

Q1. Explain Raspberry Pi camera module.

- ⇒ - The raspberry Pi Camera module is a versatile and affordable camera that can be attached to a raspberry Pi to capture photos and videos.
- It is able to deliver a crystal clear 5MP resolution image or 1080p HD video at the recording speed of 30 Fps.
  - This module is attached to Raspberry Pi, by way of a 15 Pin Ribbon Cable, to the dedicated 15-pin MIPI Camera Serial Interface (CSI), which was designed especially for interfacing to cameras.
  - The board itself is tiny, at around 25mm x 20mm x 9mm and weighs just over 3g, making it perfect for application where size and weight are important.
  - The camera module includes an Image Signal Processor (ISP) that processes raw image data into a format that can be used by the Raspberry Pi.
  - This module can be useful in Home security and other educational applications.

Q2. Write the steps you have carried out while performing this assignment.

- ⇒ - step 1: \$ setup of Raspberry Pi model 3B.
- step 2:- Attached camera module to the Raspberry Pi using camera connector or CSI connector.

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- step 3 :- Go to preferences and then Raspberry Pi configurations.
- step 4 :- In interfaces, enabled the camera option and reboot the system.
- step 5 :- Used python script such as Picamera2 library to capture and process images.
  - For image;  
`mpicam-still -o image.jpg.`
  - For video;  
`libcamera-vid --codec h264 -t 10000 -o vid.h264`
- step 6 :- The captured images are saved in respective Folder.