A Report on

PCB Unplugged : A Hands - on session

Organized by:

Electronics and Communication Engineering Department

(Re-Accredited by NBA, New Delhi for 3 yrs, w.e.f 1st July 2022)

Sarvajanik College of Engineering and Technology, Surat

Date: 20-07-2024

Time: 9:30 to 12:30

Venue: AV Room, ECE Department, SCET

Student Coordinators: Shruti Savani & Drashti Domadiya

Faculty Coordinators: Prof. (Dr.) Nehal Shah

Participants: Total 107 students participated in the event and 42 groups were formed.

31 – IETE members
76 – Non members

Out of 107,
30 – 1st year Electronics, 35 – 2nd year Electronics,
10 – 3rd year Electronics, 16 – 4th year Electronics,
4 – Chemical Engineering, 3 – Textile Technology,
6 – Computer Engineering, 1 – Instrumentation and Control
2- Information Communication Technology

Speakers:

- **Er. Harshad Italiya**
  (Co-Founder, Energy Cloud Technology)
- **Er. Parth Patel**
  (Sr Embedded Developer, Energy Cloud Technology)
- **Er. Akash Rudani**
  (Sr Embedded Hardware Developer, Energy Cloud Technology)
- **Er. Tilakkumar Miyani**
  (Embedded Hardware Developer, Energy Cloud Technology)

About Event:

PCB Unplugged: A Hands-on Session was a unique event organized by the SCET IETE Student Forum (ISF) at Electronics and Communication Department of Sarvajanik College of Engineering & Technology, Surat, with Energy Cloud Technology in association with IETE Surat subcenter. The event aimed to provide students with a comprehensive understanding of KiCad software, a free and open-source Electronics Design Automation (EDA) suite.

The primary objective of the event was to provide students with a hands-on experience of KiCad software, enabling them to design their own PCBs and understand the practical applications of the software in the industry. During the event, Mr. Harshad Italiya gave a presentation on designing a PCB from scratch using KiCad software, which included a live demonstration of the entire design process.

Total 107 students participated in the event and 42 groups were formed. The event attracted enthusiastic participation from various branches of Engineering like Electronics and Communication, Computer, Information and Communication Technology, Instrumentation and Control, Chemical, and Textile Technology, with many of them showing keen interest in learning more about EDA.

Schedule of the Event:

- 9:00 am - 9:30 am: **Registration and Welcome**
    - Welcome address by the faculty coordinator, Dr. Nehal Shah
- 9:30 am - 10:30 am: **Introduction to KiCad Software** by Er. Harshad Italiya
    - Presentation on KiCad software and its applications in PCB designing
- 10:30 am - 11:15 am: **Live Demonstration of PCB Designing using KiCad software**
    - Participants observe and take notes on the design process
- 11:15 am - 12:00 pm: **Hands-on Session**
    - Participants work in a groups to design their own PCBs using KiCad software
    - Assistance provided by the Energy Cloud Technology team
- 12:00 pm - 12:30 pm: **Doubt Clearing and Q&A Session**
    - Discussion on common challenges and best practices in PCB designing
- 12:30 pm: **Conclusion followed by Refreshments**
    - Closing remarks by the faculty coordinator, Dr. Nehal Shah

Highlight of the Event:

Participants were able to

- Witness a live demonstration of PCB designing from scratch
- Use KiCad software and identify how components are placed on PCB
- List steps of PCB designing
- Design PCB for given circuit and got hands-on experience with KiCad software

Live Demonstration:

In this session, experts from Energy cloud covered designing of a PCB from scratch using electronics design software KiCAD. Following design steps were demonstrated in detail.

1. **Schematic Design**: Creating a new project and designing a diagram showing how the electronic components can be connected.

2. **Adding Footprints**: Assigning symbols to components and creating a list of connections between them.

3. **PCB Routing**: Laying out the PCB design and optimizing it for manufacturing.

4. **3D Visualization**: Viewing the designed PCB in 3D to check for any design flaws or errors.

5. **Generating Gerber Files**: Creating files that could be used to manufacture the PCB.

Content beyond syllabus:

The event provided students with hands-on experience and knowledge of EDA, which is not typically covered in the regular syllabus. The presentation and demonstration helped students understand the practical applications of EDA and its relevance in the industry. The event was successful in providing students with a comprehensive understanding of KiCad software and its applications in PCB designing. The live demonstration and doubt clearing session helped students clarify their queries and gain confidence in using the software. The feedback from students was positive, and the event was well-appreciated by all participants.

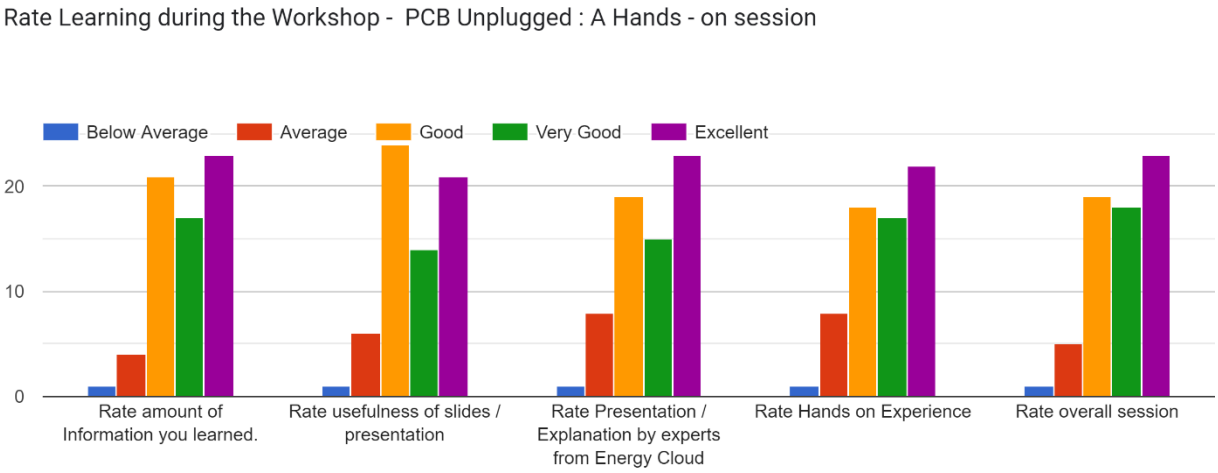
Major Outcome:

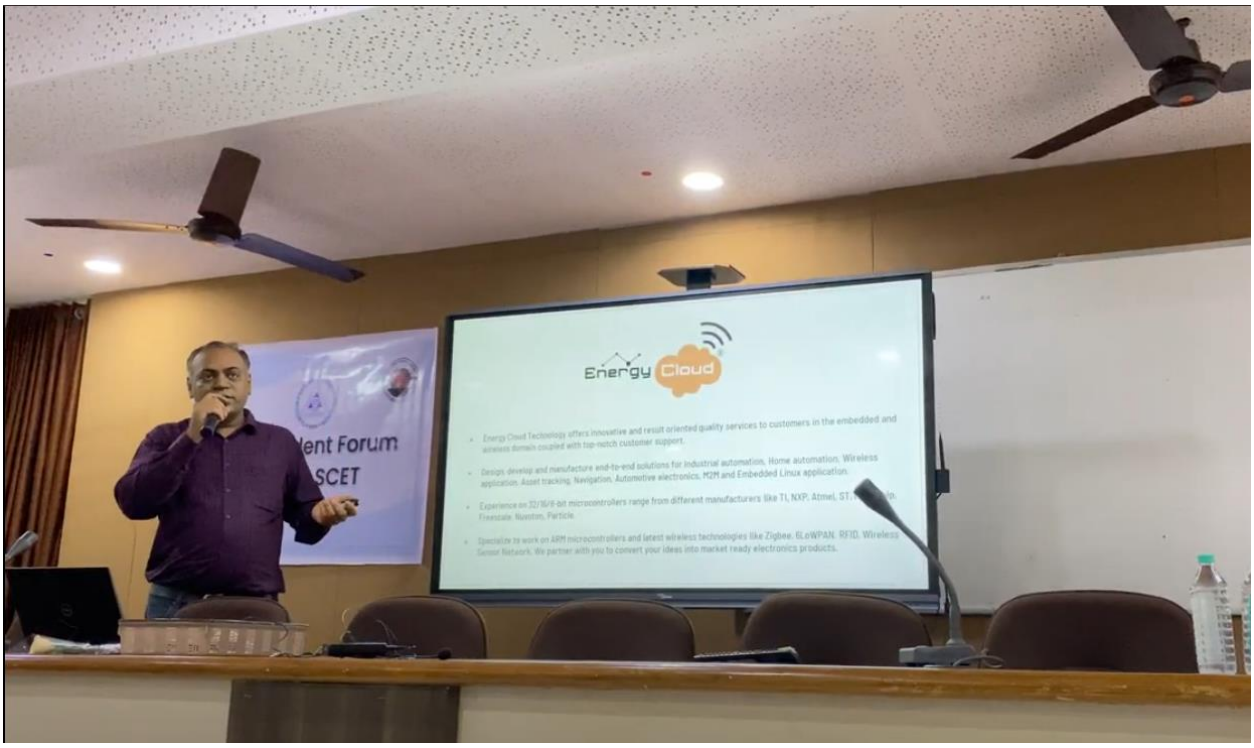
The event was successful in providing students with a comprehensive understanding of EDA and its applications in PCB designing. The live demonstration and doubt clearing session helped students clarify their queries and gain confidence in using EDA.

Additional highlights:

- The event saw an enthusiastic participation, with many of them showing keen interest in learning more about EDA.
- The speaker's industry experience and expertise added value to the presentation, providing students with a unique perspective on EDA.
- The event provided a platform for students to network with the speaker and other participants, potentially leading to future collaborations and opportunities.
- The event was well-organized, with all logistical arrangements in place, ensuring a smooth and seamless experience for all participants.

Feedback from Participants




Energy Cloud
Energy Cloud Technologis offers innovative and result oriented quality services to customers in the embedded and wireless domain coupled with top-notch customer support.
Design, develop and manufacture end-to-end solutions for Industrial automation, Home automation, Wireless application, Asset tracking, Navigation, Automotive electronics, M2M and Embedded Linux application.
Experience on 32/16/8-bit microcontrollers range from different manufacturers like TI, NXP, Atmel, ST, Freescale, Nuvoton, Particle.
Specialize to work on ARM microcontrollers and latest wireless technologies like Zigbee, 6LoWPAN, RFID, Wireless Sensor Network. We partner with you to convert your ideas into market ready electronics products.


Introduction of

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Speakers

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Energy Cloud Technology

Tilakkumar Miyani
Embedded Hardware Developer
Energy Cloud Technology

Rules

- Maximum 4 students in a group.
- One laptop needed per group.

Student Coordinators

Shruti Savani 9537653793

Drashti Domadiya 7434053300

Faculty Coordinator

Dr. Nehal Shah

HOD

Dr. Chirag Paunwala

Kindly Scan For Registration...

Fees

- For IETE Member = NO FEES
- For Non IETE Member = 50 RS

(Includes Refreshment & Certificate)

Date

20/07/2024

Time

9:30 to 12:30

Venue

AV Room EC Dept, SCET