

National education Society (R)
Jawaharlal Nehru National College of Engineering, Shivamogga
Internal Quality Assurance Cell

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Event Report

Department of Electronics and Communication

Name of the Event	<u>IoT, a hands-on approach</u>
Date of the event and venue	29th to 2nd feb 2018 and ECE M.tech. Lab(JNNCE Shimoga)
Type of the Event& Event Count	National Level Workshop& Event Count no. 01 Sem-Even Year-2017-18
Whether the event is organized in association with any institute / research organization / industry /professional society/ JNNCE Dept.(in case of inter-departmental event)	IETE & JNNCE Dept. (ECE & TCE)
Details of the funding received from associating partners	JNNCE Annexure - 1
Beneficiaries	Students
Detailed schedule with the topics covered	Annexure - 3
List of Speakers / guests	INHOUSE SPEAKERS: a)Dr.Manjunatha P. HOD, Dept. of ECE Mobile:08310036042 Manjup.jnnce@gmail.com b)Mr.Benak Patel M P Asst. Prof., Dept. of TCE Mobile:9538527538 benapk7@jnnce.ac.in

c)Mr. Sharath S M
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d)Mr. Pradeepa S C
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e)Mr. Abhijeet N
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f) Prashanth G S
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Mobile: 9008341321
prashanthgs@jnnce.ac.in

g)Mr. Vidyashankar M
Asst. Prof., Dept. of EEE
Mobile:9538839971
vsm@gmail.com

GUEST SPEAKERS:

a)Mr. Adarsh B U
Smartron, Hyderabad
adarsh.umesh@smartron.com
mobile:8309213384

b)Miss. Praneet Kaur
Smartron, Hyderabad
praneet.kaur@smartron.com
mobile:9742164842

Brief Report of the event(not exceeding 1000 words)

Enclosed as Annexure - 5

Outcome of the event

Key outcomes of "IoT, a hands-on approach" by the end of the workshop the students will be able to,

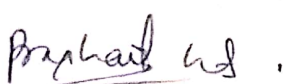
- List out details regarding different controllers/Development Boards used for IoT.
- Interface different sensors to controllers and capture real time continuous data and process data
- Interpret meaningful insights from the data



	<p>collected.</p> <ul style="list-style-type: none"> ➤ Use various cloud services. ➤ Basics of python programming. ➤ Basic knowledge about simulators. ➤ How to connects the things using internet and managing/controlling various appliances. <p>Creates new platform opportunities for the innovative students ready to build them.</p>
Photos (Max. 5) (with date and time)	Enclosed as Annexure – 6
Invitation of Inaugural & Valedictory programme / Event Brochure / Press Clippings	Enclosed as Annexure – 7
Date of Submission of the Report	Had created a blogspot on 3/3/2018 Link: http://iot29to2feb2018.blogspot.in/

Signature with date


Event Coordinator


Dept. IQAC Coordinator


HOD

Annexure – 2

Sl. No.	Name	Roll No	Sem	Branch
1.	Sowjanya Jain	4JN16EC094	3rd sem	EC
2.	Samprita V satish	4JN16EC074	3rd sem	EC
3.	Pooja K P	4JN15EC049	5th sem	ECE
4.	swathi G S	4JN15EC091	5th sem	ECE
5.	Pooja MM	4JN14EC062	5th sem	ECE
6.	Sanjay S	4JN14EC0XX	5th sem	ECE
7.	AnantrayaPrabhakarBalgi	4JN16EC006	3rd sem	ECE
8.	Sachin R	4JN16EC070	3rd sem	ECE
9.	Shivalingeshsheelavanth	4jn16TE035	3rd sem	TCE
10.	Akshaykumar H V	4jn15te003	3rd sem	TCE
11.	Nandini M	4jn15ec046	5th sem	ECE
12.	kaveri s t	4jn15ec032	5th sem	ECE
13.	Ridhi S J	4jn15ec070	5th sem	ECE
14.	Pooja Pai	4jn15ec050	5th sem	ECE
15.	Pooja S	4jn15ec0XX	5th sem	ECE
16.	Swathi S Y	4jn15ec092	5th sem	ECE
17.	Yashaswini	4jn15ec102	5th sem	ECE
18.	Ananya K	4jn15ec005	5th sem	ECE
19.	DeekshaNayak	4jn15ec018	5th sem	ECE
20.	Chandana C	4jn15ec017	5th sem	ECE
21.	geetha m h	4jn15te015	5th sem	Tce
22.	meghananr	4jn15te026	5th sem	Tce
23.	Ashika	Onspot	5th sem	Tce
24.	Srusti	Onspot	5th sem	ECE
25.	Smitha	Onspot	5th sem	ECE
26.	Ranjitha	Onspot	5th sem	ECE
27.	Ruksana	Onspot	5th sem	ECE
28.	Kavana	Onspot	5th sem	ECE
29.	Gagana	Onspot	5th sem	ECE
30.	Gouse Pasha	Onspot	5th sem	ECE
31.	Monisha	Onspot	5th sem	Mech
32.	Sanjay	Onspot	5th sem	Mech

List of students registered for the workshop

Department of ECE and TCE
Schedule for One Week National Level Workshop on "IoT- a Hands-on approach"

Internal Quality Assurance Cell

Day and Date	9.00 AM to 10.00AM	10.00AM-11.00 AM	11.15AM-1.30 PM	2.30 AM -3.45 AM	4.00 PM to 5.30 PM
29-01-2018	Inauguration	Introduction to Arduino Board, IDE (Interfacing to Computer), Programming, Setup & Simple LED programming.	Introduction to various sensors Hands on: Interfacing sensors with Arduino [IR, LDR, Gas, US, PIR, LCD, Temp, Servo motor]	Introduction to wireless communication modules. Hands on: Interfacing Bluetooth, GSM, X-bee.	Arduino using proteus simulator.
30-01-2018	Introduction to Node MCU and simple LED programs.	Hands-on: Interfacing Sensors with Node MCU.	Getting the real-time data through cloud computing Scanning of available Wi-Fi, its strength. Connecting Node MCU to Wi-Fi.	Introduction to Raspberry pi & IoT Configuring the OS for Raspberry pi.	Getting started with basic scratch programming. Basic Led program using scratch.
31-01-2018	Basics of python programming.	Hands on: Interfacing of different sensors.	Interfacing LCD, different sensors and servo motor	Using Thingspeak cloud API.	Basic Image processing using OpenCV & python programming
01-02-2018	Introduction to IoT Stack & difference in between IoT & IIoT	Introduction to IoT operating systems (Contiki, RIoT, OpenWSN & Mongoose) Introduction of research based protocols and opportunities.	Routing mechanism by RPL & 6LoWPAN protocol, routing architecture and mechanism. Creation of Mesh topology.	Hands on based on CoAP protocol and building industrial standards based applications.	Hands on based on Cooja Simulator. Building Smart mesh network using end-to-end IP based communication
02-02-2018	OpenSim simulator for IoT and 6TiSCH in amendment to MAC layer in IoT Stack.	Hands on for OpenSIM based development an IP based network.	Hands on for 6LoWPAN based mesh technology on STM devices.	Hands on for Wi-Fi end to end communication based on STM32 devices	Involvement in IIE Soc, IETF & ISOC. Opportunities in IoT industries. Contribution and research areas in IoT.

JNN College of Engineering, Shimoga
IQAC
Department of ECE

Date: 02/02/2018

Report of “One Week National Level Workshop on IoT-A hands-on approach”

The department of ECE had organized an One-week workshop on **“IoT-A hands-on approach”** for the engineering students of JNNCE, shimoga from 29-01-2018 to 02-02-2018 at ECE department.

In total 32 students of from various branches have actively participated in this workshop.

The workshop was inaugurated on 29nd of January by chief guest Sri C R Nagaraj, Treasurer of NES. Dr. P. Manjunath, HOD of ECE department explained the moto of the workshop which was succeeded over by the inspirational speech by the chief guest Nikhil N who is also alumni of JNNCE. HR Mahadevswamy, principal of JNNCE invoked about the importance of the workshop. Prof. H K Harish, chairman of IETE, shimoga center addressed all.

DAY-1: 29-01-2018

The morning session was started with the presentation by the Dr.P. Manjunatha about introduction to Microcontrollers and Sensors. Arduino board and the simple Led program in IDE was conducted by Pradeep SC and Abhijith N, Asst Prof ECE. After the introduction hands on interfacing of various sensors like IR, PIR, LDR, Gas with the Arduino board was conducted by Prasanth GS, Asst prof, ECE.

Later in the afternoon, introduction to the wireless communication modules and hands on interfacing of bluetooth, Xbee module was conducted by students of 6th ECE, Koushik R Udupa and KeerthiKashyap S. At the end of the session Kahoot! Quiz was held for the participants based on the topics covered in the day.

DAY-2: 30-01-2018

Morning session was about programming Arduino using proteus simulator by Benakpatel, Asst Prof TCE and Vidyashankar, Asst Prof, EEE. Followed by introduction to Nodemcu and simple program using it as a controller is conducted.

Then in afternoon hands on interfacing of sensor with nodemcu and followed by scanning of available WiFi and many more WiFi related programs like controlling LED through WiFi, by ECE 6th sem students. Nikitha NL, KeshavTikare, Vidyashree, Ruchika E. At the end of the session Kahoot! Quiz was held for the participants based on the topics covered in the day.

DAY-3: 31-01-2018

Morning session started with introduction to Raspberry pi and its OS configuration by Sharath SM, Asst Prof, ECE and Benakpatel, Asst Prof, TCE and getting started with the basic Scratch programs like Led programs. Followed by basics of Python programming.

In the afternoon hands on interfacing of different sensors, LCD, servo motors with Raspberry pi using python programming, followed by cloud data computing using Thinspeak cloud API was conducted by Benak Patel, Asst prof, TCE and Koushik R Udupa. 6thECE .

DAY-4: 01-02-2018

Day starts with the introduction of resource persons, Mr. Adarsh BU and Ms. Praneet and followed by their presentation on IOT stack and difference in between IOT and IIOT and they give the introduction to IOT OS (Contiki, RIOT etc.).

In the afternoon routing mechanism by RPL and 6LoWPAN protocol routing architecture and also hands on based on CoAP protocol, cooja simulator and more concepts on Networking was covered.

DAY-5: 02-02-2018

In the morning session topics like openSIM simulator for IOT, hands on for that and also for 6LoWPAN based mesh technology on SIM devices was conducted by the resource persons.

In afternoon hands on session about wifi end to end communication based on STM32 devices demonstrated till 4 pm. After completion of the sessions all the participants and coordinators planted the plants in memory of the workshop. Followed by the valedictory ceremony was held. Successfully program was ended with the distribution of certificates to all the participants and also for the student coordinators and also heartfelt honor was presented for the resource persons.

This workshop was conducted by the faculties of ECE, TCE, EEE department namely, Dr. P Manjunatha, HOD ECE, and Asst Profs. Sharath SM, Benak Patel MP, Pradeep SC, Abhijith N, Shwetha HR, Prasanth GS, Vidyashankar, Resource persons Adarsh BU and Praneet Kaur from Smartron India PvtLmt, Hyderabad and the students the 6th semester students of ECE department namely, Koushik R Udupa, Nikitha NL, KeshavTikare, KeerthiKashyap S, Sachin Kumar, Anush N L, Adarsh BP, Bhavana S, Vidyashree H R, Ruchika E, ShubhashreeNadig along with support of faculties of ECE and TCE dept.



“One Week National Level Workshop on IoT-A hands-on approach” was conducted by IETE Shimoga Centre in association with departments of Telecommunication Engineering & Electronics Engineering, J.N.N. College of Engineering, Shimoga from 29/01/2018 to, 05/02/2018