

## 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 + VGA30 video 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
```

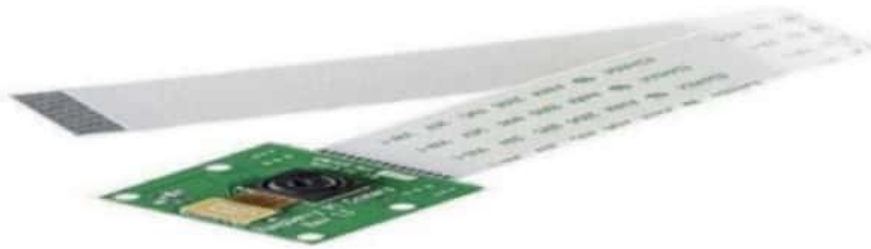
```
camera = PiCamera()
```

```
camera.start_preview()
```

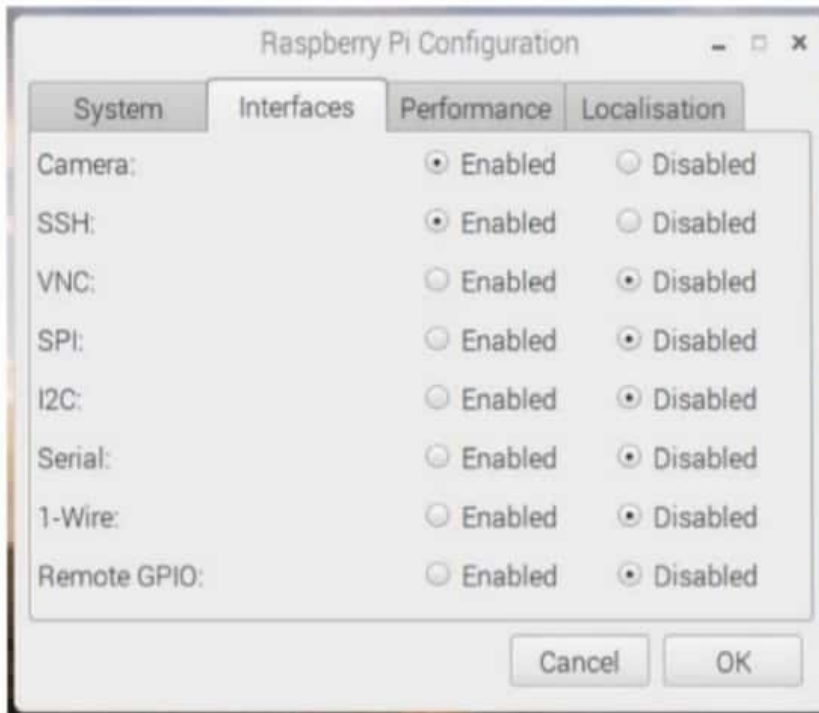
```
sleep(10)
```

```
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.