A brief report of a Three Day workshop on "Arduino Uno Practice and Simulation with Tinker cad" organized by Instrumentation and Control Engineering Department on 28ᵗʰ & 30th July, 2022 (Thursday to Saturday)

A **Three Day** workshop on **Arduino Uno Practice and Simulation with Tinker cad** was organized by **Department of Instrumentation and Control, SCET** on 28ᵗʰ & 30ᵗʰ **July, 2022.** The workshop was organized for diploma and Engineering students. 18 students actively participated in the workshop.

 Over the years, Arduino have been the brain of thousands of projects, from everyday objects to complex scientific instruments due to its simple and accessible user interface. In order to make the students acquainted with Arduino Uno, Instrumentation and Control department conducted a technical workshop on programming Arduino Uno. Tinkercad software allows you to test the Arduino code without any hardware or circuit design and its free version is also available. Below there are some features this simulator provide to its users: You can use it as a demonstration tool to present your Arduino project. Tinkercad by Autodesk is an online circuit design and simulation tool. It allows you to create your arduino based preoject that can then be downloaded in arduino hardware

The main objective of this workshop was to provide the fundamental knowledge of Arduino uno Processor with hands on practice. The topics covered in the workshop include – Hardware and Software Programming. The outcome of the workshop was in the form of implementation of a sample working project.

The inaugural ceremony of the workshop witnessed the presence of **Dr. Brijesh Naik, In charge HOD IC Engineering, SCET ,** along with the faculty and staff members of Department of Instrumentation and Control department.

 It was a 3 day workshop where everything from basics to the fundamentals was taught to the students.
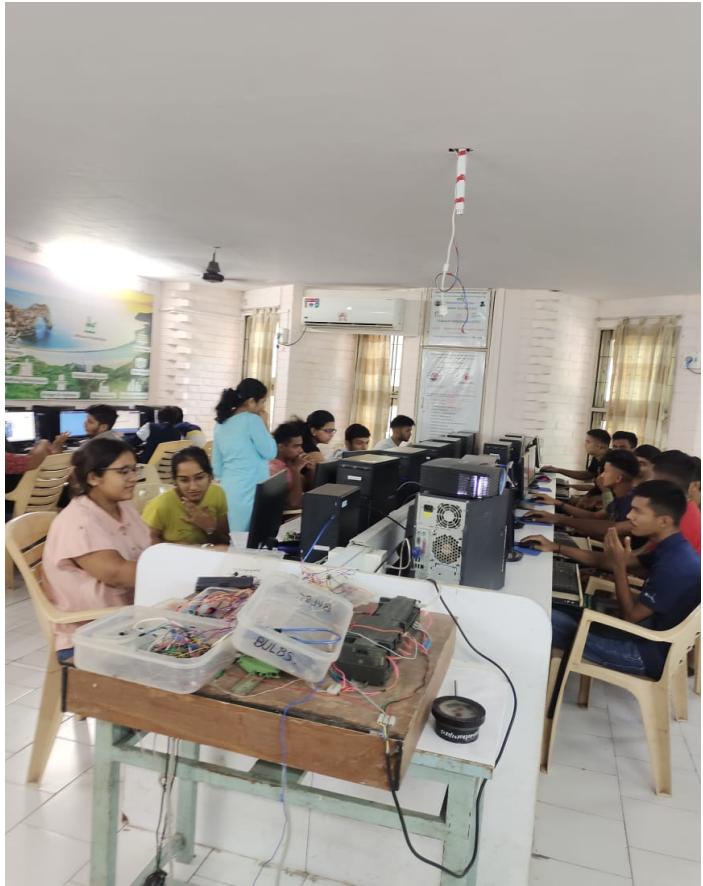
 On the first day, **Prof. Bhavina Patel** started the event workshop by giving brief description of the components which will be used during the workshop along with the basic coding required for coding Arduino UNO in Tinkercad software and also explained hands on practical's. Basic digital input and output and anlog input and output interfacing, display devices interfacing was taught to the students. In this, She showed them how we can control the switches led, LCD, potentiometer, PWM generation and serial communication ,DC motor using Arduino Uno board. Prof. Brijesh Naik explained all basic C language commands. In this he showed them how we can implement IF-else loop, FOR loop and While loop in the Arduino Uno board with the help of peripherals like switches, LED and LCD.

 On the second day, **Prof. Jayana Rana** taught the students how to interface Temperature, ultrasonic distance and motion sensor with arduino in tinkercad and explained hands on practical's. This knowledge will help the students to create mobile based smart home and agriculture application. Prof. Brijesh Naik explained DC motor speed control with encoder, forward and reverse movement control of DC motor and water flow control using submersible pump.

On the third day, **Prof. Vandana Shah** taught the students how to make an automatic irrigation system using Arduino Uno. Students were able to control the humidity of soil with the help of humidity and

temperature sensor. With the help of this workshop, we have tried to instill a basic knowledge of Arduino to the students which will be very useful to them for their future projects **Prof. Vandana Shah** taught the students how to make an automatic irrigation system using Arduino Uno. Students were able to control the humidity of soil with the help of humidity and temperature sensor and submersible pump. **Prof. Bhavina Patel** explained IR sensor and LDR sensor for on-off application. With the help of this workshop, we have tried to instill a basic knowledge of Arduino to the students which will be very useful to them for their future projects.

Event Photographs