Hands on Practices in Arduino Board

Organized By,

Information Technology Department

Birla Vishvakarma Mahavidhyalaya

VV Nagar

Coordinators,
Vatsal Shah, Kanu Patel
Assistant Professor,
IT Department,
BVM Engineering College

Details about Workshop

Subject	:	*Arduino Programming*
How it will be useful to student	:	*Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing.*
What skill will be developed	:	*Programmin Skill will be developed. They will read data from board,on sensor and social network.*
Branch	:	*Information Technology*
Year	:	*3rd Year*
Date	:	*9th February 2019*
Time	:	*9:00 am to 3:00 pm*
Venue	:	*B401, B-Block BVM Engineering College*
Entries	:	*24*
Faculty Coordinator	:	*Prof. Vatsal Shah & Prof. Kanu G Patel*
Head of Department	:	*Dr. Keyur Brahmbhatt*
Expert	:	***Prof. Dhaval Tailor*** *Asst. Prof., EE Dept., ADIT*

Coverage of Workshop

On date 9th February, 2019 IT department of BVM organized one day workshop on "**Hands on Practices in Arduino Board** ". Workshop was conducted by two experts Dhaval Tailor, Assistant Professor at Electrical Department; ADIT College. Around 24 students from 3rd level IT branch took part in this workshop. Main focus of the workshop was to do hands on practical with Arduino uno board. Arduino is an open source development board used by developers and hobbyist for creating projects and prototypes. Arduino has vast collection of supporting libraries developed by open source users across the world. Learning this platform might help students in rapid prototype development their project. Keeping these facts in mind content of workshop was designed and delivered.

In the first session students got familiar with various development boards of Arduino and learnt the development environment for Arduino. Working with Arduino I/O pin was taught initially and students run small practical like blinking LED, interfacing Pushbutton switch. Later important concept of debounce was covered and practical implementation for switch debounce logic was performed. In the second session after lunch Infrared LED based human entry door counter was implemented. Students learnt to interface 16x2 lcd with Arduino and displayed various data on display. Working with Analog pins was also covered in second session in which students perform analog to digital conversion and accordingly set the brightness of LED. Than Pulse Width Modulation feature was covered and students implemented fading of LED and speed control of motor. Relay concept was demonstrated by experts and students learnt to control home appliances via Arduino. Students also learnt to work with infrared remote and emulated working of Projector IR remote. Using Ethernet Shield of Arduino webserver was created and through local network demo of controlling home appliances was shown. So students learnt to implement simple practical of implementing IoT.

Overall student learnt the basics of working with Arduino and gained basic knowledge of various Arduino development boards; Programming environment;

onboard features of Arduino Uno: I/O, Analog, PWM; Arduino shields and IoT using Arduino. Feedback students was collected and it suggested that they welcomed this initiative and they are motivated to explore more dimension in this platform also they are willing to use this board in their projects in future.

Workshop Glimpses