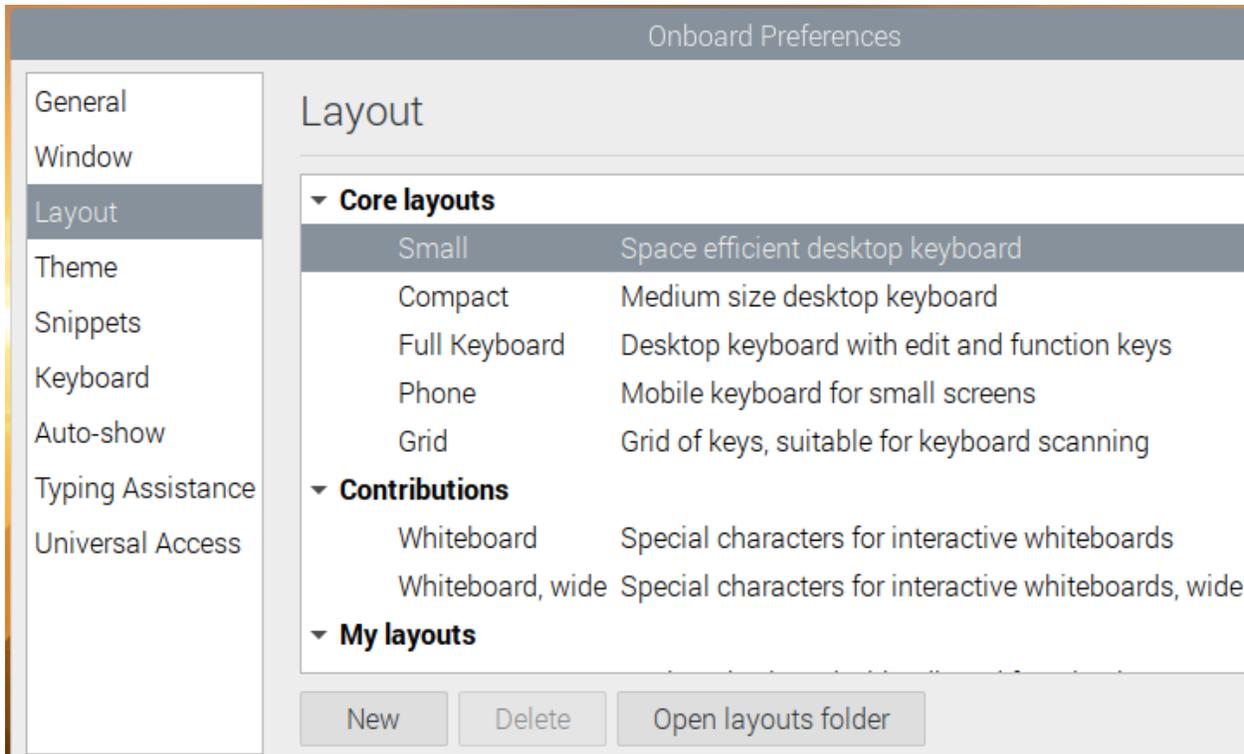
In the **Window** option, check **Dock to screen edge**.



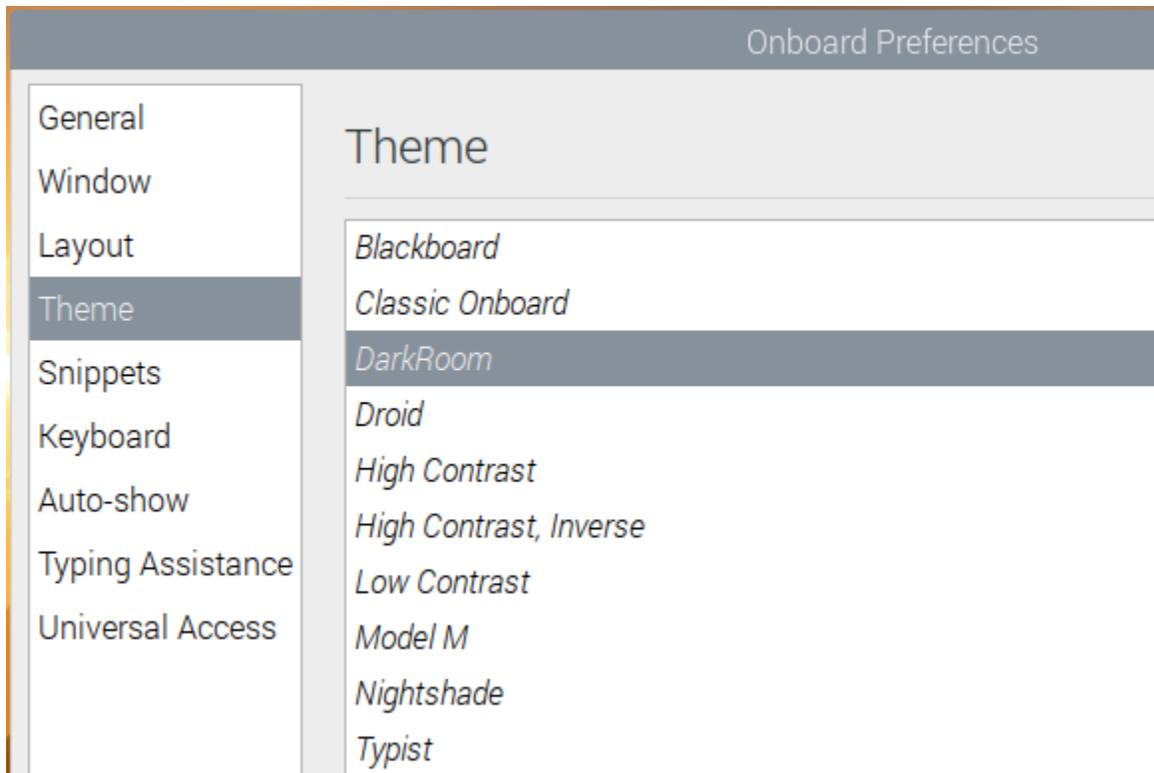
And in **Auto-show** option, check **Auto-show when editing text** again.



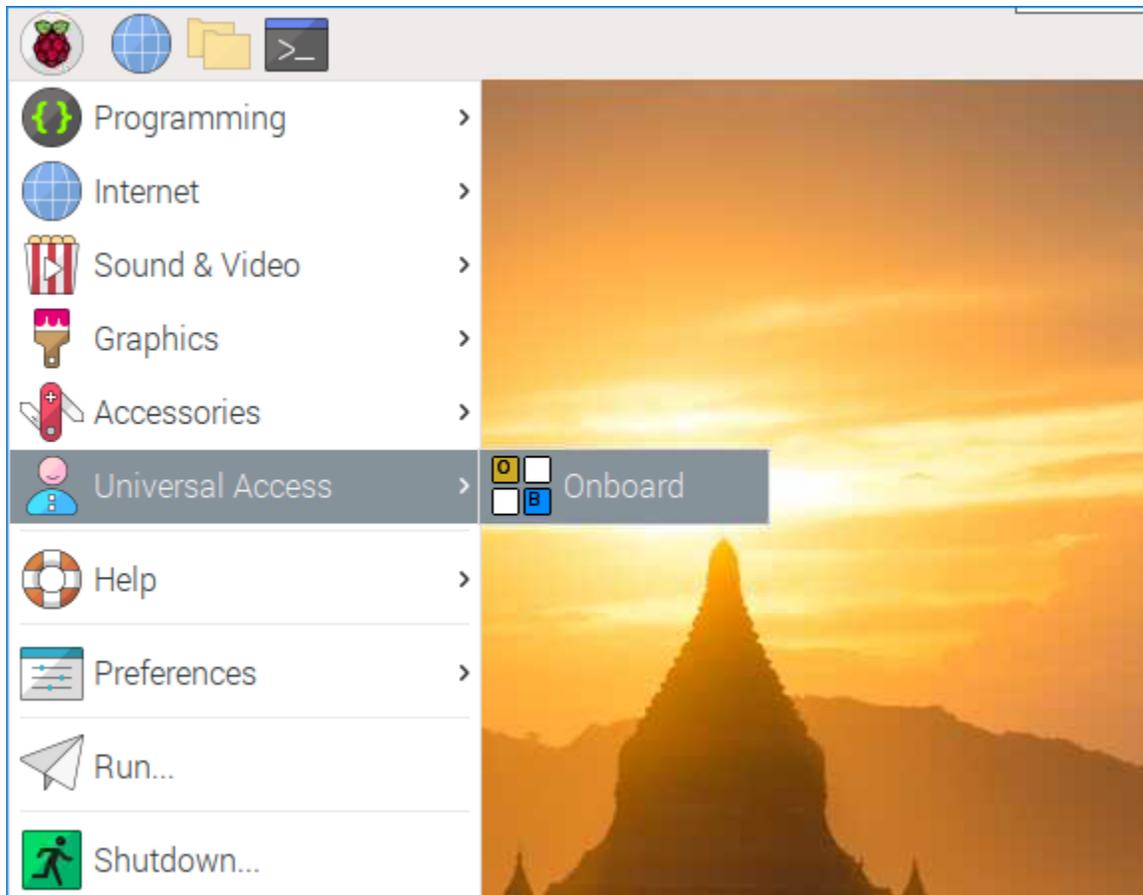
The next 2 items are optional, the ones checked in the picture are recommended by us, you can also check other ones. In **Layout** option, **Small** is recommended.



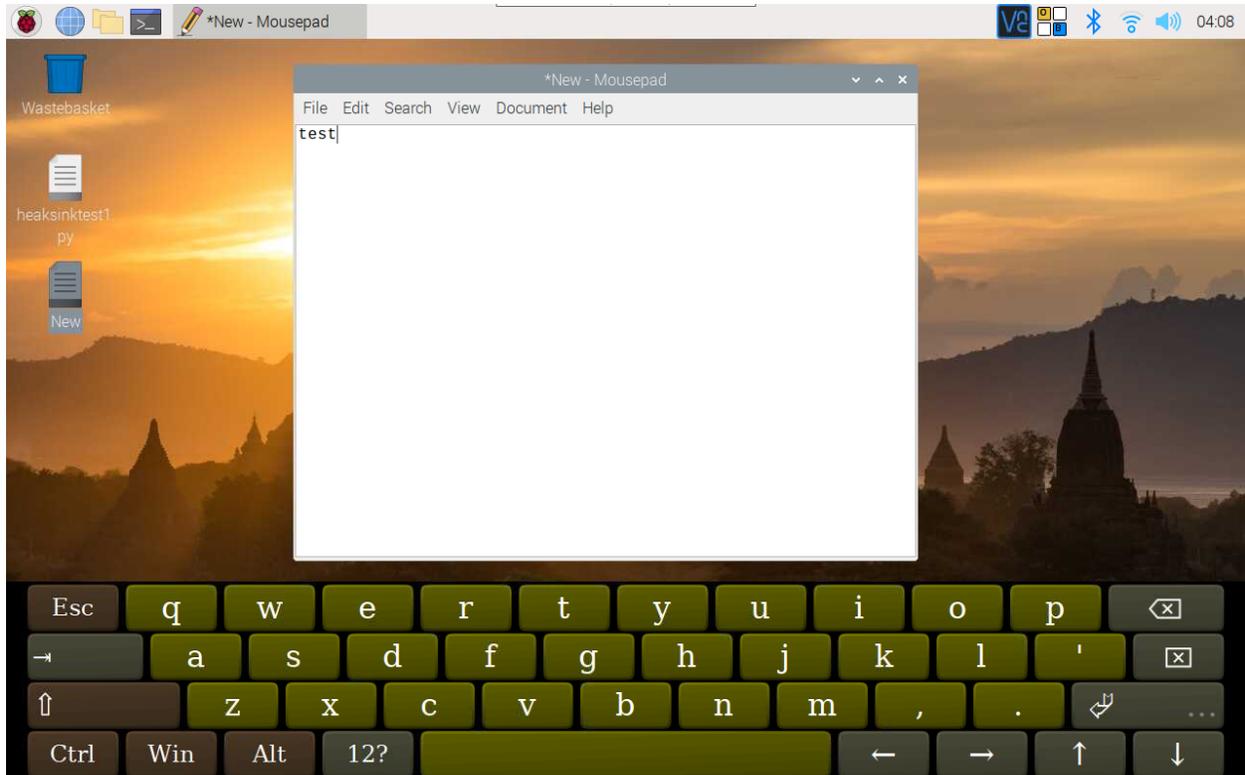
In **Theme** option, **DarkRoom** is recommended.



After the setting is complete, restart Raspberry pi. Every time you restart Raspberry pi, you need to click **General Access** -> **Onboard** to enable the virtual keyboard.



Now you can use this keyboard to edit your files or codes.



## 7.3 Right Click on Raspberry Pi

**Warning:** If you have installed the latest system - **Debian Bookworm**, then this feature will be unavailable.

The touchscreen makes it easy to perform simple navigation tasks with your finger or stylus, but you may want to be able to use the context menu (right-click menu).

Then you will need to download a Touchégg. Enter the following command to install it.

**For 32-bit OS:**

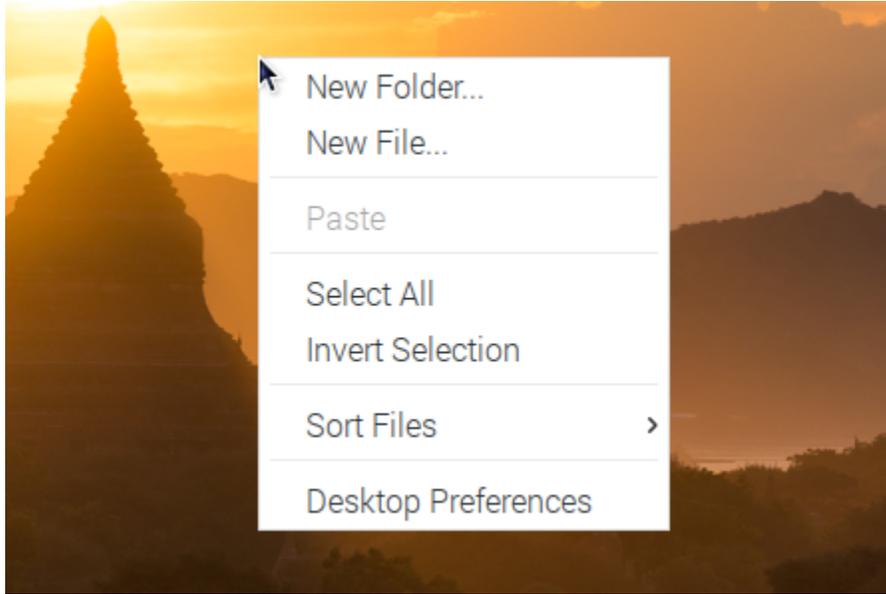
```
wget https://github.com/JoseExposito/toucheegg/releases/download/2.0.14/toucheegg_2.0.14_
↪armhf.deb
sudo apt install ./toucheegg_2.0.14_armhf.deb
```

**For 64-bit OS:**

```
wget https://github.com/JoseExposito/toucheegg/releases/download/2.0.14/toucheegg_2.0.14_
↪arm64.deb
sudo apt install ./toucheegg_2.0.14_arm64.deb
```

After restarting, you can double-tap the screen to bring up the context menu.

```
sudo reboot
```



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**Note:** The product is not compatible with some of Touchégg's gestures, such as three-finger zoom in/out.

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## 7.4 Rotate the Display and Touch Angle

**Warning:** If you have installed the latest system - **Debian Bookworm**, then this feature will be unavailable.

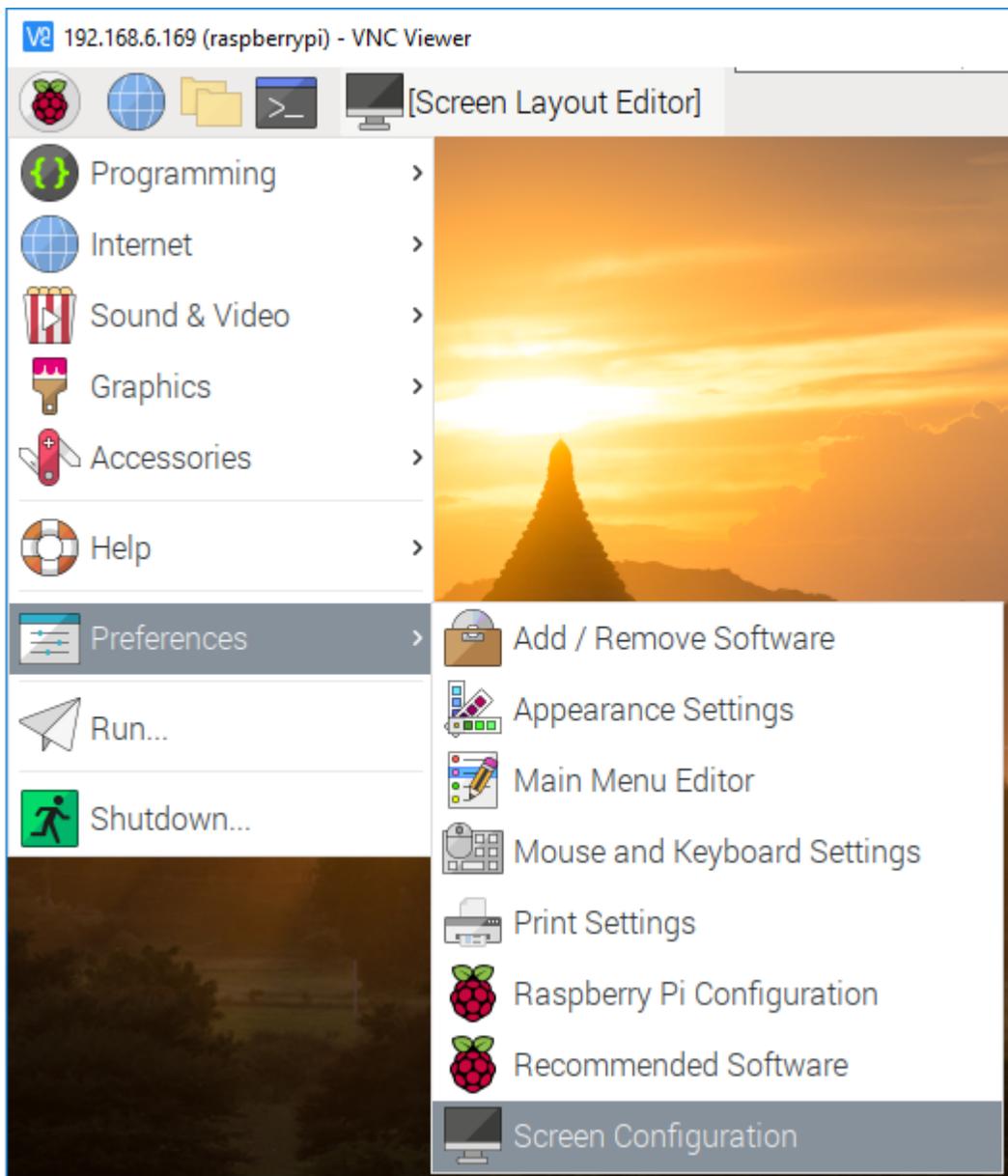
After the Raspberry Pi is turned on, if you find that the display or touch angle is not correct, or you need to rotate to other angles during use, you can follow the tutorial below to achieve them.

### 7.4.1 Rotate the Display Angle

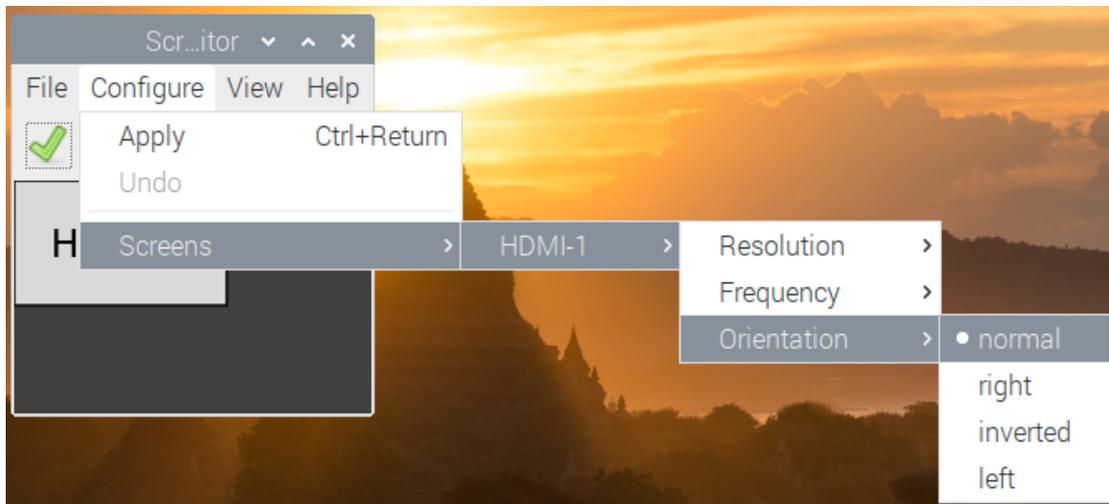
There are two ways to rotate the display angle, one way is from the Raspberry Pi desktop, and the other way is using the command line.

#### 1. Set from the Raspberry Pi Desktop

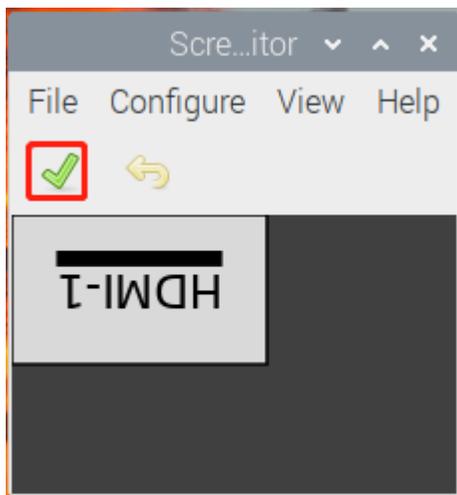
Click the **Raspberry Pi icon** -> **Preferences** -> **Screen Configuration**.



Then click **Configure** -> **Screens** -> **HDMI-1** -> **Orientation**, then select the angle you want to rotate.



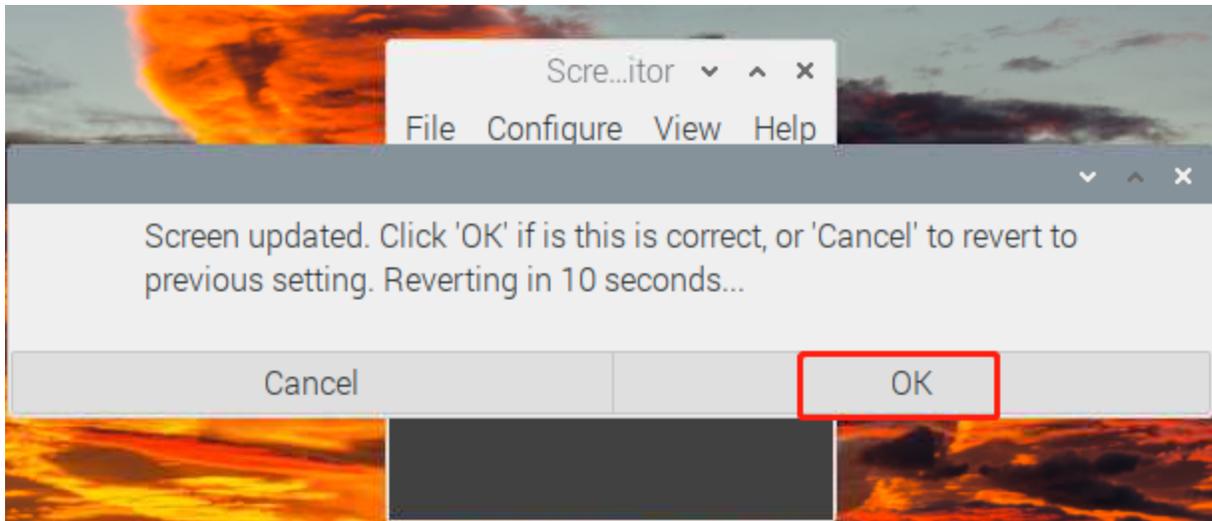
Click the green checkbox to take effect.



---

### Note:

- After checking the box, you need to confirm the changes by clicking **OK** within 10 seconds, otherwise it will go back to the previous angle.



- For Debian Bullseye system, there is only one option - **Inverted**, if you want to rotate to another angle, you need to set it from command line.

## 2. Using the Command Line

To make this change stay after a reboot, do the following to rotate your display.

Open the autostart file.

```
sudo nano /etc/xdg/lxsession/LXDE-pi/autostart
```

Add the following line to the end.

```
@xrandr --output HDMI-1 --rotate right
```

- `right` represents the direction of rotation, and there are 4 directions to choose from: `normal`, `right`, `left` and `inverted`.

After restarting the Raspberry Pi, you will see the effect of rotation.

```
sudo reboot
```

## 7.4.2 Rotate Touch Angle

Run the following command to open the `40-libinput.conf` file.

```
sudo nano /usr/share/X11/xorg.conf.d/40-libinput.conf
```

Find the touchscreen section and add the corresponding rotation angle to it.

```

File Edit Tabs Help
GNU nano 5.4 /usr/share/X11/xorg.conf.d/40-libinput

Section "InputClass"
    Identifier "libinput touchscreen catchall"
    MatchIsTouchscreen "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
    Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1"
EndSection

Section "InputClass"
    Identifier "libinput tablet catchall"
    MatchIsTablet "on"
    MatchDevicePath "/dev/input/event*"
    Driver "libinput"
EndSection

^G Help      ^O Write Out  ^W Where Is  ^K Cut       ^T Exc
^X Exit      ^R Read File  ^\ Replace   ^U Paste     ^J Jus

```

- 0 degrees: Option "CalibrationMatrix" "1 0 0 0 1 0 0 0 1"
- 90 degrees: Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"
- 180 degrees: Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1"
- 270 degrees: Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"

**Note:** For some Raspberry Pis, you may set the rotation angle of touch to 90°, but eventually you find that it is not 90° and you need to manually alternate these 4 sets of values.

After restarting the Raspberry Pi, you will see the effect of rotation.

```
sudo reboot
```

## PRODUCT FEATURES

- **Screen Size:** 7 inch Display
- **External Dimensions:** 182×114×15mm (L×W×D)
- **Visual Area:** 154.21(H)×85.92(V)
- **Resolution:** 1024×600 Pixels
- **Panel Type IPS:** 45% color gamut. HD full view screen.
- **Response Time:** 5ms
- **Contrast Ratio:** 800:1
- **Visual Angle:** 178°
- **Display Color:** 262K
- **Brightness:** 300cd/m<sup>2</sup>
- **Input Signal:** HDMI
- **HDMI Input:** Adjustable resolution ranging 640×480 ~1920×1200
- **Working Voltage:** DC 12V
- **Rated Power:** 7W
- **Microphone Output:** 3.5MM
- **Touch Screen:** 5 dot touch control applies to it, plug and play



FAQ

1. **The colored picture appears in black and white.**

**A:** Please check whether the saturation, brightness and contrast under the Color menu are adjusted properly.

2. **No picture is displayed on the screen after the device powers on.**

**A:** Please check whether the HDMI output port is plugged properly. And also please make sure the suitable adapter is connected to the LCD displayed.

3. **The picture is distorted in color or displayed with color abnormality like a certain color missing.**

**A:** Please check whether the signal wire is plugged in a good way. If the wire is defective or the wiring is loose, the signal transmission may be influenced, thus causing the fault.

4. **There appears stripe interference on the display and the picture is dark.**

**A:** Please check whether the socket and the plug are in good contact.

5. **The LCD cannot be turned on when no other equipment is connected.**

**A:** This is normal, please use it after connecting Raspberry Pi or other devices.



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