DEPARTMENT OF ELECTRONICS AND COMMUNICATION

ONE DAY WORKSHOP ON ARDUINO BASICS-1

Date: 3/07/2021

Resource Person: Mr. Harish L

Asst. Prof, Dept of ECE

ACSCE, Bangalore

Participants: 4th and 6th Semester Students

The One day workshop on"ARDUINO BASICS-1" was conducted by the Mr. Harish L. Mr. Harish Lis a academician as well as an industry-oriented coding expert with over 10 years of experience in the field of teaching and industry.

Mr. Harish L started the workshop by emphasizing the importance of Arduino and its applications in day-to-daylife.Arduino is open-source electronics prototyping platform based on flexible,easy-to-usehardware and software.It'sintendedforartists, designers,hobbyistsand anyone interested increating interactive objects or environments.

Arduino is an open-source programmable board. It is very easy to use and powerful single board computer that has gained considerable traction in the hobby and professional market. It consists an Integrated Development Environment (IDE) where one can write and run the programs and these programs are known as sketch in Arduino and a microcontroller. 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.

Why Arduino?

Arduino provides many types of boards which are useful for various applications.

Arduino also provides its own IDE (Integrated Development Environment) which is free to download from Arduino's website and use.

Many libraries are provided with the software and a large number of libraries developed by people from around the world are available for free. The functions implemented in these libraries can be used for quick development purposes.

This allows the user to use certain interfaces or modules without having in depth knowledge about the internal structure or working.

The point is that lack of technical or coding knowledge should not become an obstacle for development or creative thinking.

They also offer a number of expansion boards (or shields as they call them) which can be plugged into their boards and used.

All of these enable fast and easy development.

Arduino Uno (R3)

The Uno is a great choice for your first Arduino. It's got everything you need to get started, and nothing you don't. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a USB connection, a power jack, a reset button and more. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

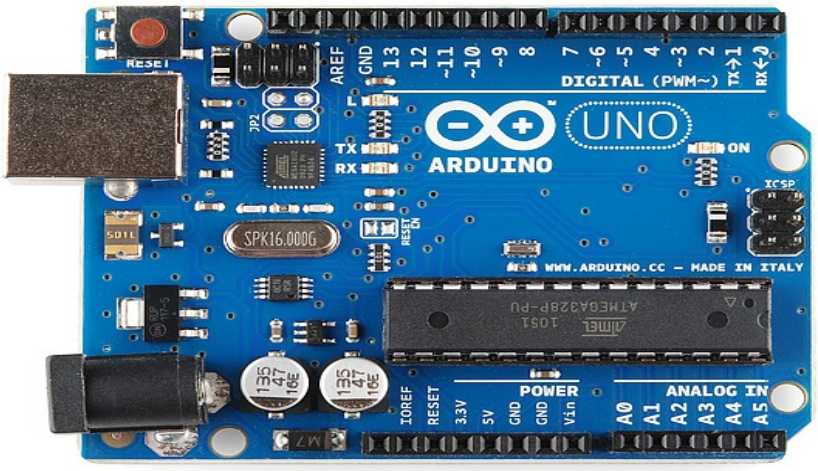


Fig 1: Arduino UNO Board

Basic Coding Structure

- Programs written using Arduino Software (IDE) are called **sketches**.
- These sketches are written in the text editor and are saved with the file extension .ino.

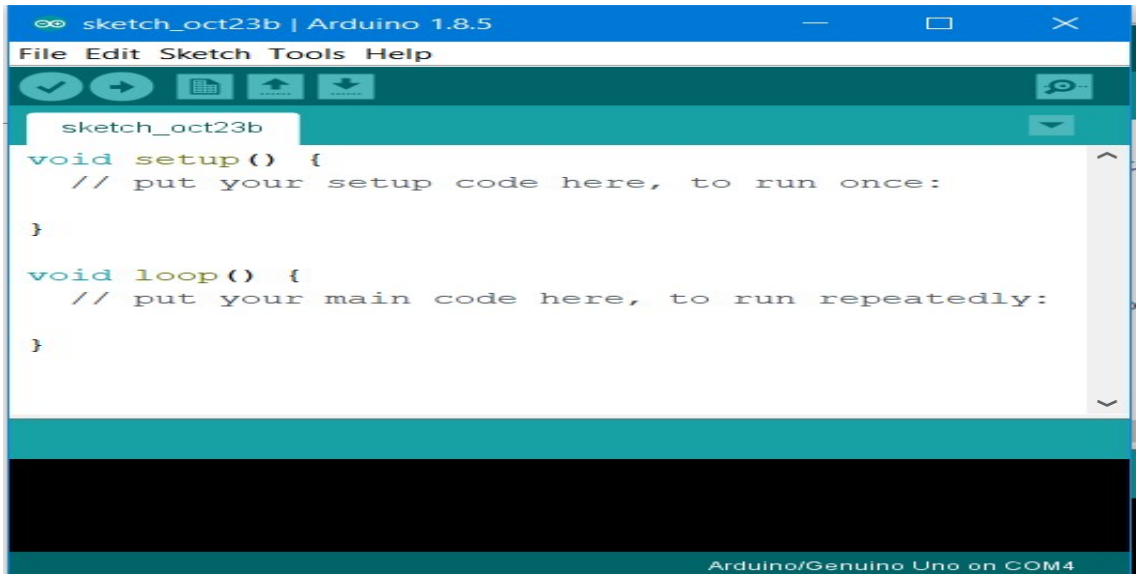


Fig 2: Structure of Arduino Program

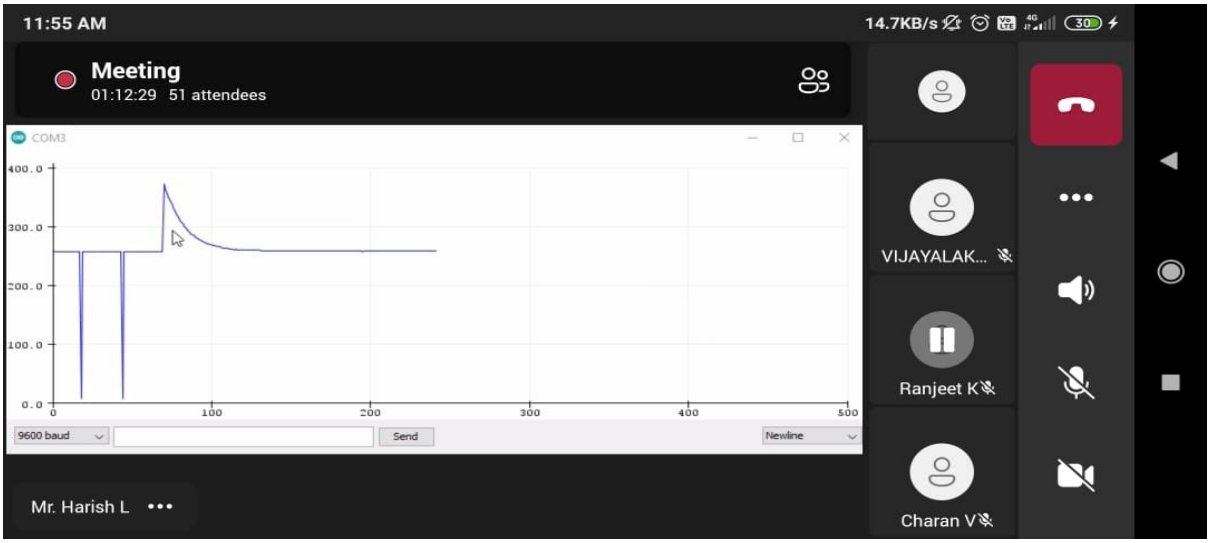
LED Blinking program

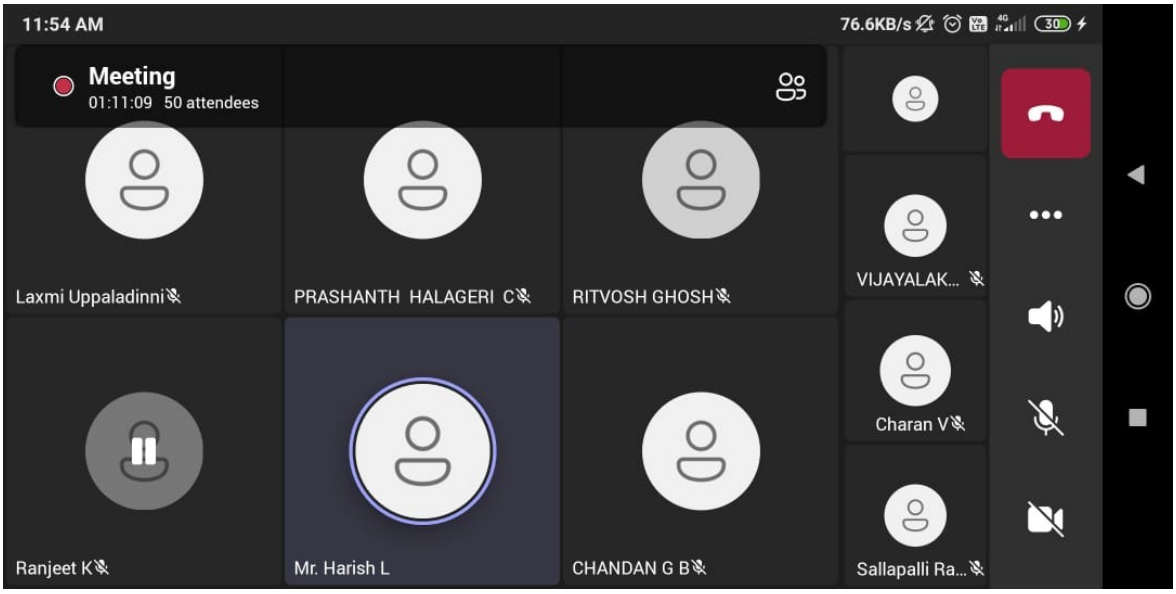
```
int LED = 13;
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);                       // wait for a second
  digitalWrite(LED, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);                       // wait for a second
}
```

Fig 3: LED Blinking program

WORKSHOP INVITATION:

SNAPS FROM SEMINAR

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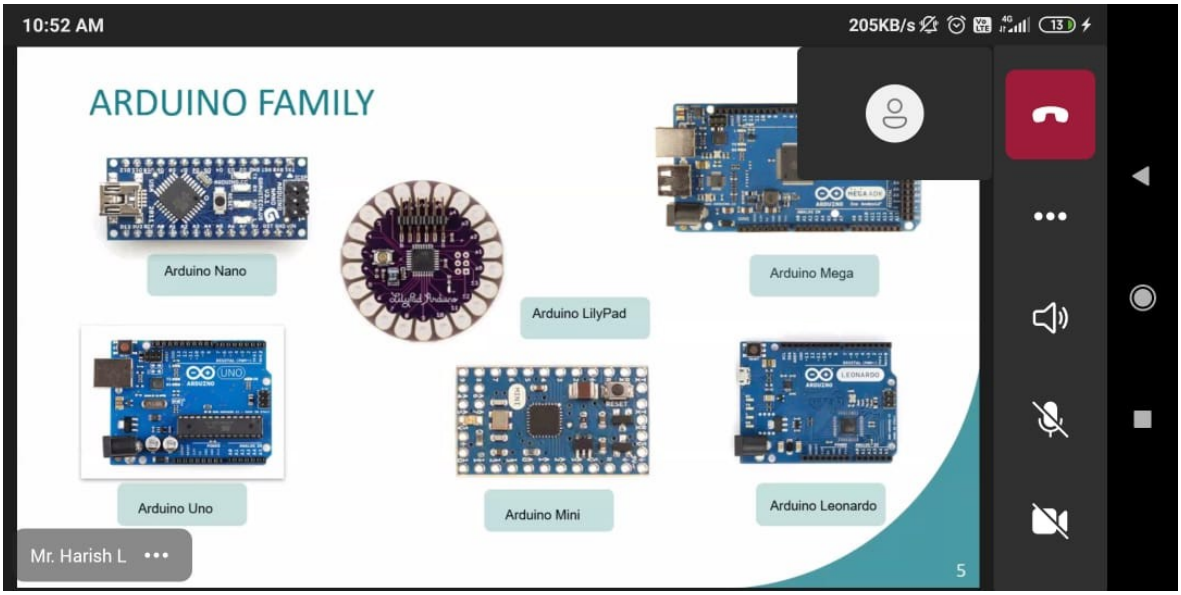
RITVOSH GHOSH
VIJAYALAK...
Charan V
Ranjeet K
Mr. Harish L
CHANDAN G B
Sallapalli Ra...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ARDUINO FAMILY
Arduino Nano
Arduino LilyPad
Arduino Mega
Arduino Uno
Arduino Mini
Arduino Leonardo
Mr. Harish L
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