Report on Hands-on Workshop on ARM Microcontroller

Workshop Details

Date: 29 January 2025
Time: 3:00 PM to 5:00PM
Venue: Chanakya hall, EED, LDCE
Speakers: Dr. K.A. Bhatt
                 Prof. F.A. Macwan

Introduction

The IEI Students' Chapter effectively conducted a Hands-on Workshop on ARM Microcontrollers, designed to equip participants with a comprehensive insight into microcontroller technology and its real-world uses.

The session began with an opening speech and a prayer, setting the stage for an informative learning experience. Following this, Dr. K.P. Badgujar delivered a speech in which he appreciated the initiative and emphasized the importance of the ARM microcontroller, among other key insights. Subsequently, the speakers, Dr. K.A. Bhatt and Prof. F.A. Macwan, were introduced to the participants.

Technical Session

Prof. Macwan began the workshop by presenting ARM microcontrollers, helping participants understand their importance and uses. The session continued with a summary of Arduino and its different versions, such as Arduino Nano, Uno, and Mega. Highlighting the significance of choosing the appropriate microcontroller for specific uses, the speakers also presented IoT-oriented microcontrollers like ESP32 and Raspberry Pi.

A thorough comparison of Arduino and ARM microcontrollers was provided, including real-life examples to showcase their similarities and differences. The design of these controllers was reviewed, alongside a summary of the structure of Arduino programming. The session also explored strict typing coding standards, the significance of camel case, and the parallels between Arduino programming and C/C++.
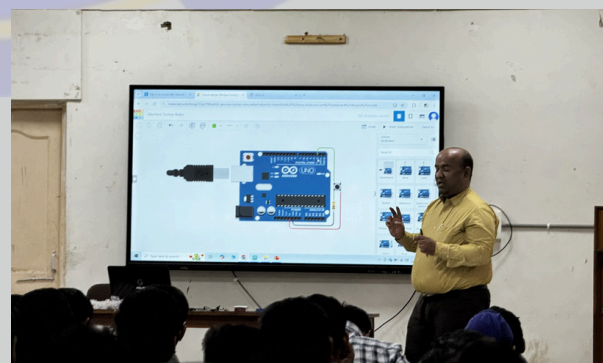
Participants were subsequently introduced to TinkerCAD, an online simulation platform that allows users to experiment with various codes and features without needing actual hardware. An illustrative example was shown, highlighting how two Arduino boards can be set up to tally the individuals who enter and leave a room.

The session ended with a recap, an engaging Q&A session, and a quiz to reinforce essential concepts.

<u>Engaging Learning & Practical Workshop</u>

After the technical discussions, a practical workshop took place, allowing participants to use their theoretical understanding in a real-world environment. With the direction of Prof. Fedrik Macwan, Dr. K.A. Bhatt, and the IEI core team members, students were split into teams of ten. Every group was granted sufficient time and individual guidance to engage with Arduino and ARM microcontrollers, reinforcing their comprehension through hands-on experimentation.

Conclusion

The workshop offered attendees an extensive understanding of microcontroller technology, combining theoretical knowledge with practical experience. The hands-on method, along with professional advice, guaranteed that participants achieved a more profound comprehension of Arduino, ARM microcontrollers, and IoT applications.

The event ended on an extremely positive note, equipping participants with improved technical skills and practical knowledge, solidifying the IEI Student's Chapter's dedication to promoting innovation and technical excellence.

Analysis of Participants' Feedback

Designation of Participant
31 responses
- Faculty
- Student
100%

Have you understood the session outlines and aquired basic and practical knowledge about IoT(Internet of Things)
31 responses
- Yes
- No
100%

Feedback about this Session
31 responses

	1	2	3	4	5
	0 (0%)	0 (0%)	0 (0%)	5 (16.1%)	26 (83.9%)

Is the duration of session is aligned with productivity of participants?
31 responses
- Yes
- No
100%

Rate the speaker
31 responses

	1	2	3	4	5
	0 (0%)	0 (0%)	0 (0%)	3 (9.7%)	28 (90.3%)

Would you be interested in attending similar seessions in future?
31 responses
- Yes, I found it valuable.
- Maybe, depending on the topic.
- No, I'd prefer something different
93.5%

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