

Report on
INDUSTRIAL VISIT TO HOME AUTOMATION CENTER,
BANDRA EAST, MUMBAI

DATE: 11th September, 2018

VENUE: 2nd Floor, 19 Asha, Kalanagar, Bandra (E), Mumbai

TIME: 2:00 P.M. to 3:30 P.M.

FACULTY MEMBERS: Prof. Jyotsna More/Prof. Martina D'souza

NO. OF STUDENTS: 67 Students of IT department + 1 Student of Computer department

INDUSTRIAL CO-ORDINATORS:

Mr. Neil Savant (Managing Director, Falcon Control Systems & Automation Pvt. Ltd.)

Mr. Onkar Arjunwad

OBJECTIVE:

The department of Information Technology of Xavier institute of Engineering, Mahim, presents and anticipates its students with latest technology and developments in the world. Internet of Things (IoT), which is the network of connected “smart” devices that communicate seamlessly over the Internet, is transforming how we live and work. IoT is fast growing, having advanced uninterrupted features and on huge demand in global market. The concept of IoT has revolutionized the way organizations across industry verticals interact with their customers. Every student from a technical background should have a fair knowledge in this fast growing

technology for the glorious next generation India. In order to have a good control over such technology, it is necessary to combine theoretical knowledge with practical one. Knowledge through books alone is not sufficient. For the same purpose, students are encouraged to participate in Industrial visit. Hence, an Industrial visit to a Home Automation Center, Bandra, Mumbai is planned for Third year IT students to make them sentient of various tasks and activities or work carried out in the field of IoT.

SCOPE:

Since the students of Third year, Information Technology, have Internet of Things, as one of their subjects, a visit to a Home Automation Center, Bandra, Mumbai will definitely help them to provide a practical scenario of Home Automation and “Smart applications” of various sensors.

DURATION:

The Industrial visit was planned as a one day visit on 11-09-2018, consisting of 2 teaching faculty and 68 T.E. students. A group of 68 students gathered around 2:00 P.M. at the before mentioned venue. Some of the students reached there by their own vehicles while others reached by public transport.

The day started off with the faculty coordinators assisting and organizing students at the venue. Then students were then divided in to 3 groups and each group underwent vigorous training one after the other.

Firstly, the faculty coordinators introduced the students to Mr. Onkar Arjunwade (Representative, Falcon Control Systems & Automation Pvt. Ltd.). Mr. Onkar told the students about the company and the types of products and services it manufactures. Further, Mr. Onkar gave the students a brief overview of what IoT actually is and the applications it has in day-to-day life. The students were then explained about the mechanism by different components in a workplace, apartment or industry can be controlled wirelessly simply by using a smart phone.

Next, students were shown a live demonstration of various “smart appliances” used in home automation. These smart appliances included smart lights and fans, automated curtains, smart

WiFi Router and finally, an automated door lock system, with fingerprint scanner and password protection. Demonstration of each of these appliances was followed by a detailed explanation of each of them.

Further, Mr. Onkar explained the students regarding various sensors which we can use for developing prototype models for studying their working. He also gave the students a keen insight on the ongoing research and various challenges in the fields of IoT.

Towards the end of the session the respective faculty co-ordinators and Mr. Onkar handled the doubts and queries of the students. Students have learned following technical points –

IOT APPLICATIONS IN HOME AUTOMATION:

Smart Thermostats:

- Smart thermostats are thermostats that can be used with home automation and are responsible for controlling a home's heating and/or air conditioning.
- They perform similar functions as a Programmable thermostat as they allow the user to control the temperature of their home throughout the day using a schedule, but also contain additional features, such as sensors and WiFi connectivity

Smart Lighting:

- Smart lighting is a lighting technology designed for energy efficiency. This may include high efficiency fixtures and automated controls that make adjustments based on conditions such as occupancy or daylight availability
- Lighting is the deliberate application of light to achieve some aesthetic or practical effect.

Smart Curtains:

- Smart curtains are curtains fitted with motorized devices and sensors.
- These devices control the movement of the curtain such that it can be connected to an alarm clock, it can open and close at random, or even monitor the location of its users and use this to regulate the temperature of your home.

Smart Smoke Detectors:

- For example, The Roost battery is one of the best options for those who already have smoke detectors, and want to make them “smart.”
- That's because the Roost battery, which is Wi-Fi- enabled, sends an alert to your smartphone when the siren goes off.

Smart Door Lock:

- A smart lock is an electromechanical lock which is designed to perform locking and unlocking operations on a door when it receives such instructions from an authorized device using a wireless protocol and a cryptographic key to execute the authorization process.
- It also monitors access and sends alerts for the different events it monitors and some other critical events related to the status of the device. Smart locks can be considered part of a smart home.
- Smart locks allow users to grant access to a third party by means of a virtual key. This key can be sent to the recipient smartphone over standard messaging protocols such as e-mail or SMS.

CHALLENGES IN IOT:

Meeting customer expectations:

- With the year 2020 on the horizon, customers have higher expectations than ever before.
- According to a recent report by Salesforce, 57 percent of consumers are more interested in doing business with an innovative or forward-thinking company — and 50 percent won't hesitate to switch brands if their needs go unmet.

Easing security concerns:

- The IoT was initially touted as a hyper-secure network that was suitable for storing and transmitting confidential datasets.
- Although it's true that the IoT is more secure than the average internet or LAN connection, it's not exactly the bulletproof shell some users expected. Some of the most significant security concerns involve both the IoT and the cloud.

Keeping IoT hardware updated:

- Regardless of how a company uses the IoT or the cloud, data integrity is a common challenge. With so much data coming in from multiple sources, it's tough to separate useful, actionable information from irrelevant chatter.
- It's critical to calibrate your IoT sensors on a regular basis, just as you would any other kind of electrical sensor.

Overcoming connectivity issues:

- In its current form, the IoT utilizes a centralized, server-client model to provide connectivity to the various servers, workstations and systems.
- According to updated reports from Gartner, more than 20 billion individual units will connect to the IoT by 2020. It's just a matter of time before users start to experience significant bottlenecks in IoT connectivity

Waiting for governmental regulation:

- While some businesses immediately embraced the IoT, others are hesitant. In many cases, these businesses are waiting for government officials to intervene with new standards and regulations.
- Although most experts agree that IoT regulation is a necessity, they have yet to formulate any standards or guidelines for the public to follow.

Students enjoyed learning about the real life, practical fundamentals of Internet of Things and Home Automation, and the industrial visit was very good.







Report Prepared by: Prof. Jyotsna More and Kaushik Jadhav (TEIT Student)