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Experiment No. 5.

Aim:- Understanding and connectivity of Raspberry Pi / Beagle board with camera. write an application to capture and store the image.

Theory:- Raspberry Pi camera module V2 replaced the original camera module in april / 2016. The camera module can be used to take high definition video as well as stills photographs. we can read all gory details about IMX219 & Exmore Rbach - illuminated sensor architecture on Sony's website.

It supports 1080p30, 720p60 & V4L2 modes as well as still capture. The camera works with all models of Raspberry Pi,

1, 2 & 3. It can be access through MMAL & V4L APIs & there are numerous third-party libraries built for it.

Camera Preview:

```
from Picamera import Picamera
```

```
from time import sleep
```

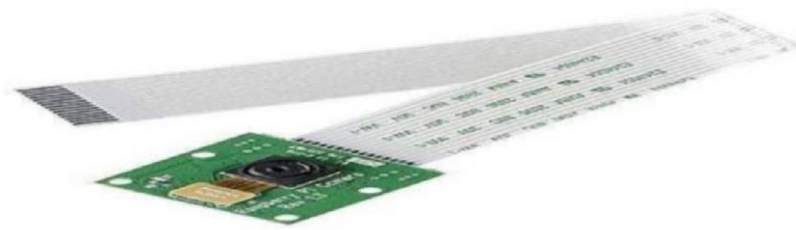
```
camera = Pi Camera()
```

```
Camera Start - preview()
```

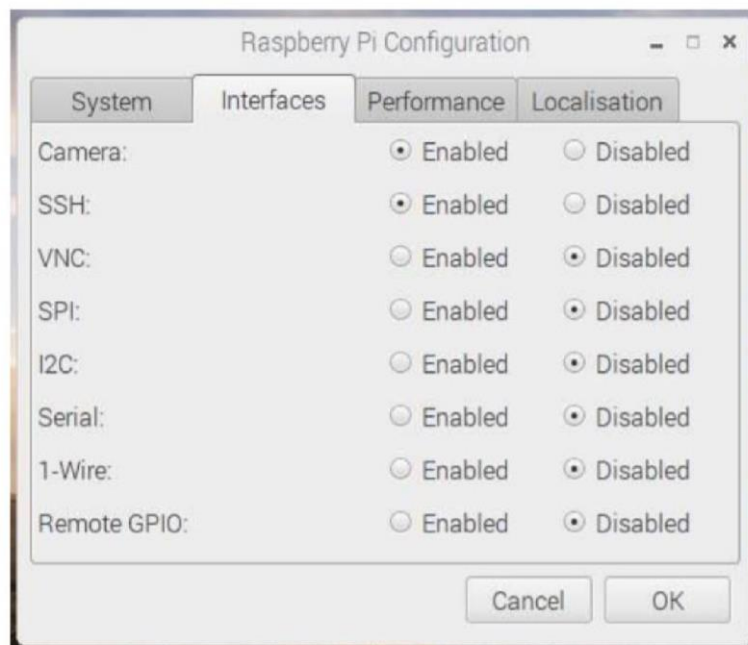
```
sleep(10)
```

```
camera stop - preview()
```

Pi Camera



Open Raspberry Pi Configuration and Enable the Camera



Rotating the camera :-

camera.rotation = 180

camera.start_preview()

sleep(10)

camera.stop_preview()

Storing the image :-

from picamera import Picamera

from time import sleep

camera = Picamera()

camera.start_preview()

sleep(10)

camera.capture('home/pi/desktop/image1.jpg')

camera.stop_preview()

Recording the video :-

from pi camera import pi camera

from time import sleep

camera = Picamera()

camera.start_preview()

camera.start_recording('home/pi/video.h264')

sleep(10)

camera.stop_recording()

camera.stop_preview()

Converting & playing video :-

The video format need to get converted to MP4. so install gpac

sudo apt-get install gpac

Now convert video to MP4

MP4Box -fps30 -addvideo.h264 video.mp4

Conclusion :-

We have studied Pi camera & stored images & video Pi camera.