Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY
(Approved by AICTE New Delhi & Govt. of Maharashtra, Affiliated to University of Mumbai)
(Religious Jain Minority)

Department of Electronics & Telecommunication Engineering

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Report on Project based learning Program on

"IoT Application Design"

Academic Year 2018-19

Resource Persons: 1) Mr. Rather Sajad
Application Development and R&DEngineer
EdGate Technologies Pvt.Ltd
(TEXASInstruments University Program)
2) Mr. Javad Baig D
ApplicationEngineer,
Edgate Technologies Pvt. Ltd.

Program Coordinator: 1) Mr. Selvin Furtado
2) Ms. Veena Gawde
3) Mr. Mahesh C. Pawaskar

About Program: Texas Instrument Innovation centre is established at A. P. Shah institute of Technology, Thane College under "TI University Program" in July 2018.TI university program aimed at establishing a collaborative bridge between corporate and colleges with the objective of making students in the Engineering Colleges have a greater hand on experience in technologies related to embedded system, Analog system design and Internet of Thing.

Department of Electronics & Telecommunication Engineering, in association with Texas Instruments University Program conducted three days program on **"IoT Application Design"**. Main objective of this is to make Students comfortable dealing with MSP430, Tiva C, Design of Embedded server along with Internet of Things. It was organised in such way that, Students could get hands-on experience on current industry standard technologies.

Program was design in a such way that, participant would spend more 80% time for laboratory session. Participant gained valuable hands on experience with the help of relevant software and development boards. Students from the institute had participated and benefited from this workshop.

Duration: It was three days Project based learning program conducted from 29th December to 31st December 2018 for SE EXTC students.

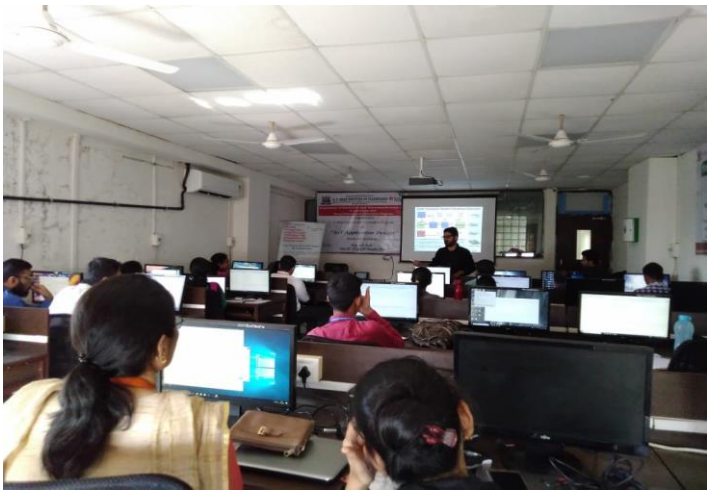
Software Tools:1) Code Composer Studio v6.1 (CCS)
2) Energia v17

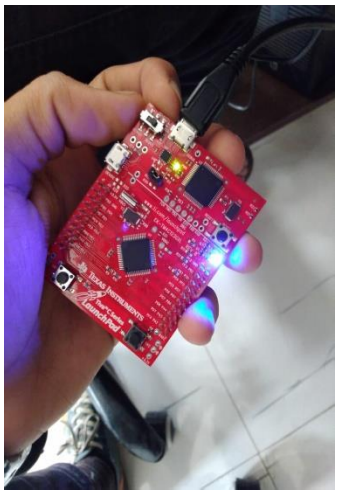
Program Schedule:

Sr. No.	9:30 am to 11:00 am	11:15 am to 12:45 pm	1:30 pm to 3:00 pm	3:15pm to 4:30 pm
1	• Introduction to MSP430 • Architecture, • Functional Block Diagram • Clock system overview	• Getting started with Code Composer Studiov6 • GPIO Configuration • **Lab**: Configure GPIO to blink LEDs and • GPIO interrupts configure button	Pulse Width Modulation Introduction to MSP430 Timers & its configuration to generate PWM signal • **Lab**: Generate PWM • signals using Timer	Getting startedwith10-bit ADC Understand single channel ADC Conversion **Lab**: Speed control ofDC motor using potentiometer
2	ARM Cortex M4 • Introduction • Architecture • Launch Pad features	Energia FrameworkOverview ofEnergia and it'sAPI usage **Lab:**Led,switch, UART,ADC, PWM Labs usingEnergia	Internet of Things • What is IOT? • TCP/IP, • CC3100 Booster-Pack • Overview	Overview of Energia Wi-Fi Libraries • **Lab:** Wi-Fi connection • acquiring IP Address,Gateway IP, • Static andDynamic IP Address
3	• Design of Embedded server • Overview of HTTP protocol • Lab: IO manipulation on • Launch Pad using Web browser	• MQTT Protocol • Basic elements of MQTT protocol. • Lab: Configure IoT • bundle as publisher and subscriber MQTT	Introduction to TI EZRF430 • Lab : Temperature sensor Network based on EZRF430 • Lab : TI RSLK Demo	Simulation & Quick Start On ASLK Pro Board • Lab: Negative • feedback Op-Amp • Lab : VCO Design

Principal Dr. U. D. Kolekar welcomesMr. Rather Sajad (EdGate Technologies Pvt. Ltd)

Principal Dr. U. D. Kolekar welcomes Mr. Javad Baig D (EdGate Technologies Pvt. Ltd)





Participants with hands-on training.