Three-Day Workshop on "Coding On Raspberry Pi"

IEEE MVSR SB CASS Student Chapter has conducted a three day workshop on "Coding On Raspberry Pi" from 1st to 3rd October, 2020. This was conducted as most of the students wanted to get acquainted with the knowledge on Raspberry Pi.

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Dr. Atul Negi,

Professor, School of CIS,

University of Hyderabad

Student Branch Advisor:

Dr. G. Kanaka Durga,

Principal and Professor,

MVSR Engineering College.

Student Branch Counsellor:

Dr. D. Hari Krishna,

Associate Professor, EEE Dept.,

MVSR Engineering College.

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Mrs. A. Vijaya Vahini,

Assistant Professor, IT Dept.,

MVSR Engineering College.

PES Student Chapter Advisor:

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MVSR Engineering College.

CS Student Chapter advisor:

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Associate Professor, CSE Dept.,

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CASS Student Chapter Advisor:

Mrs. S. Aruna

Assistant Professor, ECE Dept.,

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Session details:

Date: 1ˢᵗ -3ʳᵈ October, 2020**.**

Time: 05:00pm – 07:00pm**.**

No. of participants: 84

Speaker Details: Dr. M. Shyamsunder is an Assistant professor in Department of ECE, Osmania University. He has a teaching experience of 16 years and an industrial experience of 3 years.

- He holds a PhD in Microwave Engineering from Osmania University
- His research interests include Signal Processing and Embedded Systems
- Received best paper award for IEEE UPCON conference in 2017

DAY-1

Ms. Pranitha, Vice Chair, CASS, IEEE MVSR SB has started the meeting by welcoming the speaker Dr. M Shyamsunder, Dr. D. Harikrishna, Student Branch Counsellor, IEEE MVSR SB, Mrs. S. Aruna, Student Chapter Advisor, IEEE MVSR CASS, faculty members, Executive Committee and all the attendees.
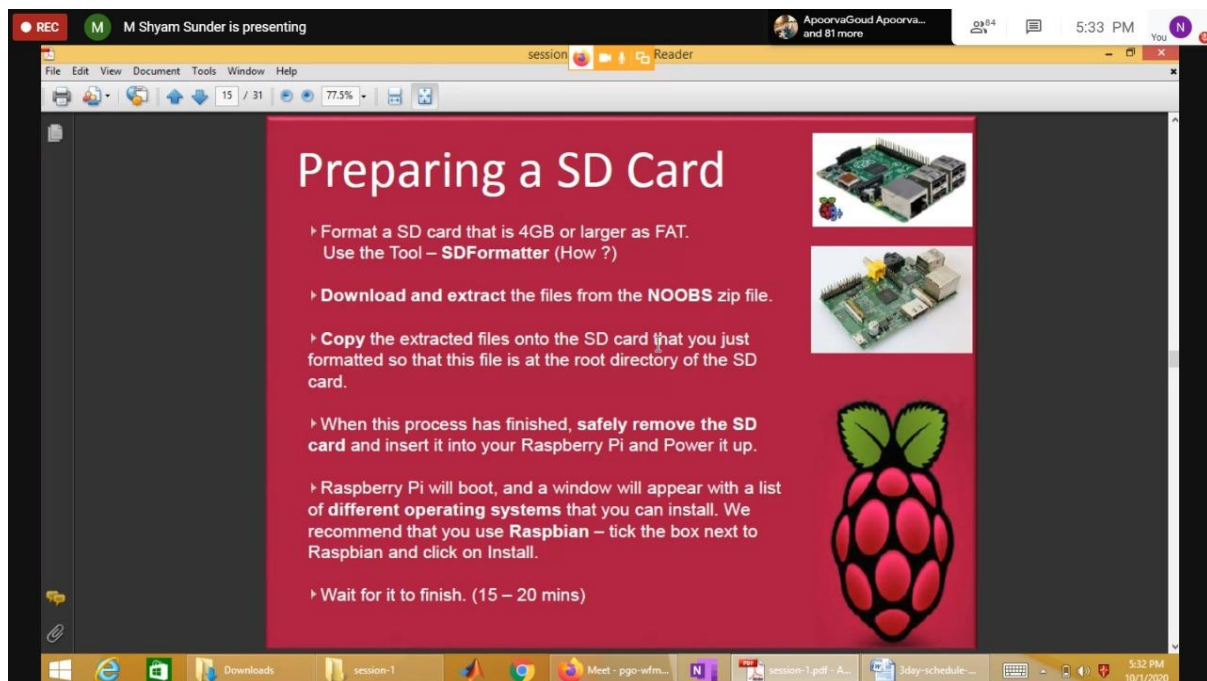
A Slide form the presentation

Dr. D Harikrishna, Student Branch Counsellor, IEEE MVSR SB has initiated the session by addressing the meeting and spoke about the bond he shared with the speaker. Next, Mrs. S. Aruna, CASS Advisor, IEEE MVSR SB spoke about the agenda of the three-day workshop.

Ms. Pranitha introduced the speaker to the attendees and has briefed the topics that were to be discussed in the Day-1 of the workshop and handed over the session to the speaker.
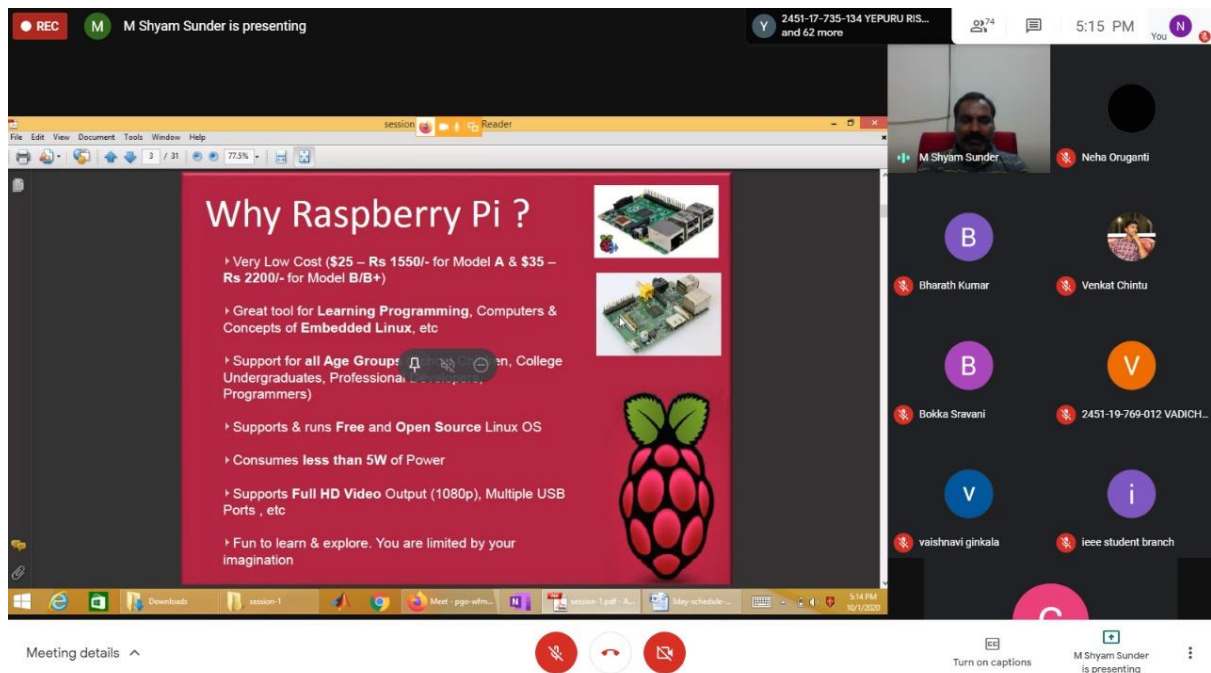
**Speaker explaining the importance of Raspberry Pi**

The speaker, Dr. Shyam Sunder has started the workshop by giving an introduction about Raspberry Pi to the attendees. He gave the detailed specifications and comparison between Arduino and Raspberry Pi.

He also told about the different versions of Raspberry Pi available and how there are added modifications to each advancing version. At the end, he explained the LED Blinking System and concluded the day's schedule with a doubts session.

DAY-2

The second day of the workshop started with the speaker talking about the technical aspects of Raspberry Pi. He told about the languages that can be used to program it.
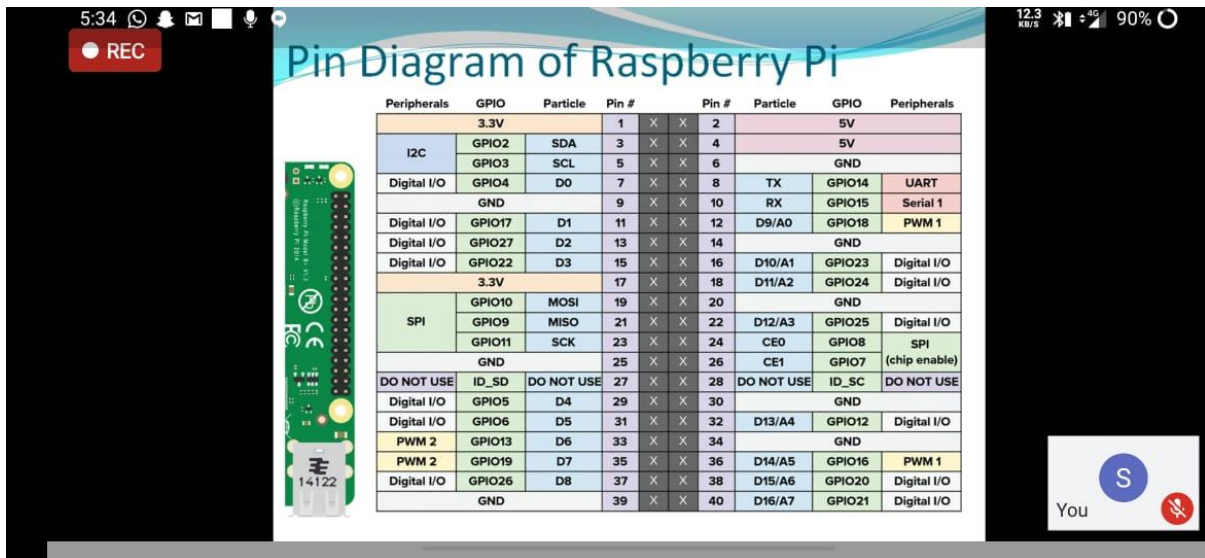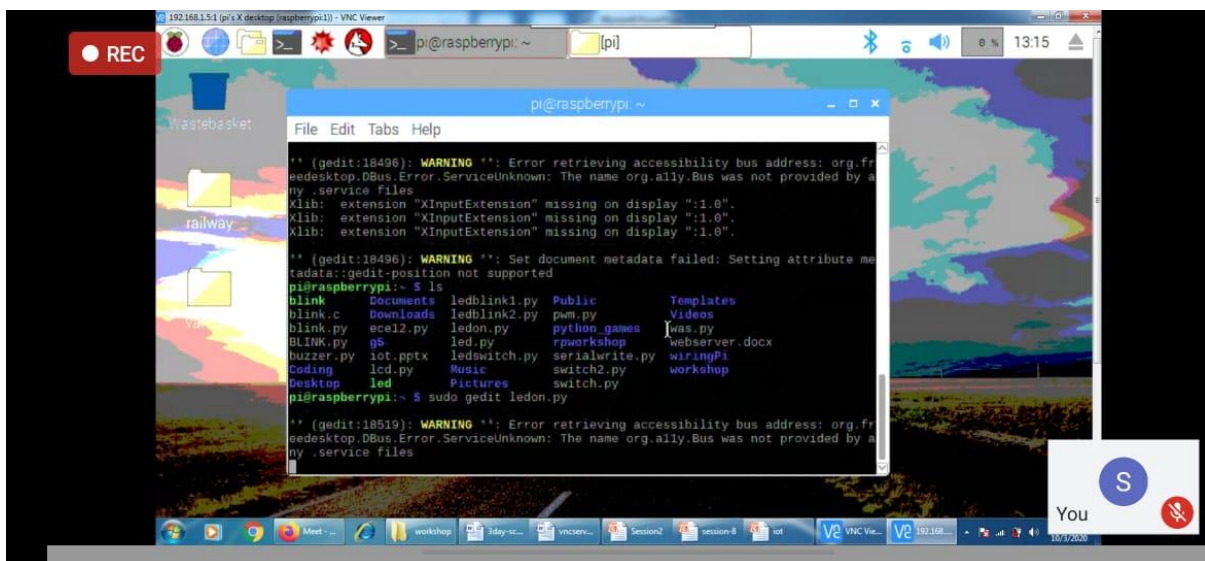
Pin Diagram of Raspberry Pi

He spoke in detail about the Button input and Buzzer interfacing and explained their functions. He displayed the required codes and demonstrated the output to the attendees.

Later, he has conducted a hands-on coding session on Python. He clearly explained about the advantages of Python usage to C Language over Linux Machines.

Speaker Illustrating the code to the attendees

Next he spoke about the functions in WiringPi and clearly explained its setup. He told about how WiringPi is a PIN based GPIO access library written in C for the BCM2835, BCM2836 and BCM2837 SoC devices used in all Raspberry Pi versions.

He also explained about the LED and Button interfacing using GPIO using C Programming. He spoke about the importance of the use of GPIO and told how GPIO drives an output

device like LED. He elucidated the concept of GPIO and buzzer interface. The day's session ended with the speaker clarifying the doubts of the attendees.

DAY-3

On the third day, speaker started the session by explaining Serial Terminal. The speaker has briefed the attendees about the Serial Terminal and its function. He demonstrated the procedure for its installation.

He displayed few images which pictured the physical changes in the Serial terminal and gave few examples of coded outputs and presented them to the attendees.

He introduced the Apache HTTP server to the attendees and made them use it by writing a few code samples. He spoke about the advantages of using Apache as it is a free and open-source cross-platform web server software available.
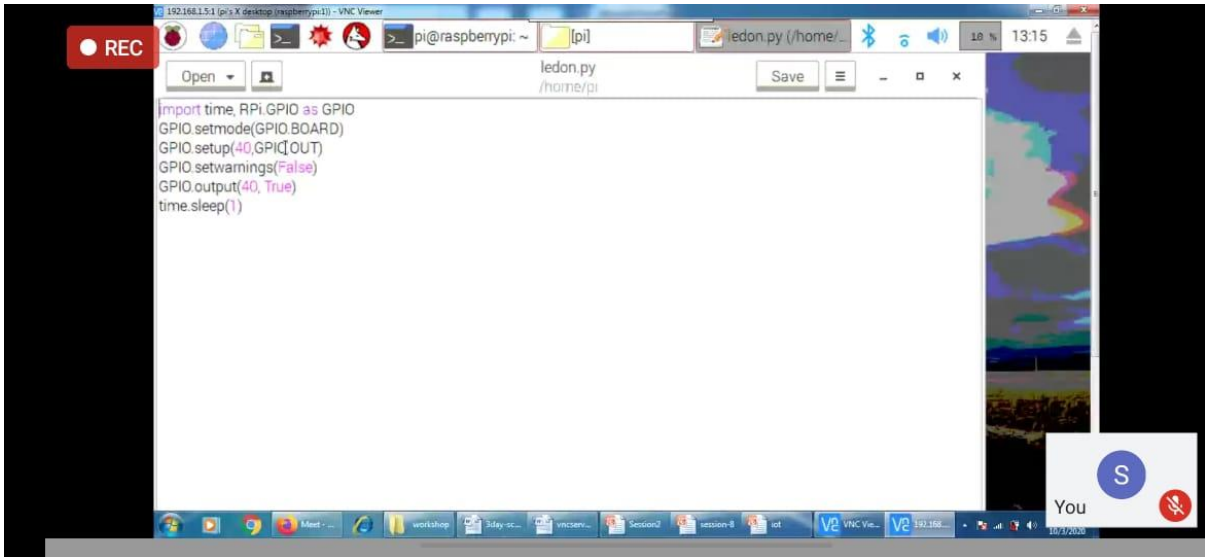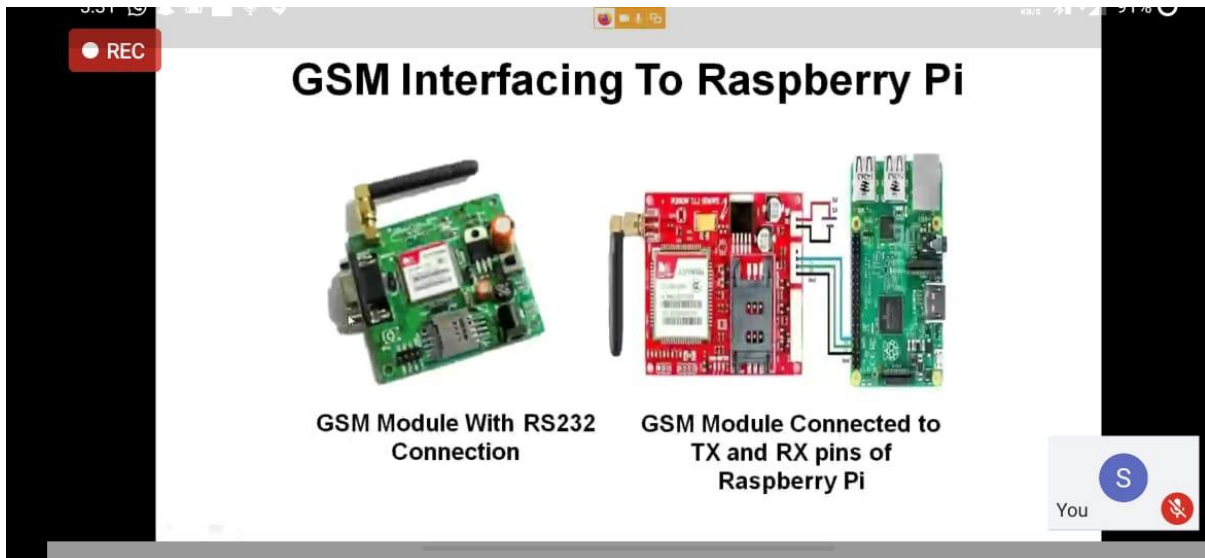
Pictures showing the example of Apache2

The session continued with the speaker talking about Serial Communication Programming, explained it with clear pictures. Next, he taught about Interfacing GSM module with Raspberry Pi.
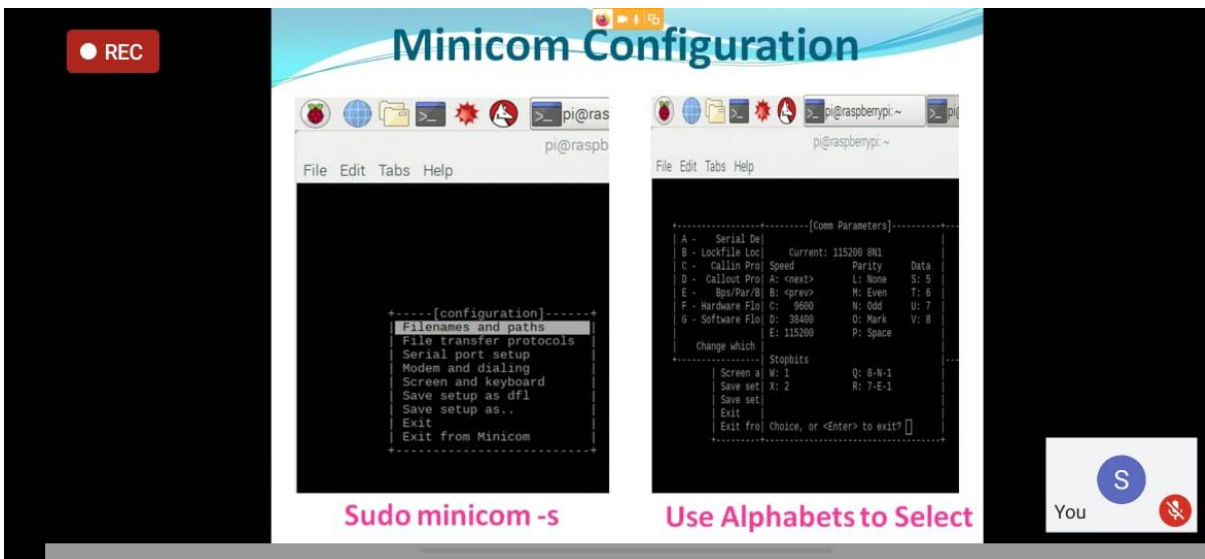
The example of Minicom Configuration & GSM module with Raspberry Pi

He continued the session by discussing about Remote Computing. He let the attendees present their POVs on the topic. Later, he explained its details and uses. He also spoke about Remote Access Client and explained about it with the aid of pictures.

Next was the doubt clarification session. The attendees asked questions about Arduino and Raspberry Pi interface, doubts in the code written for button interface and GSM Module. The speaker answered all the questions with the assistance of pictures and sample code pieces very patiently.

The session ended with a vote of thanks by Ms. Shreeya Rishi, Secretary, CASS. She thanked all the attendees for their time and presence.

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