Mini-Project Batch No.	:	**3**	
Semester & Section	:	**6B**	
Academic Year	:	Jan-Jun 2022, Even Semester, 2021-22 Batch	
Course Name & Code	:	Mini Project & 19EC6DCMPR	
Title of the 6th Sem BE mini-project work	:	Wide Angle coverage Video streaming using Raspberry pi	
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Mini-Project Sec. in-charge	:	Prof. Kavita Guddad	Sign :
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Field / area of mini-project	:	IOT, Communication, Content delivery networks, Cloud base encoding, transcoding	

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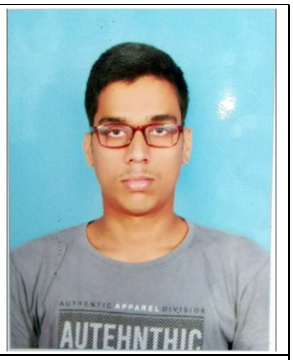

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Abstract –

Live video coverage has become one of the key requirements in the present day situations. It may include the video coverage of situations like live cricket match, crime scene area coverage etc., Video streaming, in various forms of ***video on demand (VOD)***, ***live***, and ***360 degree streaming***, has grown dramatically during the past few years. In comparison to traditional cable broadcasters whose contents can only be watched on TVs, video streaming is ubiquitous and viewers can flexibly watch the video contents on various devices, ranging from smartphones to laptops, and large TV screens. Such ***ubiquity*** and ***flexibility*** are enabled by interweaving multiple technologies, such as video compression, cloud computing, content delivery networks, and several other technologies. So, a model is being presented here which widely covers the ***video footage (more than 270◦)*** of any particular area, with high resolution. All the above mentioned capabilities make the video-streaming model being presented one of the good quality, secured models.

Introduction:

Live streaming usually refers to the delivery of media content over the Internet immediately after its generation. Video streaming has received much attention for some time now, and its popularity has grown manifold in the last decade, particularly with the deployment of widely known video streaming services, such as YouTube, Netflix, Hulu, Daily Motion, and others. Video streaming now accounts for a large share of the total traffic the Internet, and as such the transmission mechanisms used by video servers have an impact not only on the quality of the video presentation to the clients, but also on the total traffic impact on the network.

Objective: The model proposed mainly achieves 2 important requirements

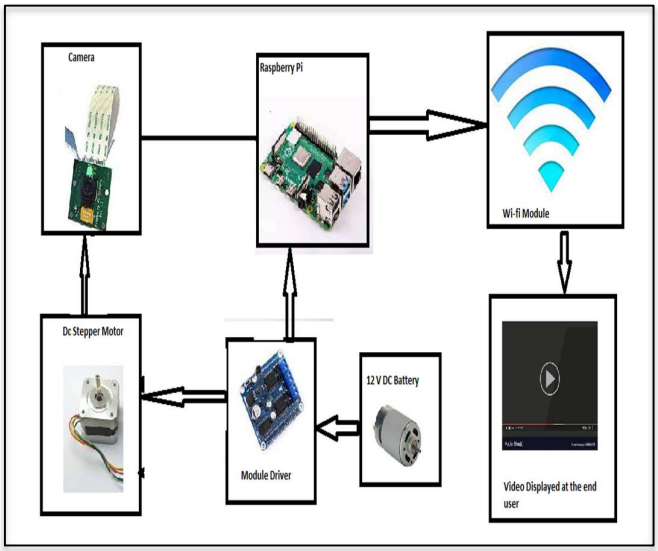
- A video of ***appreciable resolution*** and ***wide coverage*** of a scenario will be displayed on the user's screen.

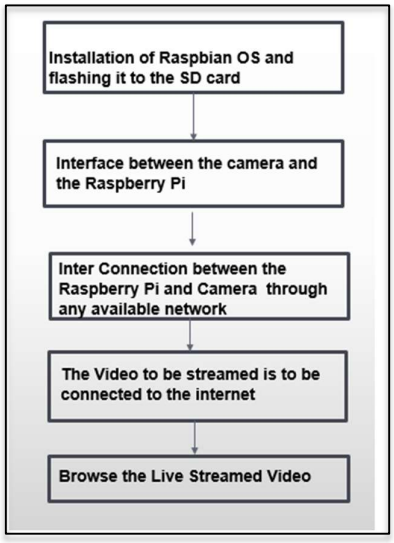
Aim: Build a video-streaming model with the crucial additional features (compared to currently available models).

The additional features being included in the proposed model are:

Greater than 270 degree coverage of the video with appreciable resolution ***Increased Range*** of Video being streamed

Proposed Block Diagrams & Flow-Chart:





Proposed methodology – A connection should be set up among Raspberry Pi, Desktop and Wi-Fi. Required libraries/modules are to be installed in Raspberry Pi. After the connection, Raspberry Pi will be monitored through desktop. The camera attached to Raspberry Pi is connected with stepper motor to cover wide area of the Video being streamed.

Security Shell (SSH) is the protocol used to transfer the ***Video (data or content)*** from the ***Location under surveillance*** to internet through a ***Wifi module*** or any network for instance and make the user ***browse*** the video being streamed.

Working of the mini project module –

After all the necessary interfacing between the hardware and the software is made, the Video starts getting recorded in the camera and through the ***SSH protocol***(as previously mentioned), the Video to be streamed is ***made available in the internet*** through any network (Example Wi-Fi) and the video streaming happens ***ubiquitously***.

Applications & Advantages –

- Useful in investigations like CBI
- Useful in traffic management for abiding rules
- For security purposes in organizations/institutions
- In vehicle parking

Tools used

Software	**hardware**
• Raspbian OS	Raspberry pi 3 Model B+
• SSH Protocol	SD Card
• Python libraries	Stepper Motor
• Blynk app.	Jumper wires
•	Raspberry pi Camera

Expected Outcome:

By the end of this project the key expected outcomes are:

- A wide-angle coverage of ***more than 270 degree***
- ***Increased range*** of Live Video being streamed i.e., ubiquitous streaming

Flow-line: Mar **-** Team worked on the project to be done

Apr – The interface between Raspberry Pi, Pi Camera through Wifi Network will be achieved

May–

- Video will be made available on the internet
- The network to which the video is being broad casted is increased
- Model will be almost ready

Jun - The model will be cross checked with the expected outcomes, errors etc and finally presented