GUJARAT TECHNOLOGICAL UNIVERSITY

Open Source Board Workshop

Arduino Board 14- Sept -2015

Raspberry Pi Board 15 - Sept -2015

CiC3

2015

Venue : -

Community Innovation & Co-Creation Centre
Room No: 128, Gujarat Technological University,
Ahmedabad Campus,

Prepared By : Prof. Raj Hakani (ap_raj@gtu.edu.in)

Gujarat **T**echnological **U**niversity's **C**ommunity **I**nnovation **C**o-Creation **C**entre (**C-i-C3**) organized a workshop "Open Source Board" on 14th and 15th Sept 2015. Explore the world of Electronics right from the beginning. Here is a chance to learn the basics of open source boards such as Arduino and Raspberry Pi.

Open Source Board - Arduino on 14th Sept - 2015

The aim of this workshop was, to provide brief knowledge about Arduino Board and introduce Arduino Community to students and let them learn Arduino in Hands-on session.

The workshop began with a welcome address and introduction of **CiC3** to student by **Prof. Tosha Shukla**

Prof. Raj Hakani, gave introduction of different open source boards and briefed about open source community. The journey of Microprocessor and Microcontroller was explained to students with different examples of application and assembling of programs of processors and controllers.

He introduced different components of Arduino. He demonstrated the Arduino software installation and described how the software works with the Arduino board. The whole of the session was Hands-on practical where students were given Arduino boards and other hardware to perform practical.

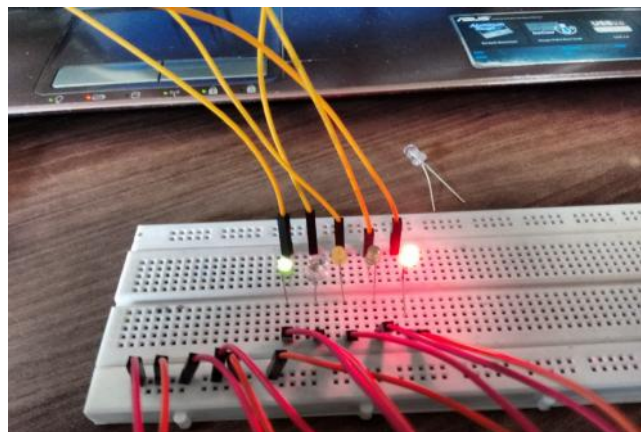The following topics were covered in the Hands-on workshop:

- ➢ Introduction to Microcontroller
- ➢ Difference between µC & µP
- ➢ Arduino basic
- ➢ Arduino Board Layout & Architecture
- ➢ Programming fundamental
- ➢ Interfacing LED with Arduino

Student performed programming over the Arduino circuit for LED connection and Make Various LED Patterns, How to optimize code as well as made few project based on LEDs.

They are generate few LED pattern like (i) ODD/EVEN (ii) Sequence (iii) Sum of 5 LED Pattern (iv) Division by 3 Pattern (v) Pascal Triangle Coefficient Patten etc...

After Completion of Pattern Generation they made simple project on **"Traffic Light Control"** using LEDs

Photograph of Open Source Board - Arduino

Open Source Board - Raspberry Pi on 15th Sept - 2015

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is a capable little device that enables to explore computing, and to learn how to program in languages like Scratch and Python. It is capable of doing many things, we would expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spread sheets, word-processing, and playing games.

This Session also began with a welcome address and introduction of **CiC3** to student by **Prof. Tosha Shukla**

Prof. Raj Hakani, gave introduction of ARM Processor, architecture of ARM 11, Introduction of Operating System and OS for Raspberry - Pi.

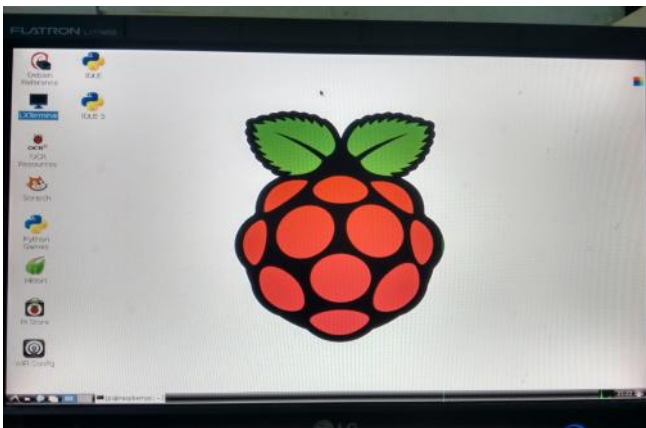The following topics were covered in the Hands-on workshop:

➢ Introduction to Linux
➢ Introduction to Raspberry-Pi
➢ Operating porting
➢ Basic commands of Linux
➢ Shell scripting
➢ Python programming
➢ Scratch programming
➢ Gpio programming and script
➢ Python Gpio programming

The workshop included a demo of some of the capabilities of the Raspberry Pi as well as a hands-on session on using Scratch, Python to build a small animated games and videos. In the workshop student are able to make their own animated Video Game

Photograph of Open Source Board - Raspberry - Pi

Feedback

Arduino - 14th Sept

➢ The workshop of 'ARDUINO' is very helpful to me for learn basic about arduino and i wish that type of workshop can arranged also in future.

- Dhanani yatish,   Merchant Engineering College

➢ It was really nice and very much helpful as I was not knowing anything about both the kits so it helped me a lot thank u so much for this type of workshop

- Femmy Nanwani , Universal College Of Engg.N.Tech

➢ Thank you for increasing my knowledge to all cic3 staff. When I was not attended this workshop ,I don't know about what is workshop and ardiuno. in this w.s i know about what is a gtu ?, what do gtu ? And how can take all information about my study. I attend this workshop my confidence is full.when I attend this w.s. I feel that in my 1st sem. learn all subjects in one workshop . again thank you for invited me w.s .

- Shubham Bharwad, AIT

➢ It helped me gain primary knowledge about Arduino. Being a semester -1 student, this workshop opened up a new thought process.

- Prachi Desai , LDCE

➢ A great starting for build future engineers having technological knowledge.....
Hads off to the team of gtu cic3...

-SHAH HITGNAKUMAR, SAL Engg. College

Raspberry Pi - 15th Sept

➢ Workshop was very good as the faculty members had guided students in an effective way.

- PRAGYA CHAUHAN, VGEC

➢ This was the best workshop I've ever attended. It boosted the dream inside me to become an entrepreneur to a new level. Thank you for inviting me in this seminar. I would be happy to get more invitations from you.

- Harit K Zala, Darshan Institute of Engineering & Technology

➢ Many new things came to know about Like raspberry-pi and to its application I would still like to know about it if you give me a chance to attend the advance raspberry-pi workshop And thanking you from center of my heart that you arranged such workshop so that not only BE students but diploma students can also know about it.

- JOY JACOBGP GANDHINAGAT

➢ It was very helpful...but need more of these to be taught sk that we can explore more about these circuit boards

- Yash Date, Babaria Institute