

Certificate Course

On

Programming with Arduino

Faculty Coordinators: Sri R. V. Sreehari

Sri P. Lokeswara Reddy

Duration: **08/09/2020 to 24/09/2020**



K.S.R.M. COLLEGE OF ENGINEERING

(UGC - AUTONOMOUS)

Kadapa, Andhra Pradesh, India - 516003

Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

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Lr./KSRMCE/ (Department of ECE)/2020-21

Date: 01-09-2020

To
The Principal
KSRM College of Engineering
Kadapa, AP.

Sub: KSRMCE - (Department of ECE) – Permission to conduct certification course on Programming with Arduino –Request – reg.

Respected Sir,

With reference to the cited, the Department of ECE is planning to conduct a certification course on Programming with Arduino for B.Tech V sem ECE students from 08-09-2020 to 24-09-2020 in online mode. In this regard, we kindly request you to grant permission to conduct this certification course. This is submitted for your kind perusal.

Thanking you sir,

Yours Faithfully,

Coordinators

Sri R. V. Sreehari

Sri P. Lokeshwara Reddy

Cc:

To The Director for Information

To All Deans/HODs

*Forwarded to
the principal sir
G. H.*

Permitted
U.S.S. Murthy
PRINCIPAL
K.S.R.M. COLLEGE OF ENGINEERING
KADAPA - 516003. (A.P.)



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Dated: 02-09-2020

Circular

All the B.Tech V sem ECE students are hereby informed that department of ECE is going to conduct 40 hours certification course on Programming with Arduino from 08-09-2020 to 24-09-2020. Interested students may register their names with following link on or before 06-09-2020.

Registration Link: <https://forms.gle/C954qihfoJCVTgiW6>

V. S. S. Mmly

Principal

PRINCIPAL

**K.S.R.M. COLLEGE OF ENGINEERING
KADAPA - 516 003. (A.P.)**

For any queries contact,

Coordinators


Sri R. V. Sreehari

Sri P. Lokeswara Reddy

Cc to:

The Management /Director / All Deans / All HODS/Staff / Students for information

The IQAC Cell for Documentation

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Department of Electronics & Communication Engineering

Certificate Course on Programming with Arduino

Registered Student List


S.No.	Roll Number	Name of the Student	Year & Branch	Email id
1	189Y1A0402	ALLURI YADITHYA	B.Tech V sem, ECE	189Y1A0402@ksrmce.ac.in
2	189Y1A0403	ANDLURU PREM REDDY	B.Tech V sem, ECE	189Y1A0403@ksrmce.ac.in
3	189Y1A0404	ARAVA SHYAMDEEP	B.Tech V sem, ECE	189Y1A0404@ksrmce.ac.in
4	189Y1A0406	AVULA ADARSH KUMAR REDDY	B.Tech V sem, ECE	189Y1A0406@ksrmce.ac.in
5	189Y1A0407	AVULA NAGENDRABABU	B.Tech V sem, ECE	189Y1A0407@ksrmce.ac.in
6	189Y1A0408	AVULA SRIKANTH	B.Tech V sem, ECE	189Y1A0408@ksrmce.ac.in
7	189Y1A0409	BAIMUTHAKA MAHESH	B.Tech V sem, ECE	189Y1A0409@ksrmce.ac.in
8	189Y1A0414	BAYANABOINA REDDI SUBBARAYUDU	B.Tech V sem, ECE	189Y1A0414@ksrmce.ac.in
9	189Y1A0415	BEECHU CHETAN REDDY	B.Tech V sem, ECE	189Y1A0415@ksrmce.ac.in
10	189Y1A0416	BOGATHI HEMANTH KUMAR REDDY	B.Tech V sem, ECE	189Y1A0416@ksrmce.ac.in
11	189Y1A0417	BOGGALA CHANDRA SEKHAR	B.Tech V sem, ECE	189Y1A0417@ksrmce.ac.in
12	189Y1A0418	BOMMIREDDY LAKSHMI PRASANNA (W)	B.Tech V sem, ECE	189Y1A0418@ksrmce.ac.in
13	189Y1A0422	BOREDDY MANJUNATH REDDY	B.Tech V sem, ECE	189Y1A0422@ksrmce.ac.in
14	189Y1A0423	BUDDA SREEKANTH REDDY	B.Tech V sem, ECE	189Y1A0423@ksrmce.ac.in
15	189Y1A0424	BUGULU VINAY KUMAR REDDY	B.Tech V sem, ECE	189Y1A0424@ksrmce.ac.in
16	189Y1A0425	CHALLA LOKESHNAIDU	B.Tech V sem,	189Y1A0425@ksrmce.ac.in

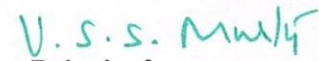
17	189Y1A0426	CHALLA SAI KISHORE	B.Tech V sem, ECE	189Y1A0426@ksrmce.ac.in
18	189Y1A0427	CHALLA SURENDRA REDDY	B.Tech V sem, ECE	189Y1A0427@ksrmce.ac.in
19	189Y1A0430	CHINTHALACHERUVU SAI NATH	B.Tech V sem, ECE	189Y1A0430@ksrmce.ac.in
20	189Y1A0431	DASARI SIVANI (W)	B.Tech V sem, ECE	189Y1A0431@ksrmce.ac.in
21	189Y1A0432	DEGALA PRAHARIKA (W)	B.Tech V sem, ECE	189Y1A0432@ksrmce.ac.in
22	189Y1A0435	EPPARLA MAHENDRA	B.Tech V sem, ECE	189Y1A0435@ksrmce.ac.in
23	189Y1A0436	G CHAITANYA	B.Tech V sem, ECE	189Y1A0436@ksrmce.ac.in
24	189Y1A0439	GANGANA PALLI SAI THANUJ	B.Tech V sem, ECE	189Y1A0439@ksrmce.ac.in
25	189Y1A0440	GANGIREDDY VAMSI KRISHNA REDDY	B.Tech V sem, ECE	189Y1A0440@ksrmce.ac.in
26	189Y1A0441	GANGIREDDYDEEPIKA (W)	B.Tech V sem, ECE	189Y1A0441@ksrmce.ac.in
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29	189Y1A0445	GOPISETTY NAVEEN KUMAR	B.Tech V sem, ECE	189Y1A0445@ksrmce.ac.in
30	189Y1A0447	GUDA GUNA SEKHAR REDDY	B.Tech V sem, ECE	189Y1A0447@ksrmce.ac.in
31	189Y1A0449	GUNDAMRAJU RAJESH	B.Tech V sem, ECE	189Y1A0449@ksrmce.ac.in
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47	189Y1A0468	KRISHNAM GANGA MAHESWAR REDDY	B.Tech V sem, ECE	189Y1A0468@ksrmce.ac.in
48	189Y1A0471	KURAKU NAGESWARA RAO	B.Tech V sem, ECE	189Y1A0471@ksrmce.ac.in
49	189Y1A0472	KURRA MANJULA (W)	B.Tech V sem, ECE	189Y1A0472@ksrmce.ac.in
50	189Y1A0473	LAKKIREDDY SAIPRANAVARSHITHA (W)	B.Tech V sem, ECE	189Y1A0473@ksrmce.ac.in
51	189Y1A0474	MADARASU SAI KRISHNA	B.Tech V sem, ECE	189Y1A0474@ksrmce.ac.in
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54	189Y1A04A1	PAGIDI RAMESH	B.Tech V sem, ECE	189Y1A04A1@ksrmce.ac.in
55	189Y1A04A2	PALAGIRI BHARGAVA REDDY	B.Tech V sem, ECE	189Y1A04A2@ksrmce.ac.in
56	189Y1A04A3	PALEGAR SUNIL KUMAR	B.Tech V sem, ECE	189Y1A04A3@ksrmce.ac.in
57	189Y1A04B2	POLANKI KUMAR ASWARTH	B.Tech V sem, ECE	189Y1A04B2@ksrmce.ac.in
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59	189Y1A04B4	PULA SAIRAM	B.Tech V sem, ECE	189Y1A04B4@ksrmce.ac.in
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61	189Y1A04B6	PUTHA PAVAN KUMAR REDDY	B.Tech V sem, ECE	189Y1A04B6@ksrmce.ac.in
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			ECE	
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Programming with Arduino

40hrs

Course Objectives:

- Understand about Arduino hardware and software.
- Learn the basic programming with Arduino.
- Gain knowledge to verify working of simple sensor circuits with Arduino kit.
- Learn read, write and visualization of data files using file I/O functions.

Course Outcomes:

The students will be able to:

- Learn the Arduino programming language and IDE
- Program basic Arduino examples
- Prototype circuits and connect them to the Arduino
- Program the Arduino microcontroller to make the circuits work
- Connect the Arduino microcontroller to a serial terminal to understand communication and stand-alone use

Module 1: Getting started with Arduino

Introduction to Arduino board, Pin configuration and architecture, Device and platform features, Concept of digital and analog ports, Introduction to Embedded C and Arduino platform, Download and Install the Arduino IDE, Arduino IDE and Sketch Overview.

Module 2: Basics

Understanding and Using Variables-data types, variables and constants, Blink an LED, digital Read() and Serial Port Communication, analogRead() and Serial Port Communications, Reading Analog Pins and Converting the Input to a Voltage, Fade an LED with Pulse Width Modulation using analogWrite()

Module 3: Control

Control Statements- If-Else Statement, Comparison Operators and Conditions, for loop, while statement, switch case statement, Arrays and Functions and examples.

Module 4: Digital

Blink an LED Without using the delay() Function, Using Buttons, State Change Detection and the Modulo Operator, Debouncing a Button.

Arduino I/O Functions: Pins Configured as INPUT, Pull-up Resistors, Pins Configured as OUTPUT, pinMode() Function, digitalWrite() Function, analogRead() function, Arduino Interrupts.

Module 5: Analog Input and Output

Analog I/O and Serial Communications, Analog Input, Calibration, Smoothing Data.

Text book:

1. Massimo Banzi, "Getting started with Arduino", O'Reilly, 2008/2013
2. John Nussey, "Arduino for Dummies", 2nd Edition, John Willey and Sons, 2018



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Department of Electronics & Communication Engineering


Certificate Course on Programming with Arduino


Schedule

S.No	Date	Time	Faculty	Topic
1	08/09/2020	3 PM to 5 PM	Dr. S. L .Prathapa Reddy Sri R. V. Sreehari Sri P. Lokeshwara Reddy	Inauguration
2	09/09/2020	3 PM to 5 PM	Dr. S. L. Prathapa Reddy	Introduction to Arduino board
3	10/09/2020	3 PM to 5 PM	Dr. S. L .Prathapa Reddy	Introduction to Embedded C and Arduino platform
4	11/09/2020	3 PM to 5 PM	Sri R. V. Sreehari	Download and Install the Arduino IDE, Arduino IDE and Sketch Overview
5	12/09/2020	3 PM to 5 PM	Dr.S.L. Prathapa Reddy	Understanding and Using Variables-data types
6	13/09/2020	3 PM to 5 PM	Sri R. V. Sreehari	analog Read() and Serial Port Communications
7	14/09/2020	3 PM to 5 PM	Sri P. Lokeshwara Reddy	Fade an LED with Pulse Width Modulation using analog Write()
8	15/09/2020	3 PM to 5 PM	Dr.S.L. Prathapa Reddy	Control Statements- If-Else Statement
9	16/09/2020	3 PM to 5 PM	Sri R. V. Sreehari	Arrays and Functions and examples.
10	17/09/2020	3 PM to 5 PM	Sri P. Lokeshwara Reddy	Blink an LED Without using the delay() Function
11	18/09/2020	3 PM to 5 PM	Sri P. Lokeshwara Reddy	Arduino I/O Functions
12	19/09/2020	3 PM to 6 PM	Dr. S.L. Prathapa Reddy	digital Write() Function, analog Read() function, Arduino Interrupts
13	20/09/2020	3 PM to 6 PM	Sri R. V. Sreehari	Analog I/O and Serial Communications

14	21/09/2020	3PM to 6PM	Sri P. Lokeshwara Reddy	Analog Input
15	22/09/2020	3PM to 6PM	Sri P. Lokeshwara Reddy	Calibration
16	23/09/2020	3PM to 6PM	Sri R. V. Sreehari	Smoothing Data
17	24/09/2020	3PM to 6PM	Dr.S.L.Prathapa Reddy Sri P. Lokeshwara Reddy Sri R. V. Sreehari	Exam and Distribution of the Certificates


Coordinators


HOD
Professor & H.O.D.
Department of E.C.E.
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ACTIVITY REPORT

Certification Course
On

“PROGRAMMING WITH ARDUINO”

08th September, 2020 to 24th September, 2020

Target Group	:	Students
Details of Participants	:	71 Students
Co-ordinator	:	Sri R. V. Sreehari, Assoc. Professor of ECE Sri P. Lokeshwara Reddy, Asst. Prof, Dept. of ECE
Organizing Department	:	Department of Electronics & Communication Engineering
Venue	:	Online mode (Google meet)

Description:

Certification course on “PROGRAMMING WITH ARDUINO” was organized by Dept. of ECE from 08th September 2020 to 24th September 2020 in online mode. Dr. S. L. Prathapa Reddy, Sri R.V. Sreehari and Sri P. Lokeshwara Reddy acted as Course instructors. The main aim of the course is to create awareness among students on Arduino Hardware and Software. Knowledge of Programming with Arduino help students to develop Prototype circuits with Arduino. Forty Hours course was successfully completed and participation certificates were provided to the participants.

Photo :



Sri R.V. Sreehari
Sri P. Lokeshwara Reddy


Coordinators

V. S. S. Murthy

Principal

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“
Certificate Course on
Programming with Arduino”
08/09/2020 to 24/09/2020

Organized by

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING



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Department of Electronics & Communication Engineering

Certificate Course on Programming with Arduino

Attendance Sheet

S.N o	Roll Num	Name of the Student	08/09/2020	09/09/2020	10/09/2020	11/09/2020	12/09/2020	13/09/2020	14/09/2020	15/09/2020	16/09/2020	17/09/2020	18/09/2020	19/09/2020	20/09/2020	21/09/2020	22/09/2020	23/09/2020	24/09/2020
1	189Y1A0402	ALLURI YADITHYA	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓
2	189Y1A0403	ANDLURU PREM REDDY	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	189Y1A0404	ARAVA SHYAMDEEP	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	189Y1A0406	AVULA ADARSH KUMAR REDDY	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✗
5	189Y1A0407	AVULA NAGENDRABABU	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
6	189Y1A0408	AVULA SRIKANTH	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓
7	189Y1A0409	BAIMUTHAKA MAHESH	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓
8	189Y1A0414	BAYANABOINA REDDI SUBBARAYUDU	✓	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
9	189Y1A0415	BEECHU CHETAN REDDY	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓	✗	✓	✓	✓
10	189Y1A0416	BOGATHI HEMANTH KUMAR REDDY	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
11	189Y1A0417	BOGGALA CHANDRA SEKHAR	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
12	189Y1A0418	BOMMIREDDY LAKSHMI PRASANNA (W)	✓	✗	✗	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓
13	189Y1A0422	BOREDDY MANJUNATH REDDY	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓

Musical Notes / Frequencies

Note	Frequency (Hz)
C ₄	261
C [#] ₄ / D ^b ₄	277
D ₄	293
D [#] ₄ / E ^b ₄	311
E ₄	329
F ₄	349
F [#] ₄ / G ^b ₄	369
G ₄	392
G [#] ₄ / A ^b ₄	415
A ₄	440
A [#] ₄ / B ^b ₄	466
B ₄	493

Note	Frequency (Hz)
C ₅	523
C [#] ₅ / D ^b ₅	554
D ₅	587
D [#] ₅ / E ^b ₅	622
E ₅	659
F ₅	698
F [#] ₅ / G ^b ₅	739
G ₅	783
G [#] ₅ / A ^b ₅	830
A ₅	880
A [#] ₅ / B ^b ₅	932
B ₅	987

Simon DiscoMode

- Array variables
- custom functions
 - `buzz (tone_id) ;`
 - `change_led() ;`

Last bit... the buzzer

SIMON_3_BUZZER

Final command to know:

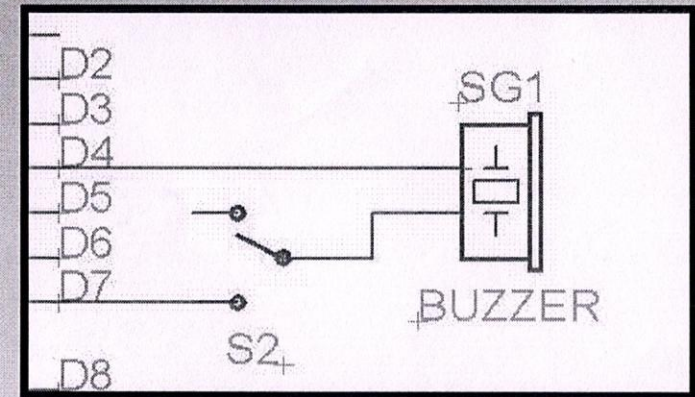
```
tone (pin, freq, duration);
```

pin – the OUTPUT pin the buzzer is connected to.

freq – unsigned int (0 ... 65,535)

duration – unsigned long (0 ... $2^{32} - 1$)

Buzzer Pins



The Buzzer is connected between pins D4 and D7.

You must set both pins as OUTPUTs –

```
pinMode (4, OUTPUT) ;
```

```
pinMode (7, OUTPUT) ;
```

Use `tone (4, 440) ;` to generate a 440 Hz sound.

Conditional Statements

If...

General Use

```
if (condition)  
{  
    // do this  
}
```

Example

```
if (button_State==HIGH)  
{  
    digitalWrite(ledPin,  
HIGH);  
    delay(300);  
    digitalWrite(ledPin,  
LOW);  
    delay(300);  
}
```

Digital Input

- To connect digital input to your Arduino use Digital Pins # 0 – 13 (Although pins # 0 & 1 are also used for serial)
- Digital Input needs a pinMode command:
pinMode (pinNumber, INPUT);
Make sure to use caps for INPUT
- To get a digital reading: *digitalRead (pinNumber);*
- Digital Input values are only **HIGH** (On) or **LOW** (Off)

Activating the Internal Pull-up Resistor

```
pinMode (pin, INPUT_PULLUP);
```

```
ex: pinMode (2, INPUT_PULLUP);
```

Notes:

```
BUTTON1 = 2;
```

```
BUTTON2 = 6;
```

```
BUTTON3 = 9;
```

```
BUTTON4 = 12;
```

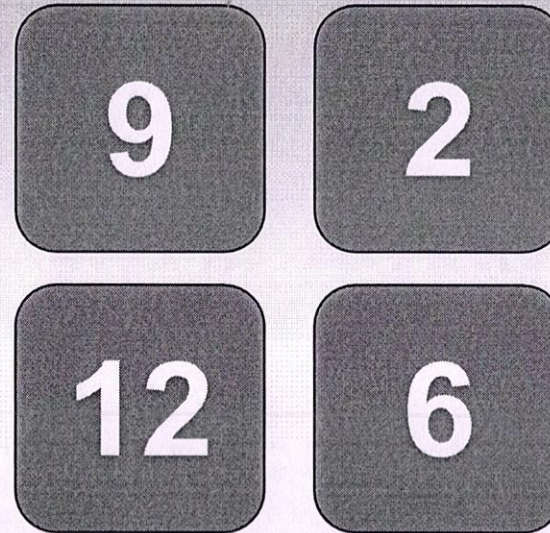

Button Pin Configurations

BUTTON1 = 2;

BUTTON2 = 6;

BUTTON3 = 9;

BUTTON4 = 12;



Can you figure out which Button is tied to which pin? Write down a few notes in your notebook!

Digital Input

```
int button_state = digitalRead(ButtonPin);
```

Value will be either: HIGH or LOW

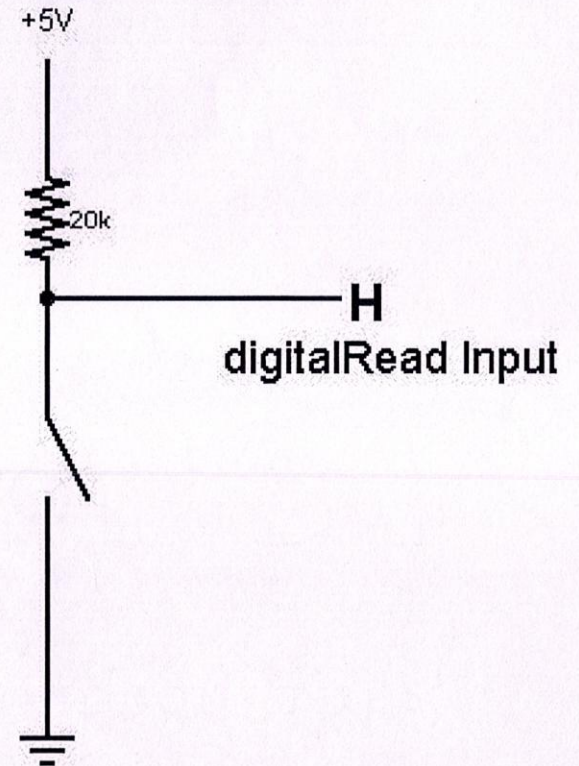


Reading a button press

Button Input is normally
HIGH – when you press it,
you pull it LOW.

The Code:

```
int buttonPress = digitalRead(2);
```

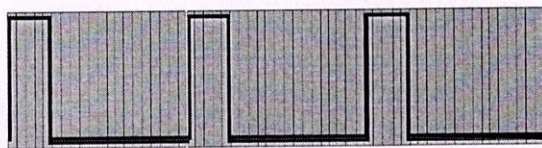


Output is always Digital (ON or OFF)

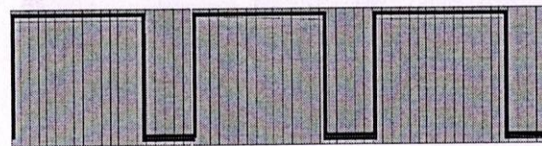
Using a Digital signal that pretends to be an Analog signal is called Pulse Width Modulation (PWM)

By varying the duty cycle, we can “fake” an analog signal output.

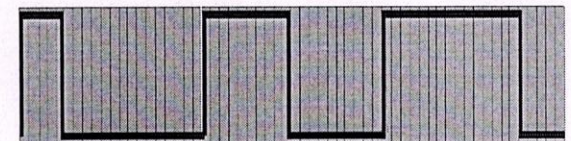
PWM is available on Arduino pins # 3, 5, 6, 9, 10, and 11



P.W.M. Signal @ 25%



P.W.M. Signal @ 75%



P.W.M. Signal rising

SIMON_2b_BLINK

Using Variables

To clean-up code, for read-ability, and flexibility – we can create placeholders in code.

Example:

```
int ledPin = 3;
void setup() {
    pinMode(ledPin, OUTPUT);
}
void loop() {
    digitalWrite(ledPin, HIGH);
}
```

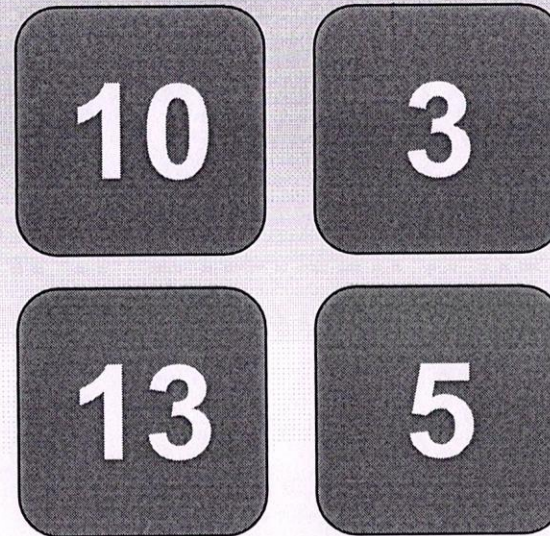
LED Pin Configurations

LED1 = ~3;

LED2 = ~5;

LED3 = ~10;

LED4 = 13;



Can you figure out which LED is tied to which pin? Write down a few notes in your notebook!

Output is always Digital

To output a signal that pretends to be Analog use this code:

```
analogWrite (pinNumber, value );
```

Where pin is one of the analog output pins: 3, 5, 6, 9, 10, 11

Where value is a number ranging from: 0 – 255.

Programming with Arduino

By

Dr.S.L.Prathapa Reddy

Assistant Professor ECE Department

KSRM College Of Engineering, Kadapa

Agenda

- About us / Introductions
- Software Installation
- What can it do? Who cares?
- Blink Sketch Disco Lights
- Using Variables
- If() statement reading buttonPress
- Analog Sensors Fading
- Making Sound

Arduino Software Installation

Open Source

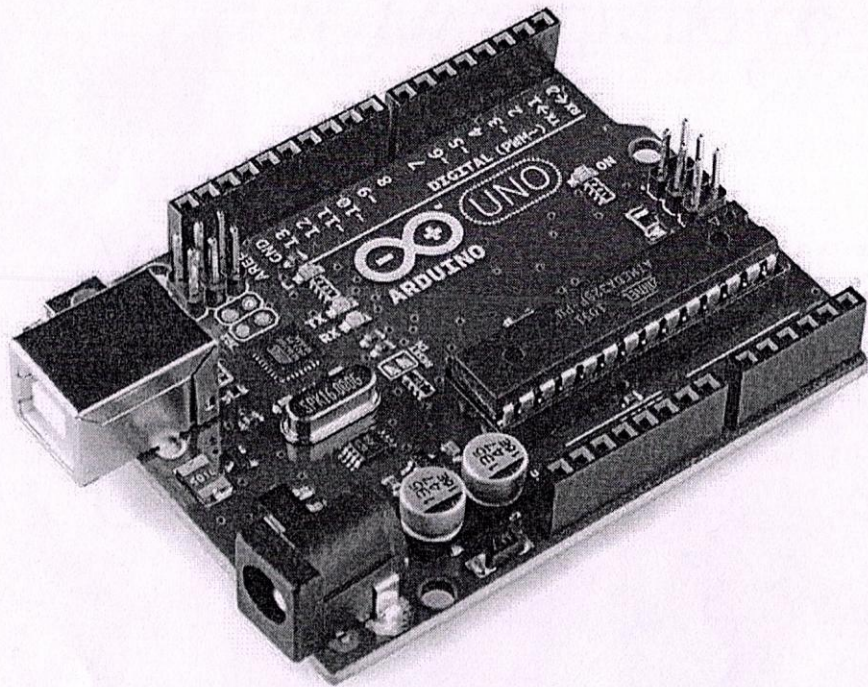
Free

Available on-line with resources at:

www.arduino.cc



What can it do?



- Great for prototyping ideas
- Access to multiple I/O
- Drive motors, turn on lights, trigger controls.
- Low Power requirements
- Flexible / Open-source

Who cares?

Hackers / Makers

Engineers

Artists

Musicians

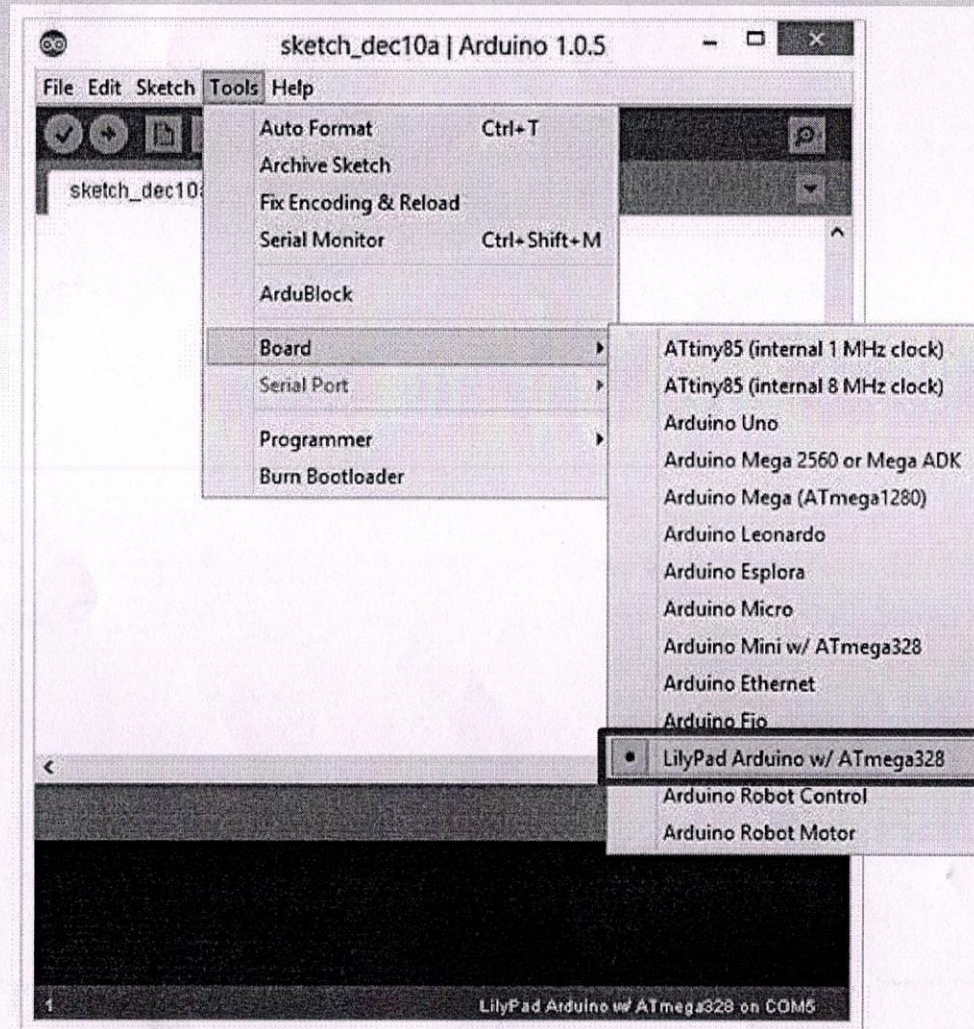
Kids!

Teachers!!

You!!!

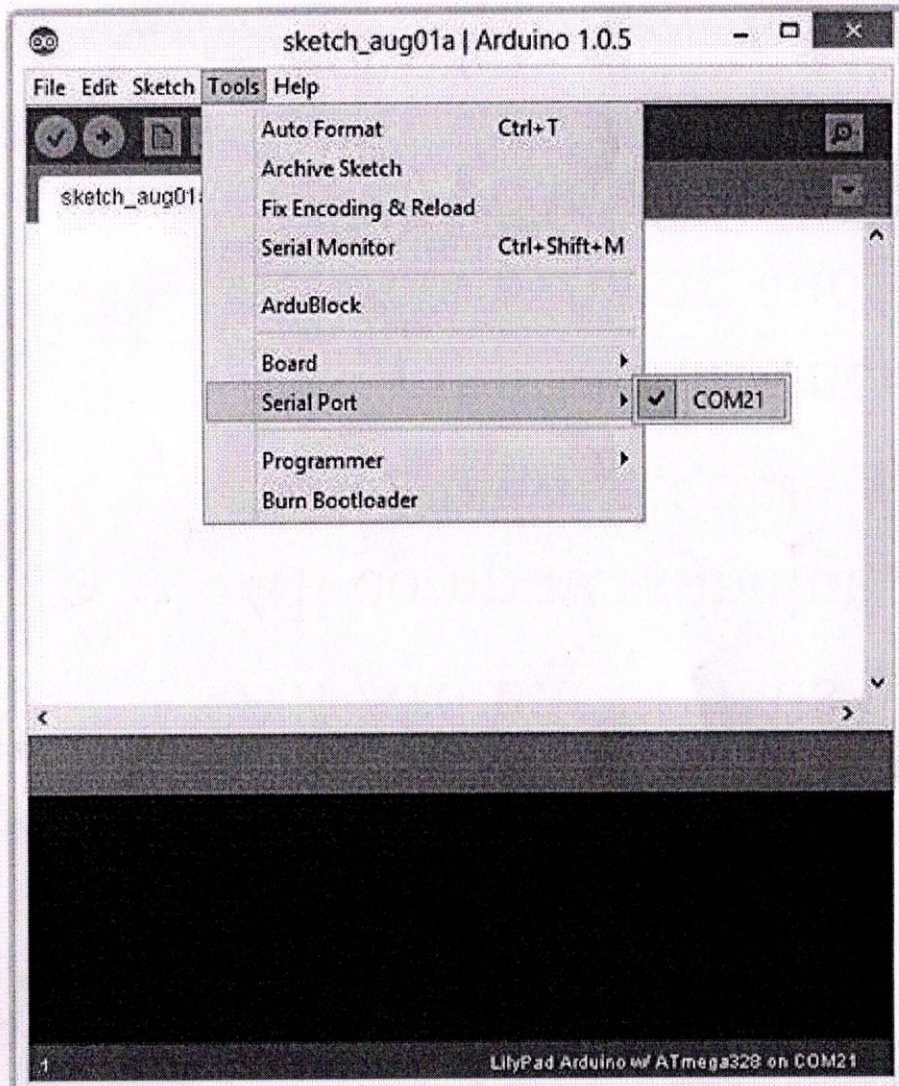
Setup Board Type

Tools → Board → Arduino Uno



Setup Serial COM Port

Tools → Serial Port →



Notes:

PC –

Highest **COM #**

Mac –

/dev/tty.usbserial-A####xxx

Analog and Digital

- All Arduino signals are either Analog or Digital
- All computers including Arduino, only understand Digital
- It is important to understand the difference between Analog and Digital signals since Analog signals require an Analog to Digital conversion

Input vs. Output

Everything is referenced from the perspective of the microcontroller.

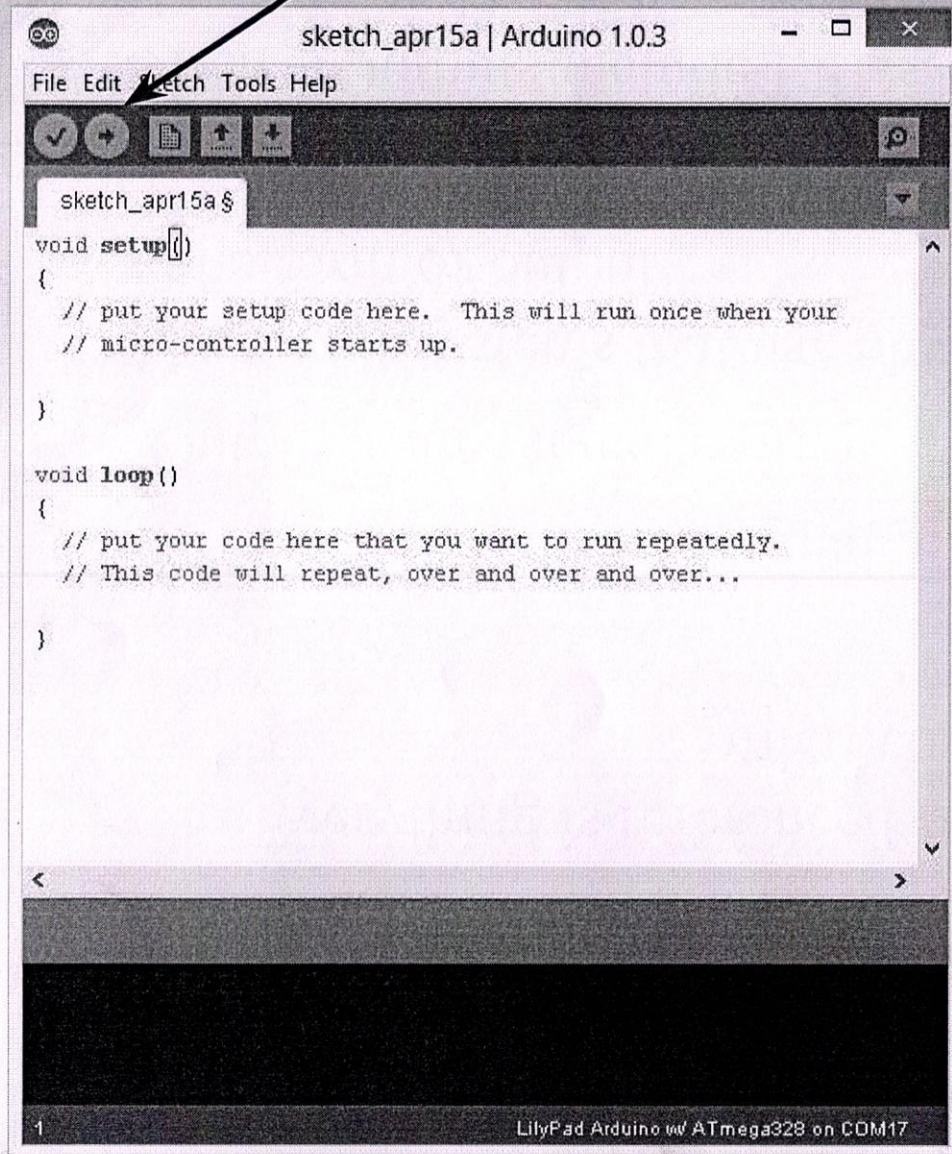
Inputs is a signal going into the board.

Output is any signal exiting an electrical system

- Almost all systems that use physical computing will have some form of output
- Often – Outputs include LEDs, a motor, a servo, a piezo element, a relay and an RGB LED

upload

Basic Program



```
sketch_apr15a | Arduino 1.0.3
File Edit Sketch Tools Help
sketch_apr15a$
void setup()
{
  // put your setup code here. This will run once when your
  // micro-controller starts up.
}
void loop()
{
  // put your code here that you want to run repeatedly.
  // This code will repeat, over and over and over...
}
1 LilyPad Arduino w/ ATmega328 on COM17
```

Two required routines / methods / functions:

```
void setup()
{
  // runs once
}
```

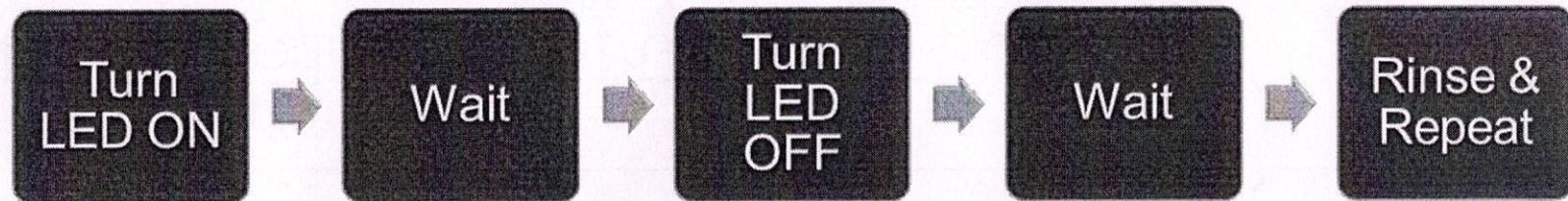
```
void loop()
{
  // repeats forever!!!
}
```

Let's get to hacking...

Project #1 – Blink

“Hello World” of Physical Computing

Pseudo-code – how should this work?



Three commands to know...

```
pinMode (pin, INPUT/OUTPUT);
```

```
ex: pinMode(13, OUTPUT);
```

```
digitalWrite (pin, HIGH/LOW);
```

```
ex: digitalWrite(13, HIGH);
```

```
delay (time_ms);
```

```
ex: delay(2500);
```



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KADAPA, AP - 516 005

Certificate of Completion

This is to certify that

Mr/Ms. Avula Nagendra Babu

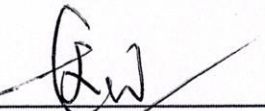
Bearing the Roll No 189Y1A0407

has Successfully completed certification course on

Programming with Arduino

From 08/09/2020 to 24/09/2020, Organized by Department of

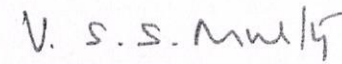
Electronics & communication Engineering



Coordinator



Head Of Department



Principal



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Mr/Ms. G. chaitanya

Bearing the Roll No 189YIA0436

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Electronics & Communication Engineering.*

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Coordinator

[Signature]
Head Of Department

V. S. S. mullu
Principal



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KADAPA, AP - 516 005

Certificate of Completion

This is to certify that

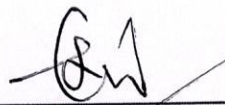
Mr/Ms. Sangati Ranadhina Reddy

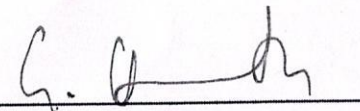
Bearing the Roll No 189Y1A04C4

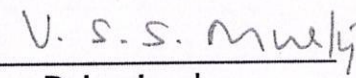
has Successfully completed certification course on

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Electronics & Communication Engineering.*


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Head Of Department


Principal



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Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.
Department of Electronics & Communication Engineering
Feedback Form

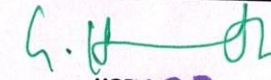
S.No.	Email address	Name of the student	Year & Semester	Branch	Roll Num	Is the course content met your expectation	Is the lecture sequence well planned	The contents of the course is explained with examples	Is the level of course high	Is the course exposed you to the new knowledge and practices	Is the lecturer clear and easy to understand	Rate the value of course in increasing your skills	Any issues
1	189Y1A0402@ksrmce.ac.in	ALLURI YADITHYA	B.Tech Vsem	ECE	189Y1A0402	Yes	Yes	Agree	Agree	Strongly agree	4	5	Nothing
2	189Y1A0403@ksrmce.ac.in	ANDLURU PREM REDDY	B.Tech Vsem	ECE	189Y1A0403	Yes	Yes	Agree	Agree	Strongly agree	5	5	Nothing
3	189Y1A0404@ksrmce.ac.in	ARAVA SHYAMDEEP	B.Tech Vsem	ECE	189Y1A0404	Yes	Yes	Agree	Agree	Strongly agree	4	5	Good
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5	189Y1A0407@ksrmce.ac.in	AVULA NAGENDRABABU	B.Tech Vsem	ECE	189Y1A0407	Yes	Yes	Agree	Agree	Strongly agree	5	5	Good
6	189Y1A0408@ksrmce.ac.in	AVULA SRIKANTH	B.Tech Vsem	ECE	189Y1A0408	Yes	Yes	Agree	Agree	Strongly agree	4	5	very good
7	189Y1A0409@ksrmce.ac.in	BAIMUTHAKA MAHESH	B.Tech Vsem	ECE	189Y1A0409	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Nothing
8	189Y1A0414@ksrmce.ac.in	BAYANABOINA REDDI SUBBARAYUDU	B.Tech Vsem	ECE	189Y1A0414	Yes	Yes	agree	Agree	Strongly agree	4	4	no
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11	189Y1A0417@ksrmce.ac.in	BOGGALA CHANDRA SEKHAR	B.Tech Vsem	ECE	189Y1A0417	Yes	Yes	Agree	Agree	Strongly agree	5	4	Good
12	189Y1A0418@ksrmce.ac.in	BOMMIREDDY LAKSHMI PRASANNA	B.Tech Vsem	ECE	189Y1A0418	Yes	Yes	agree	Agree	Strongly agree	5	5	Good


13	189Y1A0422@ksrmce.ac.in	BOREDDY MANJUNATH REDDY	B.Tech Vsem	ECE	189Y1A0422	Yes	Yes	agree	Agree	Strongly agree	3	5	Good
14	189Y1A0423@ksrmce.ac.in	BUDDA SREEKANTH REDDY	B.Tech Vsem	ECE	189Y1A0423	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
15	189Y1A0424@ksrmce.ac.in	BUGULU VINAY KLIMAR REDDY	B.Tech Vsem	ECE	189Y1A0424	Yes	Yes	agree	Agree	Strongly agree	4	4	very good
16	189Y1A0425@ksrmce.ac.in	CHALLA LOKESHAIDU	B.Tech Vsem	ECE	189Y1A0425	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
17	189Y1A0426@ksrmce.ac.in	CHALLA SAI KISHORE	B.Tech Vsem	ECE	189Y1A0426	Yes	Yes	agree	Agree	Strongly agree	3	5	no
18	189Y1A0426@ksrmce.ac.in	CHALLA SURENDRA REDDY	B.Tech Vsem	ECE	189Y1A0427	Yes	Yes	agree	Agree	Strongly agree	4	5	nothing
19	189Y1A0430@ksrmce.ac.in	CHINTHALACHERUVU SAI NATH	B.Tech Vsem	ECE	189Y1A0430	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Good
20	189Y1A0431@ksrmce.ac.in	DASARI SIVANI (W)	B.Tech Vsem	ECE	189Y1A0431	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good
21	189Y1A0432@ksrmce.ac.in	DEGALA PRAHARIKA (W)	B.Tech Vsem	ECE	189Y1A0432	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Good
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28	189Y1A0444@ksrmce.ac.in	GONTUMUKKALA JYOTHIRMAYEE SAI PRASANNA (W)	B.Tech Vsem	ECE	189Y1A0444	Yes	Yes	agree	Agree	Strongly agree	3	4	no
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30	189Y1A0447@ksrmce.ac.in	GUDA GUNA SEK HAR REDDY	B.Tech Vsem	ECE	189Y1A0447	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	no
31	189Y1A0449@ksrmce.ac.in	GUNDAMRAJU RAJESH	B.Tech Vsem	ECE	189Y1A0449	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	nothing
32	189Y1A0451@ksrmce.ac.in	JONNALAGADLA HEMA LATHA (W)	B.Tech Vsem	ECE	189Y1A0451	Yes	Yes	agree	Agree	Strongly agree	5	5	Nothing
33	189Y1A0453@ksrmce.ac.in	KADAPANA VINAY KUMAR REDDY	B.Tech Vsem	ECE	189Y1A0453	Yes	Yes	agree	Agree	Strongly agree	5	4	no

34	189Y1A0454@ksrmce.ac.in	KADIRI LAKSHMI SNEHA	B.Tech Vsem	ECE	189Y1A0454	Yes	Yes	agree	Agree	Strongly agree	5	4	Nothing
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36	189Y1A0456@ksrmce.ac.in	KAMALAPURAM ARSHAD	B.Tech Vsem	ECE	189Y1A0456	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
37	189Y1A0458@ksrmce.ac.in	KANAPARTHI DIVYA (W)	B.Tech Vsem	ECE	189Y1A0458	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
38	189Y1A0459@ksrmce.ac.in	KARRU SREEKANTH REDDY	B.Tech Vsem	ECE	189Y1A0459	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
39	189Y1A0460@ksrmce.ac.in	KASI REDDY SIRI VENNELA (W)	B.Tech Vsem	ECE	189Y1A0460	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
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42	189Y1A0463@ksrmce.ac.in	KONDURU THARUN	B.Tech Vsem	ECE	189Y1A0463	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
43	189Y1A0464@ksrmce.ac.in	KONGANI KIRAN	B.Tech Vsem	ECE	189Y1A0464	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
44	189Y1A0465@ksrmce.ac.in	KOTHAKOTA CHINNARAYUDU	B.Tech Vsem	ECE	189Y1A0465	Yes	Yes	agree	Agree	Strongly agree	3	5	Good
45	189Y1A0466@ksrmce.ac.in	KOTTAGORLA REDDYVINOD	B.Tech Vsem	ECE	189Y1A0466	Yes	Yes	agree	Agree	Strongly agree	3	5	Nothing
46	189Y1A0467@ksrmce.ac.in	KOTTE MADHUBABU YADAV	B.Tech Vsem	ECE	189Y1A0467	Yes	Yes	Strongly agree	Agree	Strongly agree	2	5	Nothing
47	189Y1A0468@ksrmce.ac.in	KRISHNAM GANGA MAHESWAR REDDY	B.Tech Vsem	ECE	189Y1A0468	Yes	Yes	agree	Agree	Strongly agree	2	5	very good
48	189Y1A0471@ksrmce.ac.in	KURAKU NAGESWARA RAO	B.Tech Vsem	ECE	189Y1A0471	Yes	Yes	agree	Agree	Strongly agree	4	5	very good
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50	189Y1A0473@ksrmce.ac.in	LAKKIREDDY SAIPRANAVARSHITHA	B.Tech Vsem	ECE	189Y1A0473	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	nothing
51	189Y1A0474@ksrmce.ac.in	MADARASU SAI KRISHNA	B.Tech Vsem	ECE	189Y1A0474	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
52	189Y1A0475@ksrmce.ac.in	MALEPATI DEEPALI (W)	B.Tech Vsem	ECE	189Y1A0475	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
53	189Y1A04A0@ksrmce.ac.in	OMKARAM SRINIVASA DHEERAJ	B.Tech Vsem	ECE	189Y1A04A0	Yes	Yes	agree	Agree	Strongly agree	4	5	nothing

54	189Y1A04A1@ksrmce.ac.in	PAGIDI RAMESH	B.Tech Vsem	ECE	189Y1A04A1	Yes	Yes	agree	Agree	Strongly agree	4	5	nothing
55	189Y1A04A2@ksrmce.ac.in	PALAGIRI BHARGAVA REDDY	B.Tech Vsem	ECE	189Y1A04A2	Yes	Yes	agree	Agree	Strongly agree	4	5	nothing
56	189Y1A04A3@ksrmce.ac.in	PALEGAR SUNIL KUMAR	B.Tech Vsem	ECE	189Y1A04A3	Yes	Yes	agree	Agree	Strongly agree	4	5	nothing
57	189Y1A04B2@ksrmce.ac.in	POLANKI KUMAR ASWARTH	B.Tech Vsem	ECE	189Y1A04B2	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
58	189Y1A04B3@ksrmce.ac.in	POLURU TEJA VARDHAN	B.Tech Vsem	ECE	189Y1A04B3	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
59	189Y1A04B4@ksrmce.ac.in	PULA SAIRAM	B.Tech Vsem	ECE	189Y1A04B4	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	very good
60	189Y1A04B5@ksrmce.ac.in	PULLERPU OBULESU	B.Tech Vsem	ECE	189Y1A04B5	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	very good
61	189Y1A04B6@ksrmce.ac.in	PUTHA PAVAN KUMAR REDDY	B.Tech Vsem	ECE	189Y1A04B6	Yes	Yes	agree	Agree	Strongly agree	5	5	nothing
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63	189Y1A04B8@ksrmce.ac.in	RAJULA GANESH KUMAR REDDY	B.Tech Vsem	ECE	189Y1A04B8	Yes	Yes	agree	Agree	Strongly agree	5	5	Nothing
64	189Y1A04C0@ksrmce.ac.in	RAYACHOTY SWATHI (W)	B.Tech Vsem	ECE	189Y1A04C0	Yes	Yes	agree	Agree	Strongly agree	3	4	no
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66	189Y1A04C3@ksrmce.ac.in	SANA GUNAVIKESH	B.Tech Vsem	ECE	189Y1A04C3	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
67	189Y1A04C4@ksrmce.ac.in	SANGATI RANADHINA REDDY	B.Tech Vsem	ECE	189Y1A04C4	Yes	Yes	agree	Agree	Strongly agree	5	4	Good
68	189Y1A04D1@ksrmce.ac.in	SHAIK KHAJA HUSSAIN	B.Tech Vsem	ECE	189Y1A04D1	Yes	Yes	agree	Agree	Strongly agree	4	5	Good
69	189Y1A04D3@ksrmce.ac.in	SHAIK MOHAMMED MINHAAS	B.Tech Vsem	ECE	189Y1A04D3	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good
70	189Y1A04D4@ksrmce.ac.in	SHAIK UMAR SADIQ	B.Tech Vsem	ECE	189Y1A04D4	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	very good
71	189Y1A04D5@ksrmce.ac.in	SHELLA KRISHNA TEJA	B.Tech Vsem	ECE	189Y1A04D5	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	very good


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