



Hope Foundation's International Institute of Information Technology, Pune

Department of Computer Engineering

12th March 2021

Name of the Event: Guest Lecture on "Embedded IoT system design with Raspberry Pi"

Name of Event Coordinator: Prof. Ravindra P. Joshi

Date of the Event: 10th March 2021

Resource Person: Mr. Yashodhan Mandke, IoT security researcher, Head of Compliance and Quality at Payatu Security Consulting Pvt Ltd, Pune

Number of Participants - 56

Topic - Embedded IoT system design with Raspberry Pi

Objectives:

1. To understand fundamentals of Embedded systems and Role of IoT.
2. To develop comprehensive approach towards building low cost embedded IoT systems.
3. To learn to implement secure infrastructure for IoT.

Outcomes: Students will be able to:

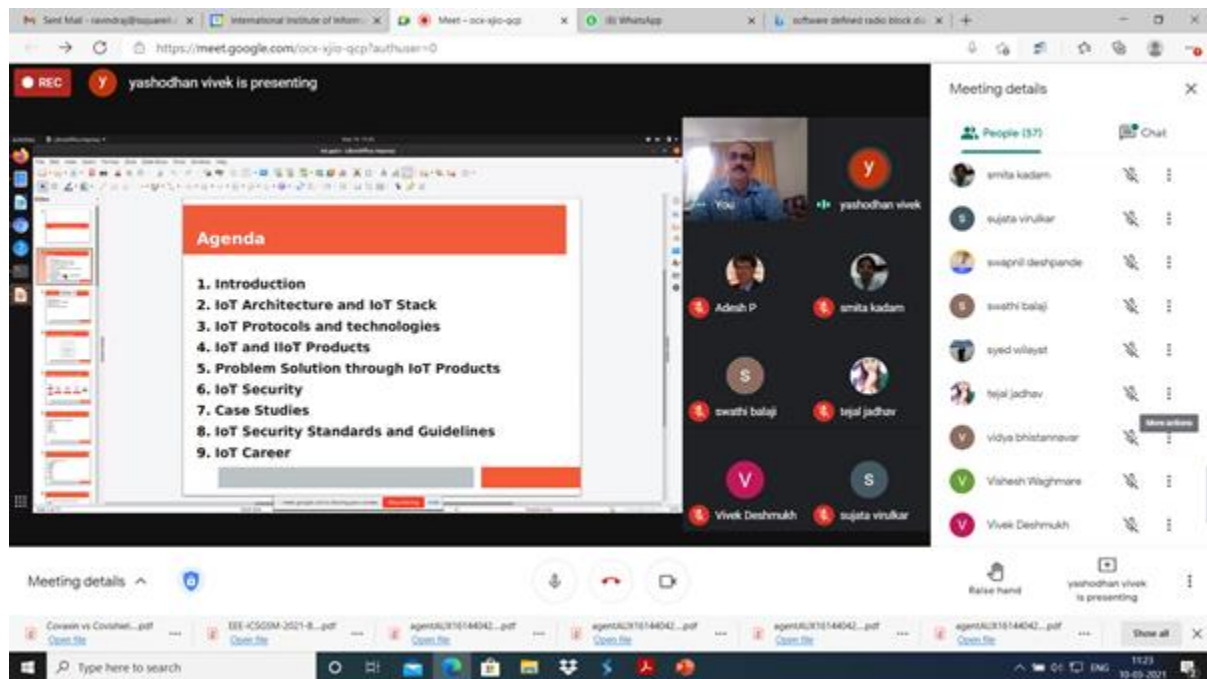
1. Implement an architectural design of IoT for a specified requirement.
2. Choose between available technologies and devices for IoT applications.

3. Understand security challenges faced by IoT industry.

Summary of the Event:

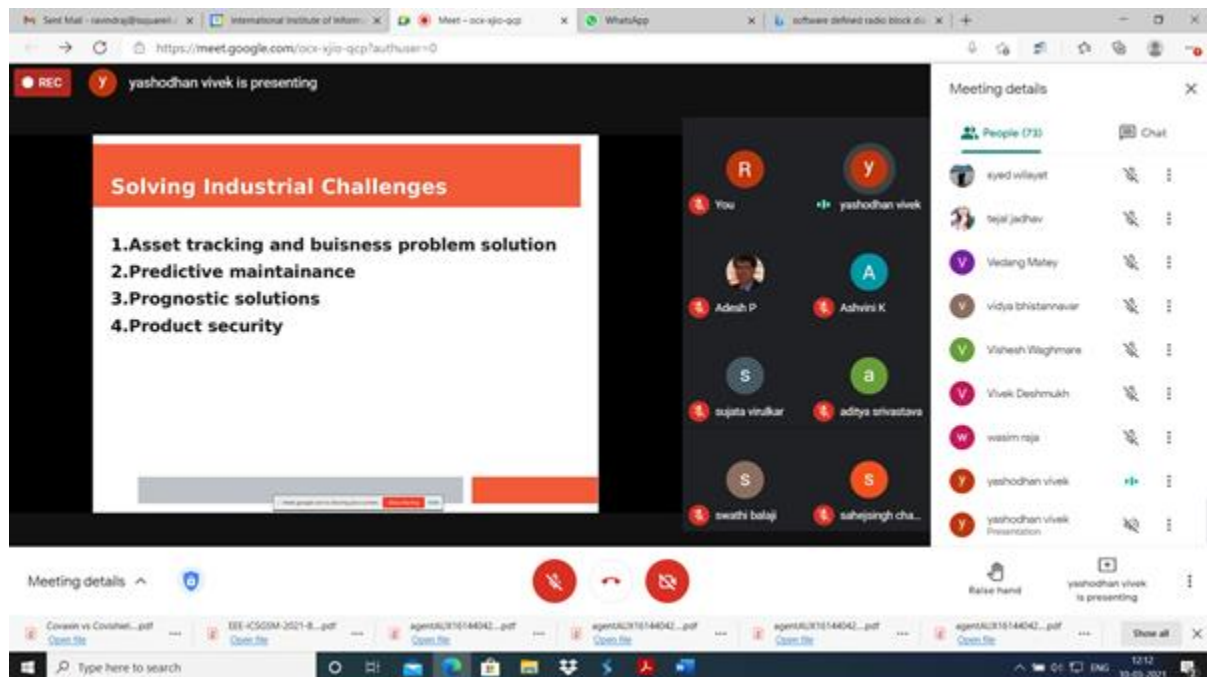
In the past two decades only computers and mobile phones were connected to the Internet and people have been sending large amounts of data including text, files, emails, audio and video etc. However, in the last couple of years focus has been shifting to connect domestic equipment such as washing machines, refrigerators, microwave ovens, Bluetooth enabled devices, temperature sensors, building automation equipment, utility meters as well as industrial automation equipment, process controllers, irrigation pumps to the Internet for remote and intelligent monitoring and control of the equipment. These are referred as "things" in the context of Internet of Things (IoT) which have unique identities and are connected to the Internet. They can perform remote sensing, monitoring and control as well as exchange data with other connected devices and applications (directly or indirectly) or collect data from other devices. It is forecasted that about 50 billion devices /things will be connected to the Internet in near future which means 5-6 "things" per person will be connected to the Internet for exchange of data and control functions.

Photo graphs of the event:



Embedded system has a microcontroller or a microprocessor at the core and the tasks which needs to be performed by these systems are embedded into the memory of these devices. Embedded system can be called as an electronic device which performs specific set of tasks using limited hardware and lightweight software system coordinating the hardware. One of such Embedded IoT platform is Raspberry Pi device.

Mr. Yashodhan Mandke who has a work experience of more than 10 years as a IoT security researcher, Head of compliance and quality at Payatu Security Consulting Pvt. Ltd. Pune delivered a Guest lecture on Embedded Systems and Internet of Things (IoT). He explained Raspberry Pi device as one of the simplest example of Embedded systems and IoT. He demonstrated programming of Raspberry Pi device for a few applications and also highlighted security challenges associated with IoT with the help of few case studies. Finally, students got to know about the career opportunities in this new and upcoming area of Embedded systems and IoT in the near future.



Prepared By: Prof. Ravindra Joshi

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