



**Report on**  
**IoT base Android application with**  
**Hardware implementation**  
**Organized by**  
**Electronics and Communication Engineering Department,**  
**Accredited by National Board of Accreditation**  
**&**  
**ISTE Student chapter**  
**Sarvajnik College of Engineering and Technology, SCET**

Two days workshop on “IoT base Android application with Hardware implementation” was organized on 30<sup>th</sup> and 31<sup>st</sup> August, 2019 by Electronics and Communication faculty members especially for the ECC students as well as other engineering branches too who can take benefit out of the said topic. This workshop was organized under the banner of ISTE Student chapter, Gujarat section. The workshop coordinators were Prof. Vandana Shah (ISTE department representative, ECC), Mr. Ankit Chudasama (ISTE member) and Miss. Anjali Gangadwala. The workshop was conducted at AV room of ECC department on first day and on second day it was at PG computer lab of ECC department.

This workshop was intended for hardware and software engineers both for generating the different applications. Moreover it could be beneficial to systems analysts, program managers and user support personnel who wish to learn the IoT. The Objectives behind the arrangement of this workshop was to understand why IoT is a useful platform for engineers, to learn how to design and program android applications using MIT (Massachusetts Institute of Technology) app inventor 2, to learn how to design backend blocks, link to cloud for data transmission.

Around 42 students of ECC department have participated. This manifested that there is a requirement of said topic in the recent technology. The first session of the workshop was information related to basic IoT and its applications in different area which was conducted by Prof. Vandana Shah. Later session was covered with the initialization process of fire based web app and MIT app, whereby students were asked to create their accounts. These were taught by Miss. Anjali Gangadwala. Initially, as a hands on exercise the students installed the Arduino IDE software. In the first half basic introduction about Arduino along with programming and coding techniques were taught. The students performed some of the basic programs themselves from the handout examples provided to them. In the second half students were taught about introduction to fire based web application. After creating their own login they have learnt to develop broadcast application. That was the great example of real time database application.

On the second day of workshop NodeMCU was introduced by Mr. Ankit Chudasama to participants. NodeMCU is the combination of Arduino and wifi module ESP8266. On base of this learning they could be able to build some basic applications on this hardware. The student made an android application for robot movement which transmitted the data according to the controllable buttons to the fire based cloud. These data were further

received by the NodeMCU which was directly connected to a motor driver to control the robot. With this support of enough knowledge many of the students have participated in technical festival Symposium 2k19 at ECC department. The event name was “App Khoj”. This has created the inspiration to take part in different events and encouraged oneself to progress.

At the concluding part of the workshop students’ feedbacks were also collected for the future scope and suggestions towards IoT Domain.

**Coordinators:**

Prof. Vandana Shah  
ISTE departmental representative  
ECC Department  
SCET, Surat

Mr. Ankit Chudasama  
ISTE member  
ECC Department  
SCET, Surat

Miss. Anjali Gangadwala  
4<sup>th</sup> Year ECC student  
ECC Department  
SCET, Surat

Dr. Maulin Joshi  
HOD, ECC Dept,  
SCET, Surat

Dr. Mehali Mehta  
ISTE Faculty Advisor,  
SCET, Surat.

Prof. Hitesh Mehta  
ISTE Secretary,  
SCET, ISTE Chapter.

### Schedule of the workshop:

#### Day-1 30/08/2019

Time	Session
9:30 am to 12:30 am	Introduction of MIT App Inventor  Developing Multiple Android Application Using MIT App Inventor
12:30 pm to 1:30 pm	<b>Lunch Break</b>
1:30 pm to 2:15 pm	Introduction of Google Fire Base Connectivity of Google Firebase and Android Application
	<b>Tea Break</b>
2:30 to 5:00 PM	Developing Android Application for controlling Robocar for Unlimited Range

#### Day-2 31/08/2019

Time	Session
9:30 am to 12:30 am	Making of Robocar with Chasis
12:30 pm to 1:30 pm	<b>Lunch Break</b>
1:30 pm to 2:15 pm	Introduction of NodeMCU Programming of NodeMCU Using Arduino IDE
	<b>Tea Break</b>
2:30 to 5:00 PM	Hardware Implementation of NodeMCU with Chasis Robocar which control by Android Application at any Range
	Feedback of participants

## **Glimpses of the workshop:**

### **Introduction of IoT by Prof. Vandana Shah**



### **Student coordinators and volunteers conducting further sessions**



**Lab session for hands on for IoT  
application by Mr. Ankit Chudasama**

**Lab session for hands on for IoT  
application by Miss. Anjali  
Gangadwala**





**Hands on practice by the participants for NodeMCU connection to robot and guidance by Mr. Ankit**



**Hands on practice by the participants**





**Group of ISTE student participants with workshop coordinators and ISTE representative**