Camera Connection and capturing Images

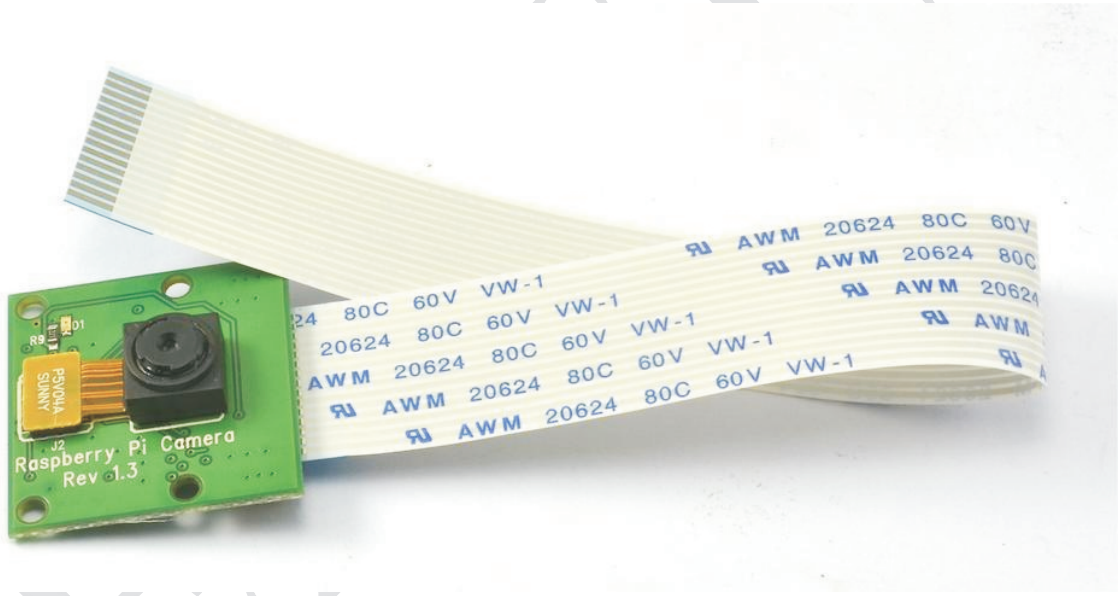
The Camera Module is a great accessory for the Raspberry Pi, allowing users to take still pictures and record video in full HD.

Hardware Guide:

For completing this lesson, you will require the Camera Module along with your initial raspberry pi setup.

Camera Module:

The Raspberry Pi Camera Board plugs directly into the CSI connector on the Raspberry Pi. The camera is supported in the latest version of Raspbian, the Raspberry Pi's preferred operating system.



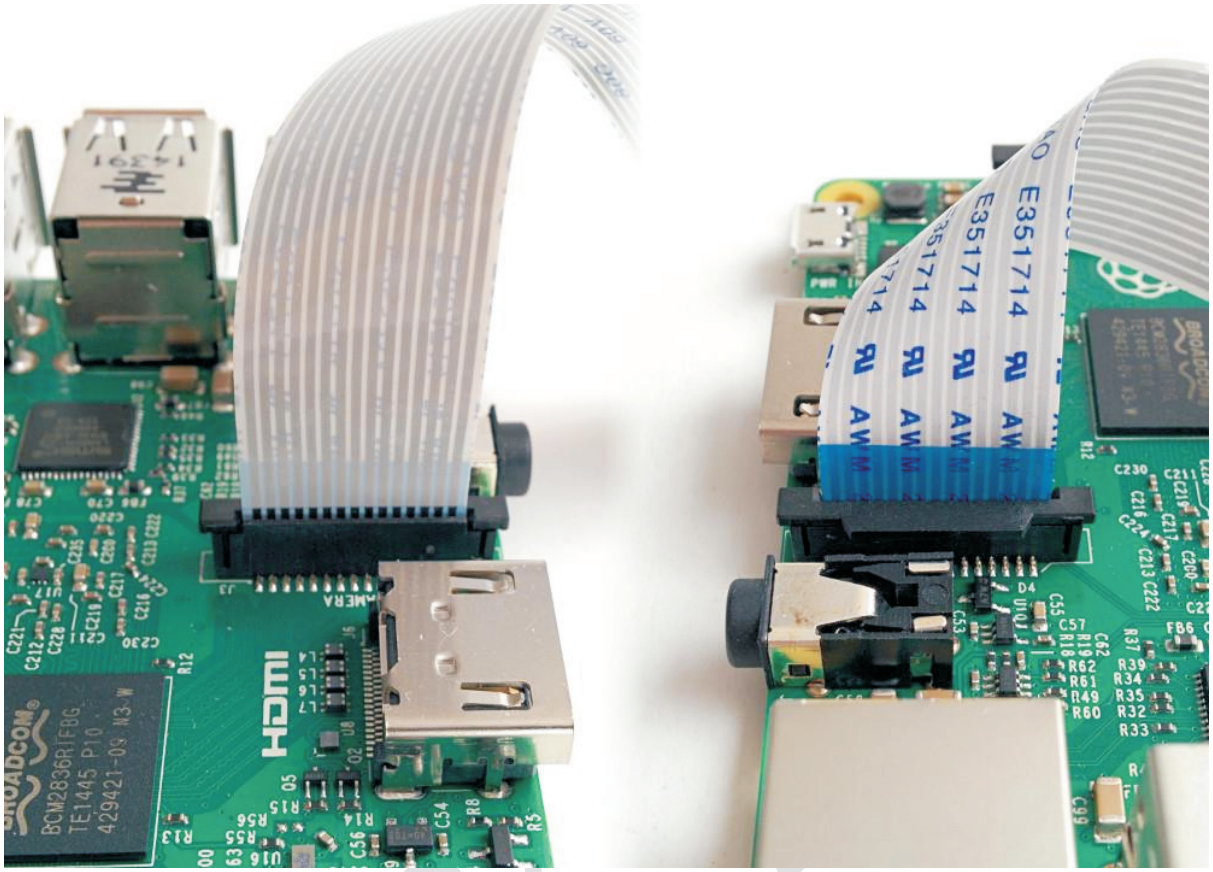
The Raspberry Pi Camera Board Features:

1. Fully Compatible with Both the Model A and Model B Raspberry Pi
2. 5MP Omnivision 5647 Camera Module
3. Still Picture Resolution: 2592 x 1944
4. Video: Supports 1080p @ 30fps, 720p @ 60fps and 640x480p 60/90 Recording
5. 15-pin MIPI Camera Serial Interface – Plugs Directly into the Raspberry Pi Board
6. Size: 20 x 25 x 9mm
7. Weight 3g
8. Fully Compatible with many Raspberry Pi cases

Connect the Camera Module:

First of all, with the Pi switched off, you'll need to connect the Camera Module to the Raspberry Pi's camera port, then start up the Pi and ensure the software is enabled.

1. Locate the camera port and connect the camera:



2. Start up the Pi.
3. Open the Raspberry Pi Configuration Tool from the main menu.
4. Ensure the camera software is enabled. If it's not enabled, enable it and reboot your Pi to begin.

Software Guide:

Now your camera is connected and the software is enabled, you can get started by capturing an image.

You can capture an image by just typing a single line command. Open terminal window and type the command as follows:

$ sudo raspistill -o /home/pi/Desktop/image.jpg

This command will capture an image and store it at the specified location (here the location specified is /home/pi/Desktop) with the specified name (here the name is 'image.jpg').

You can even write a code in Python to capture an image using raspberry pi camera.Open Python3, create a new file and type the code as follows:

Code:

```
#Camera Program

# import time and picamera library
from time import sleep
from picamera import PiCamera

camera = PiCamera()
camera.resolution = (1280, 720)      # selecting resolution 1280x720 px
camera.start_preview()
# Camera warm-up time
sleep(2)
camera.capture('/home/pi/Pictures/newImage.jpg') #capture and save image at specified location
camera.stop_preview()


#end of code
```

Hurray! We have learned how to interface camera wi th raspberry pi and how to capture image. You can also take videos and do much more things.