VIRTUAL TELEPRESENCE ROBOT

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Introduction

The virtual telepresence robot is a robotic platform equipped with various sensors, cameras, microphones, and speakers, It is controlled remotely by a user, who can operate the robot from a different location using a computer or a mobile device.
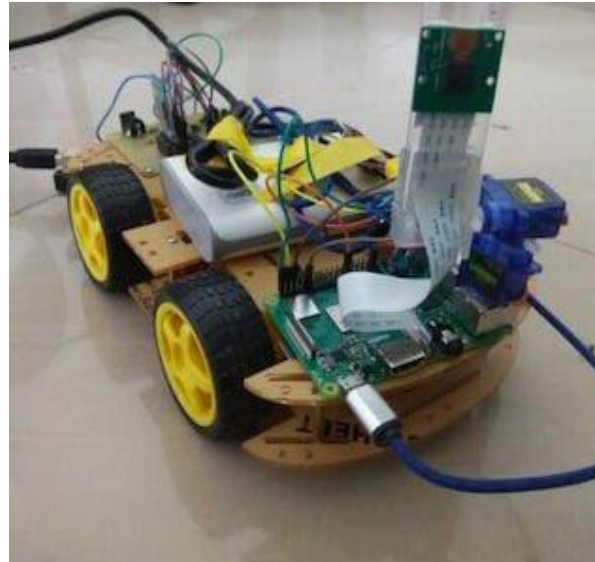The user's head movements are trasmitted to the robot, allowing it to navigate the remote environment and look at the objects around it.
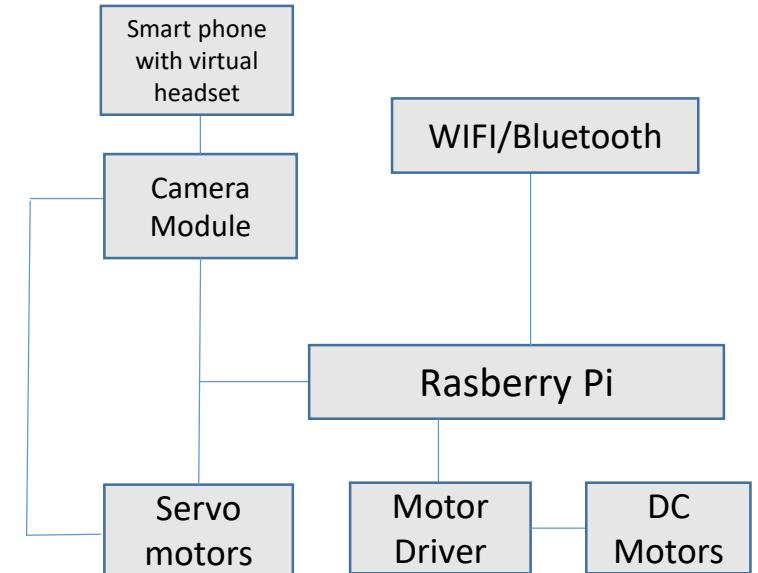
Building Camera Gimbal

We have used this app to send the gyroscopic data of the android phone to Raspberry Pi.It sends the data in the form of [x,y,z] which denotes the rotational speed around x,y and z axes of the device.

Video Streaming

We used the MJPG streamer to stream the video to the web-page.We set a static IP address for our Rpi so that it can be controlled from any device connected to the iitk-sec wifi

Working

```
Smart phone with virtual headset
        |
   Camera Module  ──────┐        WIFI/Bluetooth
        |                │              |
        |            Rasberry Pi ───────┘
        |             /        \
   Servo motors   Motor Driver ── DC Motors
```

Navigation

We have done our navigation using python code integrated with flask. We have successfully tested our code and logic using LED bulbs. This creates a seamless connection between the user and the robot, allowing the user to navigate and interact with the remote