

“Demonstration of WSN & IoT Modules” under ISTE Staff

Chapter

Internet of Things (IoT) is an ecosystem of connected physical objects that are accessible through the internet. It is the network of physical objects that can communicate sense or interact with their internal states or the external environment. To inculcate the erudition of Internet of Things on real time basis among students to converge their zest in developing real-world projects, **Modernization of WSN & Internet of Things (IoT) laboratory** will be a stepping stone.

Department of Electronics & Communication Engineering, GCET has received a grant of **Rs. 10,33,0000.00** from AICTE under **MODROB** scheme for developing Wireless Sensor Network (WSN) & Internet of Things (IoT) laboratory. The Modernization of the laboratory scheme sanctioned WSN modules, Internet of Things (IoT) modules, Raspberry Pie modules and a Printed Circuit Board (PCB) machine. With these modules department can facilitate various innovative project from under graduate students to the research in this domain of Ph.D aspirant.

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Amount : Rs. 10,33,000.00

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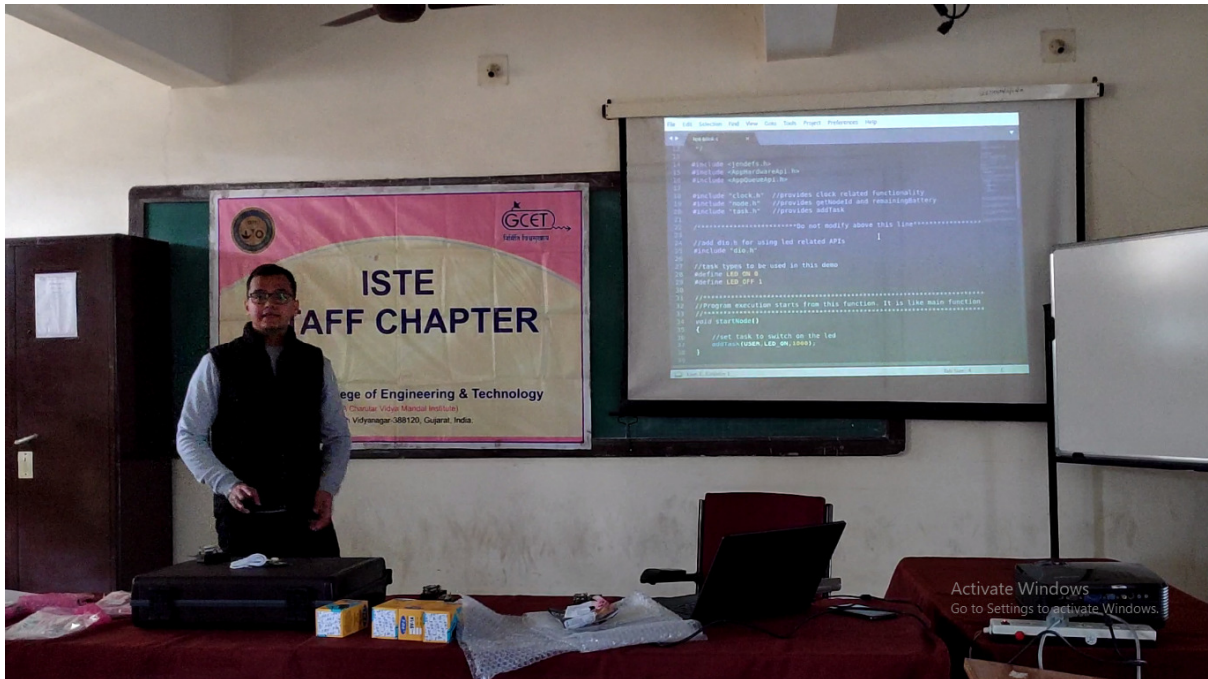
Aiming to provide an intense training on teaching MODROB new device at undergraduate level for college and institute faculty, a one-day workshop on “Demonstration of WSN & IoT Modules” was held during 11th February 2020 at G H Patel College of Engineering and Technology, Department of Electronics and communication under the banner of ISTE Staff Chapter.



EIGEN Technologies Pvt. Ltd., New Delhi, an ISO 9001:2008 certified company, is conceived and groomed in India. EIGEN aims to compete with the world's best technological enterprises. EIGEN is already an established name in the sphere of technology solution providers across India. Speaking on the occasion, speaker from Eign Technologies, Mr. Gaurav said “With the learning, relearning” how to teach the new generation students in this highly technological world.” He felt that availability of all information at the clique of the mouse for the students made the 21st century teaching a very challenging one and teachers should mould themselves to the required environment. He gave some informative examples of how this device can be used in various projects and various industries



Mr. Gaurav from Eigen Technologies give his valuable time and explain each and every components including GPS Wi-Fi module its different interfacing like camera module speedometer, and many more The event was basically designed to bring the college department faculty to understand new modules . Around all EC department facultis and 3rd year EC students participated in the workshop. The workshop was organized by Department of electronics and communication.



Under the Modernization of WSN & Internet of Things (IoT) laboratory, Department of Electronics & Communication Engineering, GCET procured WSN motes with Integrated Antenna, USB Gateway Module with cable, Wi-Fi Gateway Module, Ethernet Gateway Module, GSM Gateway Module, Light Sensor Module, Temperature Sensor Module, Humidity Sensor Module, Pressure Sensor Module, PIN Extension Module, GAP Sensor Module (GPS, PIR & Accelerometer) and Camera Module (for WSN motes).

Steps to Install, Build and Run a Project in SENSEnuts-

- The installation is pretty easy. The Installation Wizard guides us through each step of installation.
- We first enter the path specified as “C:\sensenuts\2.0.2\AppCode” where the various demo codes are present.
- We choose our desired code or make our own, with the help of the „API Reference

Guide" in the „docs" folder that lists the pre-defined functions of the SENSENuts software elaborately and then save our code in the path under the desired name, say "Abcd".

- We create two folders in Abcd, namely „output" and „source" as well as a file named „Makefile".
- The „output" folder will be empty and the „source" folder will contain our source code „Abcd" in .c file format.
- In the „Makefile" file, the source file and target needs to be modified into "Abcd.c" and the required Target name, while the DIRS will point to the path location of the file, generally given as DIRS= "../././Lib"
- After we have performed the above steps, we can build our Project using either of the two processes, using Eclipse or Command Prompt.
- Using Eclipse, we need to do the following:
 - We select File -> New -> Makefile Project with Existing Code.
 - We select the required folder in which our code is kept. The folder must have the „Makefile" file in the folder.
 - Clean the Existing Project
 - Build the Existing Project
- In order to set the path, we perform the following steps:
 - We copy the path that has been displayed in the Console tab.
 - We click on the "Advanced System Settings" of the computer and set the path as the one we copied. We save the changes as necessary.
- Using Command Prompt, we need to do the following:
 - Delete .cproject and .project inside the "Abcd" folder
 - Delete all the files inside the output folder
 - Open cmd, and change directory to "C:\sensenuts\2.0.2\AppCode\Abcd"
 - We build the project using just the keyword „make"
 - Now a .bin file will be created inside the „output" folder, which we require.
 - We open up „sensenutsGUI" which will then determine the Mac address once we connect a particular sensor and then burn the code on to it.
 - Now our sensor is ready to give the desired output as per the requirements of the code.

