

Date: June 02, 2022

**A one day online workshop on “Internet of things”  
under Learn Tech with NMIMS  
(May 23, 2022)**

Coordinator	:	Dr. Suresh Kurumbanshi (Assistant Professor, EXTC Dept., MPSTME Shirpur)
Organized by	:	Department of Electronics & Telecommunication Engineering, SVKM’s NMIMS, MPSTME, Shirpur under Learn Tech with NMIMS, Shirpur
Date/ Duration	:	May 23, 2022, Time 11.00 AM-3.00 PM
Venue	:	SVKM’s NMIMS, MPSTME, Shirpur
Resource Persons (Expert Talk)	:	Dr. Suresh Kurumbanshi (Assistant Professor, EXTC Dept., MPSTME Shirpur) Prof. Mayank Kothari (Assistant Professor, EXTC Dept., MPSTME Shirpur)

**About the Workshop:**

Many real-world challenges, such as traffic congestion, city services, economic development, citizen involvement, and public safety and security, are addressed via IoT applications. IoT sensors are frequently embedded in physical infrastructure, such as streetlights, water metres, and traffic signals, in smart cities.

The goal of this workshop was to encourage aspirants to gain a fundamental grasp of the IoT domain, which will help them create and deploy sensors using the IoT platform.

**Schedule of Workshop:**

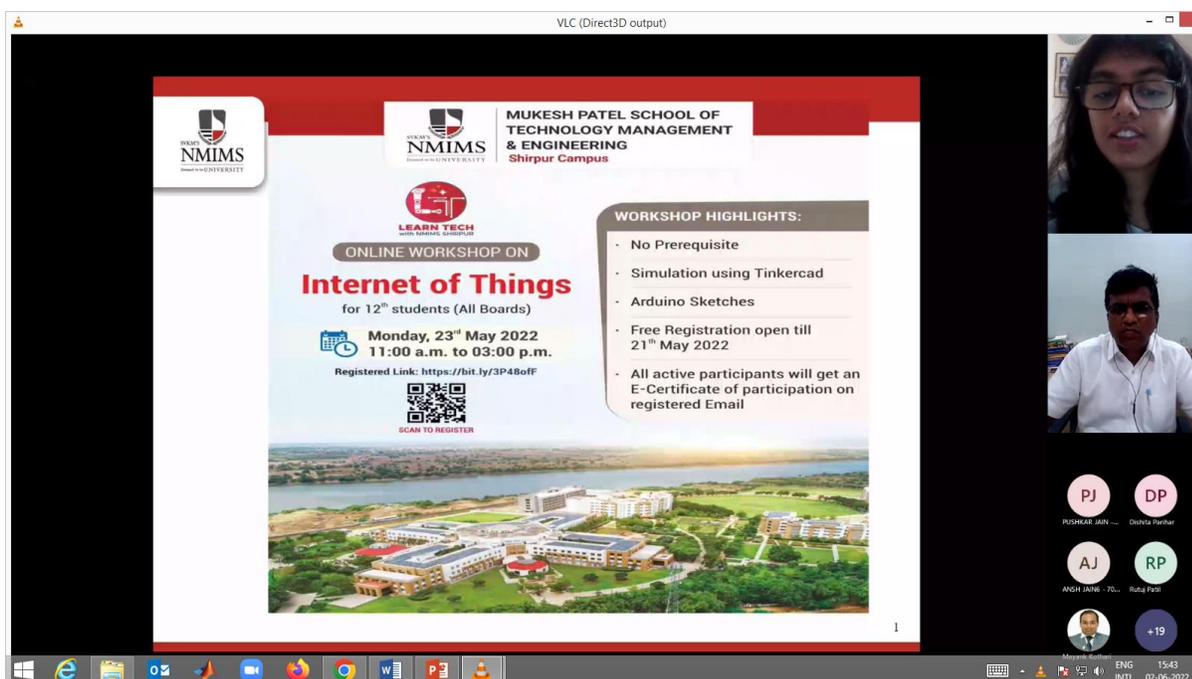
Topic covered	Time	Delivered by
Internet of Things	11.00-12.00 PM	Dr. Suresh Kurumbanshi
Arduino Sketches	12.00 -01.00 PM	Dr. Suresh Kurumbanshi
Break	01.00-01.15 PM	
Arduino Sketches/ Hardware Testing	01.15 PM -02.00 PM	Dr. Suresh Kurumbanshi
Simulation using Tinkercad	02.00-03.00 PM	Prof. Mayank Kothari

The workshop started with the introduction of IoT, its necessity, features, external devices required, arduino basics, complete arduino hardware description, arduino programming language.

Following modules were covered during the workshop

1. Program for LED blinking & its duty cycle adjustment
2. Control of LED blinking using control loops & functions.
3. Arduino sketch development & testing
4. Developing interfacing circuit between Temperature & humidity sensor and arduino.
5. Writing & testing program to read data of temperature and humidity sensor on serial port.
6. Creating interface circuit between LED displays with Arduino, developing software to run numbers from 0 to 4 on display.
7. Creating circuit in Tinkercad weblink, designing of code through block model for Arduino.
8. Circuit designing for interfacing of LED,LCD & Serial Monitors with Arduino Uno-R3 in Tinkercad.
9. Circuit development for collecting data from sensors i.e.Temperature, Display in Tinkercad.
10. Circuit development for automatic sanitization in tinkercad.

Following are some of screenshots captured during workshop



The screenshot shows a VLC player window displaying a registration slide for an online workshop. The slide features the NMIMS logo and text: 'ONLINE WORKSHOP ON Internet of Things for 12<sup>th</sup> students (All Boards)'. The workshop is scheduled for Monday, 23<sup>rd</sup> May 2022, from 11:00 a.m. to 03:00 p.m. The registration link is <https://bit.ly/3P48oFf>. A QR code is provided for registration. The workshop highlights include: No Prerequisite, Simulation using Tinkercad, Arduino Sketches, Free Registration open till 21<sup>st</sup> May 2022, and All active participants will get an E-Certificate of participation on registered Email. The slide also features an aerial view of the NMIMS campus. On the right side of the VLC window, a video call interface is visible, showing two participants: a woman with glasses and a man in a white shirt. The video call interface includes participant avatars and names: PJ (PUSHKAR JAIN), DP (Disha Parbat), AJ (ANSH JAIN), RP (Rishi Prasad), and a '+19' button. The system tray at the bottom shows the date and time as 02-06-2022, 15:43.

VLC (Direct3D output)

**Why do we need IoT?**

Ambulance      Hospital      Operation Theatre

**Before Ambulance arrives, all the facilities are ready for patient based on his reports**

Participants: Atul Patil, MANANK MAHA..., SR, PJ, SHWANI RAJ - 75..., RUSHIKESH JAIN..., AJ, RP, ANSH JAIN - 75..., Rutaj Patil, Mayank Kothari, KR, KARAN SINGH R..., ARJUN PRASAD..., B, bhushankumar..., PP, Pratiksha Pawar, +15

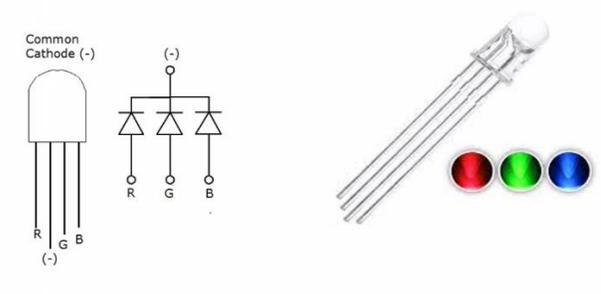
Windows Taskbar: File Explorer, Microsoft Edge, Outlook, Teams, Chrome, Word, PowerPoint, VLC

System Tray: ENG INTL, 15:46, 02-06-2022

Meeting Recording IoT Workshop.mp4 - VLC media player

Media Playback Audio Video Tools View Help

## Common Cathode Tricolour LED



Common Cathode (-)

R G B

R G B

12:35 15:07 3:56:09

VLC (Direct3D output)

sketch\_may23a | Arduino 1.8.5

```

File Edit Sketch Tools Help
sketch_may23a
void setup() {
  // put your setup code here, to run once:
  pinMode(11,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
  digitalWrite(11,HIGH);
  delay(1000);
  digitalWrite(11,LOW);
  delay(1000);
}

```

Done uploading  
Sketch uses 928 bytes (2%) of program storage space. Maximum is 32256 bytes.  
Global variables use 9 bytes (0%) of dynamic memory, leaving 2039 bytes for local variables. Maximum is 2048 bytes.

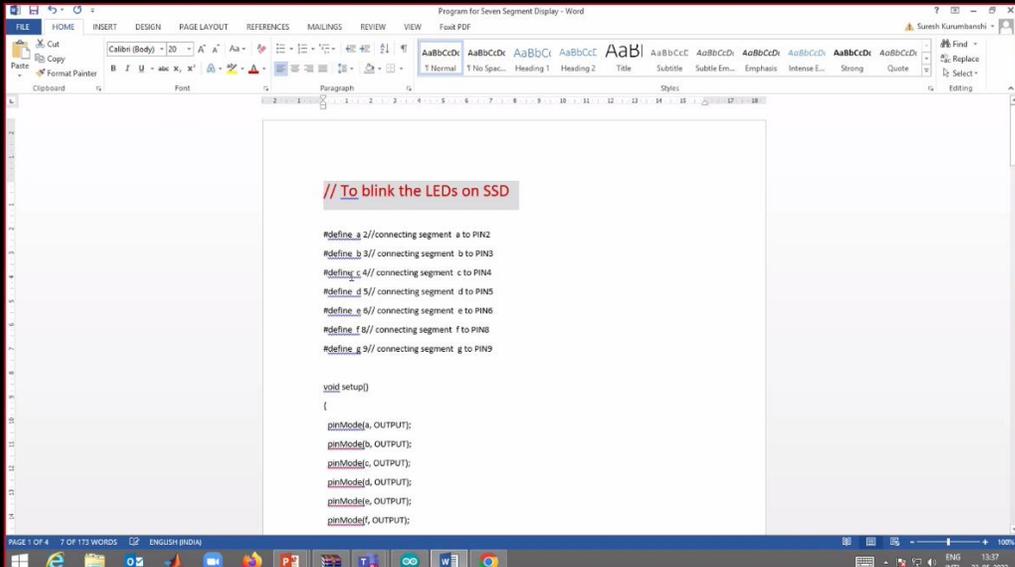
12 Arduino@nmims: /Users/.../COM8

ENG 12:09  
INTL 23-05-2022



Meeting Recording IoT Workshop.mp4 - VLC media player

Media Playback Audio Video Tools View Help



```

// To blink the LEDs on SSD

#define_a_2//connecting segment a to PIN2
#define_b_3// connecting segment b to PIN3
#define_c_4// connecting segment c to PIN4
#define_d_5// connecting segment d to PIN5
#define_e_6// connecting segment e to PIN6
#define_f_8// connecting segment f to PIN8
#define_g_9// connecting segment g to PIN9

void setup()
{
  pinMode(a, OUTPUT);
  pinMode(b, OUTPUT);
  pinMode(c, OUTPUT);
  pinMode(d, OUTPUT);
  pinMode(e, OUTPUT);
  pinMode(f, OUTPUT);
  pinMode(g, OUTPUT);
}

```

2:33:48 236335 3:56:09

VLC (Direct3D output)

General

You're recording You are recording this meeting. Be sure to let everyone know that they are being recorded. [Privacy policy](#) Dismiss

Participants

Type a name

Share invite

Presenters (2)

- Suresh Kurumbanshi (Dr.) Organizer
- Mayank Kothari

Attendees (12)

- AARYA MEHTA - 704721004... Meeting guest
- bhumikavikasshi... (Guest) Meeting guest
- Gauri Patil (Guest) Meeting guest
- KARAN SINGH RATHORE - ... Meeting guest
- MAYANK MAHA... (Guest) Meeting guest
- PUSHKAR JAIN - 270112100... Meeting guest
- rajeev tripathi (Guest) Meeting guest
- Raosaheb chavan (Guest) Meeting guest
- Rehan Javed Akhtar

2:33:48 236335 3:56:09

ENG INTEL 13:48 23-05-2022

VLC (Direct3D output)



## What is Tinkercad?

- Tinkercad - <https://www.tinkercad.com> is an excellent tool that allows you to simulate Arduino-based systems.
- Simulate all exercises and even your own designs before trying them on real hardware.
- Allows you to do programming using blocks,
- You can copy-paste the generated code later into Arduino IDE to program the real Arduino board, rather than having to write it from scratch.



  
PISHKAR JAIN ...

  
Suresh Kurumban...

  
Rehan Javed AHR...

  
Rasoolb chavan...

  
Suyog Pande

  
bhutkarakazi...

  
AARYA MEHTA ...

  
KARAN SINGH R...

  
Gauri Patil (Guest)

  
MANAN MAHA...

  
Sandeep Patil (Guest)

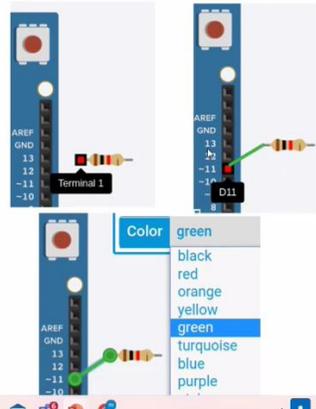
  
+2

Meeting Recording IoT Workshop.mp4 - VLC media player



## Steps to design circuit in Tinkercad ..(cont.)

- Add more components and wire them up as desired.
- Clicking on the lead of a component allows you to start a connecting wire from there.
- Clicking on a wire allows you to change its color.

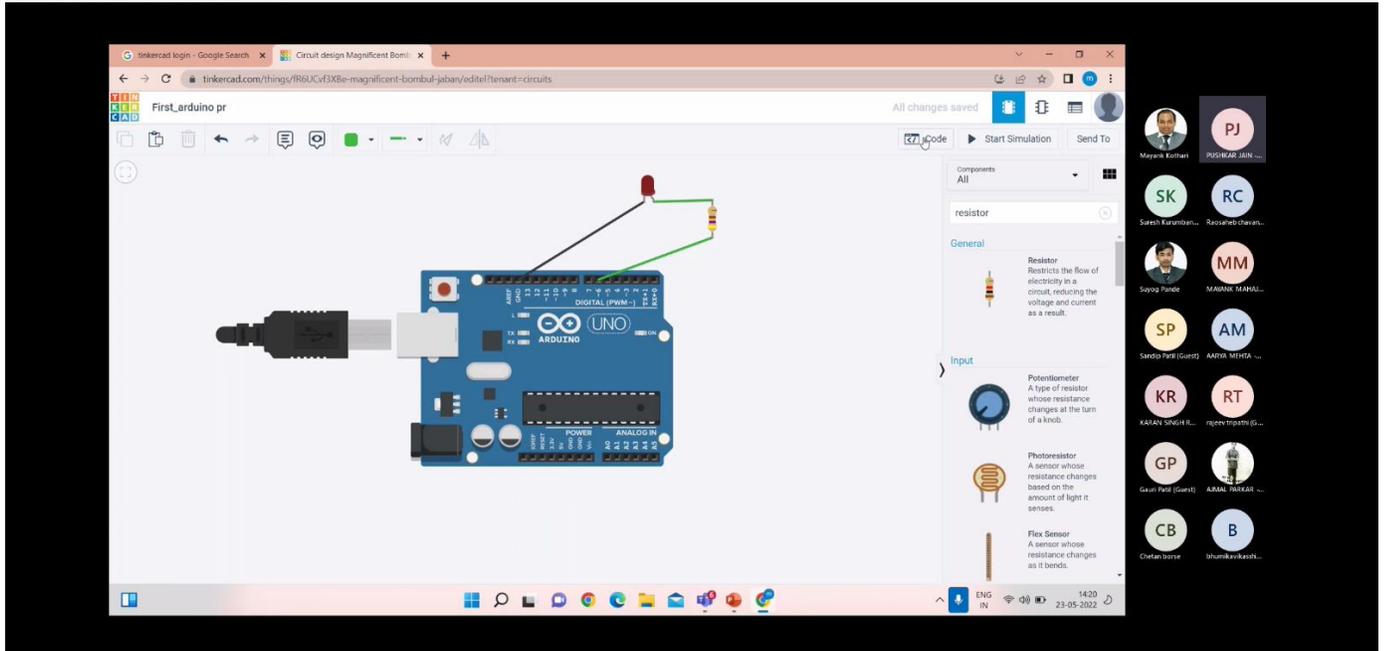




3:04:57 | 3:56:09

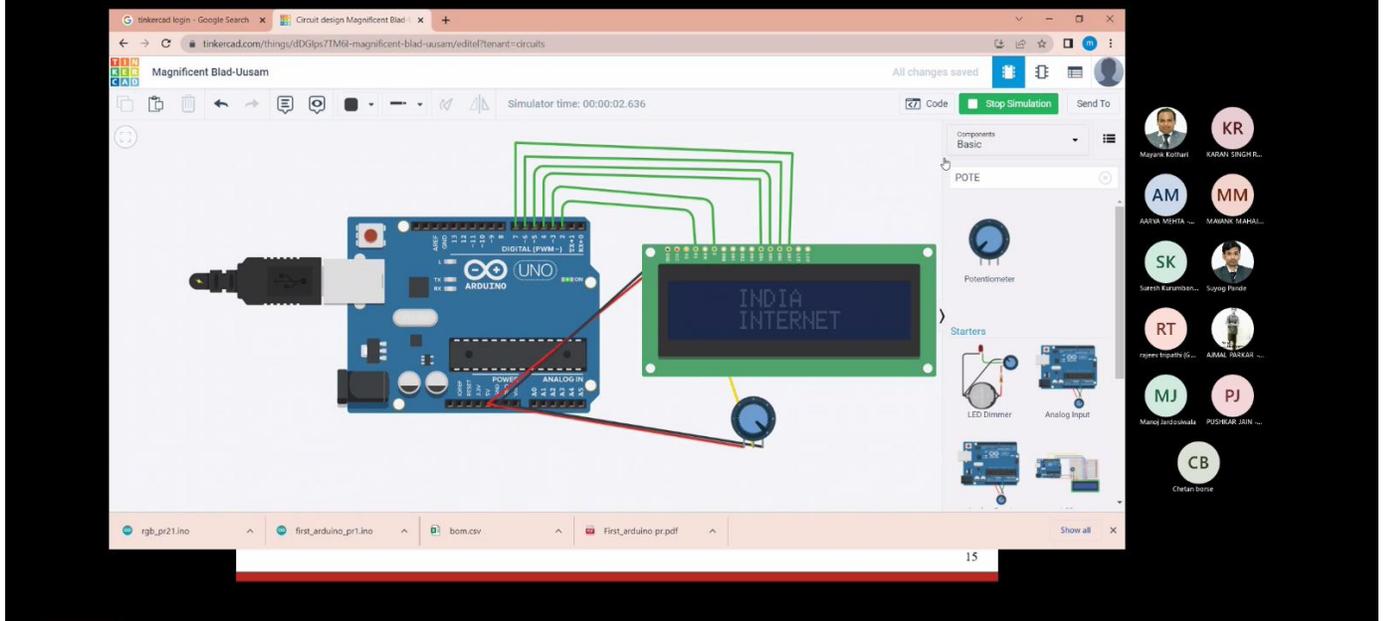
7 | Page

Meeting Recording IoT Workshop.mp4 - VLC media player



3:17:01

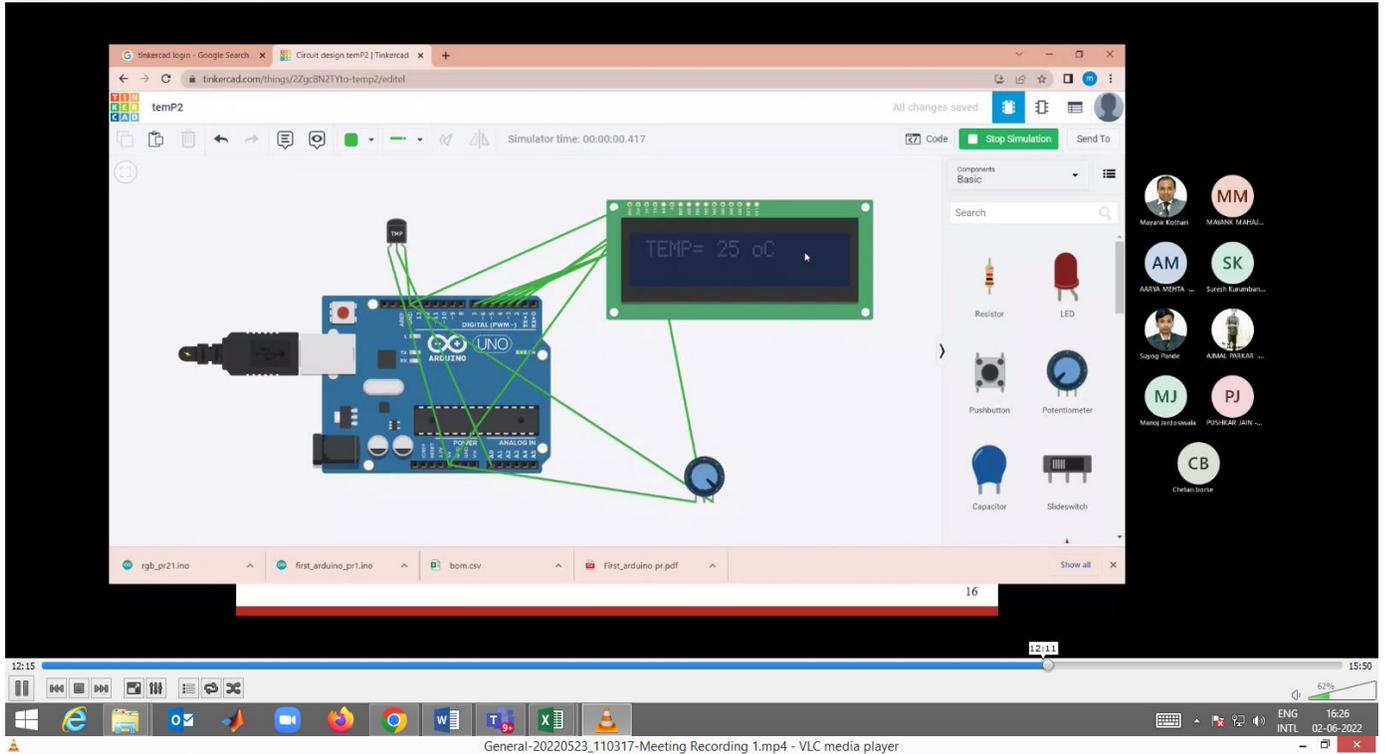
General-20220523\_110317-Meeting Recording 1.mp4 - VLC media player



01:01

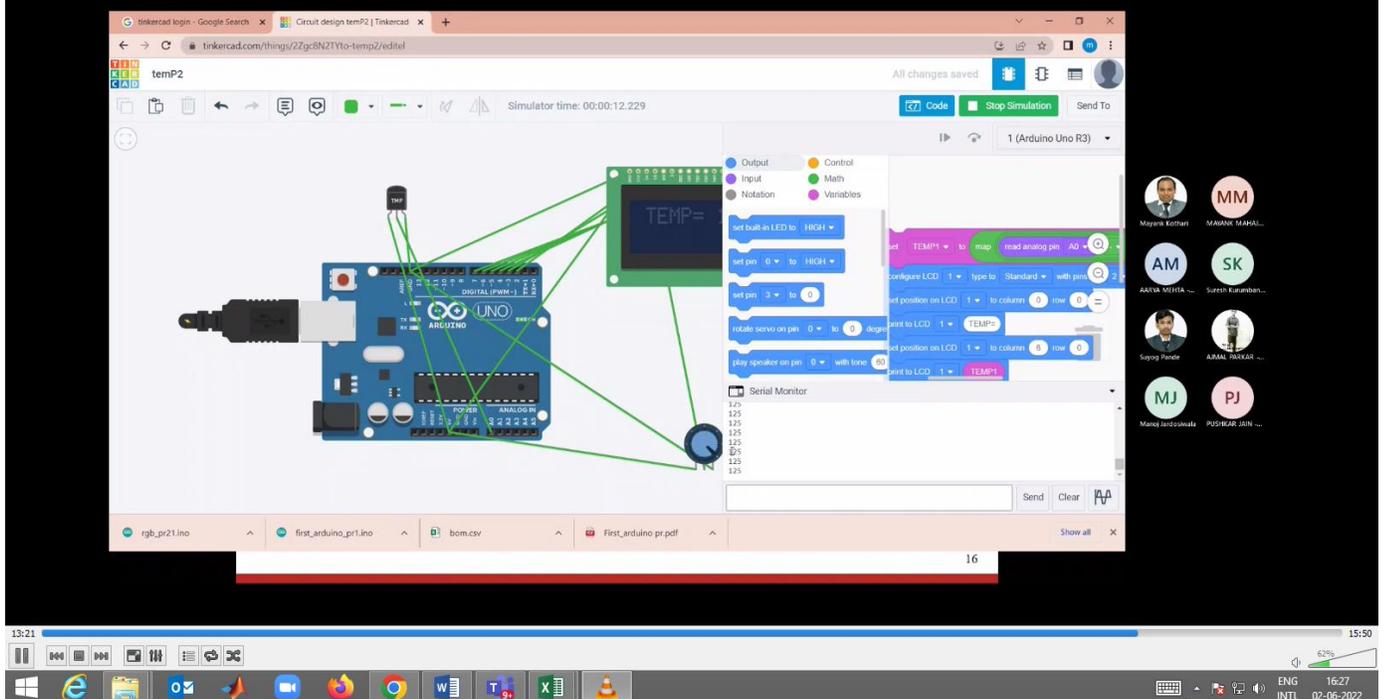
15:50

General-20220523\_110317-Meeting Recording 1.mp4 - VLC media player



12:15

General-20220523\_110317-Meeting Recording 1.mp4 - VLC media player



13:21

### List of Participants

Sr. No	Participant name
1	AARYA MEHTA
2	ADITYA MANTRI
3	AJMAL PARKAR
4	Anokhi Chandak
5	ANSH JAIN
6	Atul Patil
7	Bari Harshada Chatur
8	bhumikavikasshimpi
9	Chetan borse
10	Dishita Parihar
11	Dr. Shraddha Wani Orke
12	Gauri Patil
13	KARAN SINGH RATHORE
14	Keyur Thakare
15	KRISH VERMA
16	Manoj Jardosiwala
17	Mayank Kothari
18	MAYANK MAHAJAN
19	PASHMAA SINGH
20	Pratiksha Pawar
21	PUSHKAR JAIN
22	Raj
23	RAJ RAJBHAR
24	rajeev tripathi
25	Raosaheb chavan
26	Rehan Javed Akhtar
27	Rutuj Patil
28	Sandip Patil
29	SHIVANI RAI
30	SHREY GOYAL
31	Soumya
32	Sunil Chaudhari
33	Suresh Kurumbanshi (Dr.)
34	Suyog Pande
35	TEJAS PATIL
36	UMESH SINDHI
37	Vedika Amrutkar
38	Vinit Jadhav