CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING
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SUMMER TRAINING ON INTERNET OF THINGS (IOT)

DURATION: 6 WEEKS (3 hrs a day)

FEE: RS. 7360/- (including taxes), can be paid in cash/debit card at CDAC, Mohali during office hours or through Demand Draft drawn in favour of "Director CDAC", payable at Mohali

ELIGIBILITY: B.E / B.TECH. 2nd OR 3rd YEAR STUDENTS

'Internet of Things' or IoT has become the next technology evolution and is bound to impact several aspects of our lives. It finds applications in diverse fields ranging from healthcare, manufacturing, construction, entertainment, education to energy conservation to name a few. This technology has a great potential for growth and has several opportunities to offer. Thus, it is very important to learn the fundamental components and applications of this upcoming technology.

Pre-requisites:- The participants should have basic knowledge of Microprocessors/ Microcontrollers and any programming language.

Objectives:-

The 6 week summer training course on 'Internet of Things' is structured to enable the participants to:-

- Learn about fundamentals of IoT, opportunities & challenges in implementing IoT solutions.
- Integrate hardware and software components required for acquiring the sensor data and deploying it over the cloud platform using SimpleLink Wi-Fi IoT Development kits.
- Design & Develop simple IoT Applications.

Course Contents:

Day/Week	Topic
Week1	
Day 1	C programming:- Basic Data Types and Looping
Day 2	Arrays in C
Day 3	Handling Functions
Day 4	Pointers in C
Day 5	String Handling
Week 2	
Day 1	Overview of IoT and its roadmap, opportunities and challenges in IoT & Introduction to SimpleLink MSP432P401R LaunchPad
Day 2	GPIO Programming & Interrupt Handling
Day 3	LCD Interfacing
Day 4	UART Programming
Day 5	Introduction to Energia IDE and ADC Interfacing
Week 3	
Day 1	GPS Interfacing
Day 2	Introduction to Wi-Fi IoT kit CC3200 Launchpad & its working in Access Point & Station Modes
Day 3	Working with onboard sensors & HTTP web server creation
Day 4	Working with Choreos from Temboo server and sending an email alert
Day 5	Working with Nexmo server and sending a phone call alert

Week 4	
Day 1	Working with Twilio server and sending a SMS alert
Day 2	Working with Things Speak Cloud Server
Day 3	Working with AT &T Cloud for map visualisation
Day 4	Working with Pub Nub Cloud Server
Day 5	Evaluation Test
Week 5 & Week 6	***Project Work***

Outcomes:- On the completion of the course the students would gain:

- Ability to use Wi-Fi certified IoT kit -TI CC3200 Launchpad & Ultra low-power MSP432P401R Launchpad.
- Knowledge and skills to build applications in IoT fields such as: cloud applications, smart surveillance, automated transportation, home automation, smart energy management, and security.
- Skills to implement IoT concepts and technologies to create and test end-to-end IoT system.

HOW TO APPLY: For Admission, submit your College reference/training letter, copy of college ID card, admission form (download from www.cdac.in) along with full fee at CDAC, A-34, Phase 8, Industrial Area, Mohali .

NOTE:

- **Seats are limited and admission is on first come first serve basis.**
- **75% attendance is must for award of certificate.**