Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY
(Approved by AICTE New Delhi & Govt. of Maharashtra, Affiliated to University of Mumbai)
(Religious Jain Minority)

Department of Electronics & Telecommunication Engineering

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Date: 24th, 25th & 26th June 2019

Report on

"Embedded Automation"

Under Project Based Learning

Resource Persons & Coordinator

1) Prof. Selvin. V. Furtodo[1]
2) Prof. Adesh C. Hardas[1]
3) Prof. Mahesh C. Pawaskar[1]

[1] Asst Professor, Dept. of Electronics & Telecommunication Engg.
A. P. Shah Institute of Technology, Thane.

Venue: 410 (Computer Laboratory)
Date: 24th, 25th & 26th June 2019
Time: 10:00 am to 4:00 pm
Total number of attendees: 24

About Program:

Over the years, Arduino development board is playing vital role in thousands of electronics, mechanical & automation applications. It has simple and accessible user interface. In order to make the students familiar with Arduino, department of Electronics & Telecommunication engineering department conducted a three days' technical workshop on "**Embedded Automation**", in co-ordination with IETE student chapter.

The main purpose of this workshop was to provide the fundamental knowledge of Arduino development board with hands on practice. Arduino is an open source development board used by developers and hobbyist for creating projects and prototypes. Arduino has large collection of supporting libraries developed by open source users across the world.

The workshop was conducted by faculties of Electronics & Telecommunication department, Prof. Selvin Furtado, Prof. Adesh Hardas & Prof. Mahesh Pawaskar. More than twenty sensors and peripherals components were introduced along interfacing and programing. Participant gained valuable hands on experience with the help of relevant software and development boards.

Some of the major peripherals' components listed below:

1. Bluetooth (Wireless-Android Phone).
2. Digital input, interfacing input devices like Button, Proxy Sensor,
3. Digital output, interfacing devices like LED, Buzzer,
4. Analog input, interfacing devices like potentiometer, LM-35, Thermistor, LDR, Joystick.
5. Analog output (PWM), interfacing devices like Servo motor, LED brightness control, DC motor speed control.
6. Other Sensor interfacing / Library management: Ultrasonic

Software Tools: Arduino IDE 1.8.9

Workshop Schedule:

Time	24th June 2019	25th June 2019	26th June 2019
10: 00 am to 12:30 pm	• Introduction on Arduino • Arduino Nano pin-out • Arduino IDE • LED	• Analog Read • Analog Write • LM35 • Joystick • LED brightness • Servo motor • Etc. allied sensors	• DHT11 • Ultrasonic • MQ2 Gas sensor • Real Time Clock • Peripheral Communication
1:00 pm to 4:00 pm	• Serial communication, • Maths library, • Programing for the same	• Digital Read • Digital Write • Button • Buzzer • Etc. allied sensors • LCD 16x2 • 4x4 Matrix keypad	• Sensor Limitations/ comparison. • Student doubt clearing and interaction

Pictures Gallery:

Figure 1: Prof. Selvin Furtado addressing the participants, while Prof. Adesh Hardas preps for the next activity.

Figure 2: Participants engrossed in the workshop.

Figure 3: Principal, Dr. U. D. Kolekar awarding certificate to participants.

Figure 4: Vice Principal and HoD (EXTC), Prof. A. M. Deshpande awarding certificate to participant.

Figure 5: (Seating, from left to right) Prof. Mahesh Pawaskar, Prof. Selvin Furtado, Prof. (Dr.) U. D. Kolekar, Prof. A. M. Deshpande, Prof. Adesh Hardas, with participants of the workshop standing in the background.