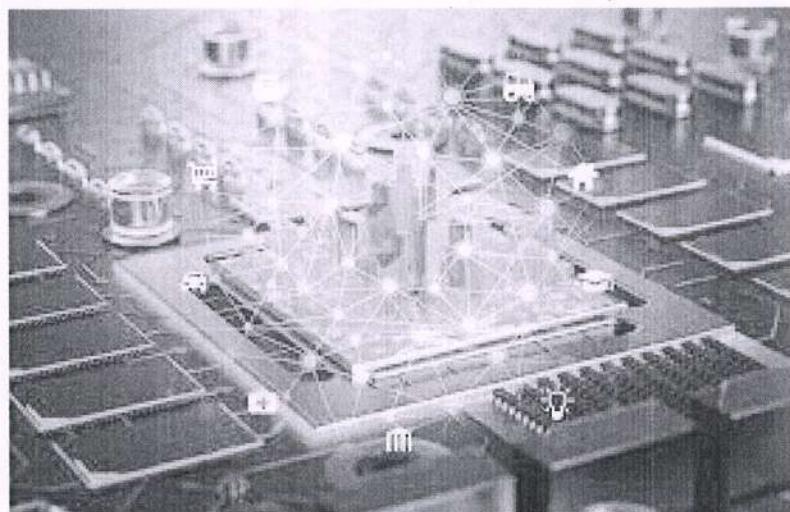




SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dindigul - Palani Highway, Dindigul - 624002.



VALUE ADDED COURSE

ON EMBEDDED SYSTEM

**Department of Electronics and Communication
Engineering**

May -2022

Event Coordinators: Dr. K. RAJESH, ASP/ECE & Mr. R. CAROL PRAVEEN, AP/ECE



1

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CIRCULAR



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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CIRCULAR

02.05.2022

The Department of ECE has planned to conduct the Technology Teaching for second year students on "Embedded Systems" is scheduled to be conducted between 04.05.2022 to 10.05.2022. The main objective of this Training is to learn about the basics of Microprocessor and Micro controller, Internet of things using Arduino IDE. Students are instructed to attend this six days (54 Hours) training and get benefited.

Resource Person Details:

Mr. K. Ilanchezhian, Manager-Technical

Mr. S. Raja, CRG Engineer

Mr. Mohamed Nawfal, CRG Engineer

1-
A/M6/22
Event Coordinator
(DR.K.RAJESH,
Asso. Prof.,
Dept. of ECE)

KD/
Staff in charge
K.DIVYA
(AP/ECE)

S. Kathiresan
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BROCHURE



SSM

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DEPARTMENT OF ELECTROINCS AND COMUNICATION ENGINEERING

“Technology Traning on Embedded System”

Date & Time :04-05-2022 to 10.05.2023

Time: 10.00 am to 01.00 pm

Venue : Seminar Hall - I

Resource Person

Mr.K.Ilanachezhian
Manager-Technical

Mr. S.Raja
CRG Engineer

Mr.Mohamed Nawfal,
CRG Engineer

Co-Ordinators
Dr.K.Rajesh,AP/ECE
Mr.R.Carol Praveen,AP/ECE

Faculty Incharge
K.Divya Ap/ECE

HoD/ECE
Dr.S.Karthigai Lakshmi

Principal
Dr.D.Senthilkumaran

All are cordially invited



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TRAINING SCHEDULE

Syllabus

IOT- 5 Days Training Program Syllabus

Day 1:

- Introduction to Electrical, Electronics and Communication Engineering
- Introduction to Power supply design
- Introduction to Microprocessor and Microcontroller
- Microcontroller and its GPIO pins
- GPIO pins of Microcontrollers (AT89C52, PIC16F877a, LPC82x)

Day 2:

- Introduction to PIC Microcontroller
- Interfacing LED with PIC Microcontroller
- C Programming concept for using Microcontroller with Peripheral devices
- Interfacing seven segment display with Microcontroller
- Interfacing 16*2 LCD display with Microcontroller
- Interfacing switch and sensor with Microcontroller
- Interfacing Motor, Relay with Microcontroller

Day 3:

- Introduction to Proteus Design suite
- Generating a model circuit in Proteus Environment for Simulation
- Search, Select, Pick and Place the component in Proteus
- Run and Check the status of the designed circuit



- Introduction to Arduino IDE and Arduino Board
- GPIO pins of Arduino Board
- Interfacing led, seven segment display, LCD, switch, sensor, alarm, relay and motor with Arduino Board

Day 4:

- Creating circuit model using arduino board and peripherals (led,lcd,sevensegment,sensor,alarm,motor and relay) in Proteus design suite and uploading the program in board and simulate.
- Creating Model Project using Arduino Uno board
- Introduction to NODEMCU(ESP8266)
- Using the digital and analog pins of ESP8266 for interfacing peripherals
- Practical using Microcontroller. Arduino Uno board, ESP8266 for led, seven segment, lcd, switch, sensor, relay and motor interfacing

Day 5:

- Introduction to IOT
- Current Business Trends in IOT
- Benefits of IOT
- Barriers of IOT
- Case study
- IOT application architecture
- IOT using Blynk and ESP8266
- Modeling Automation using IOT



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course Summary 2021-2022

Course Name: Embedded System

Course Duration: 54 hours

Year Offered: 2021-2022

Course Instructors: Mr.K.Illanchezhan,Manager,Technical

Mr.S.Raja, CRG Engineer.

Mr.Mohamed Nawfal,CRG Engineer.

Course Outcome:

On completion of the course, students will be able to understand the basic concepts of real time operating system design and to modal real time applications using embedded system concepts.

Course Type: Self Framed/Collaboration with Industry

Assessment Mode

Attendance: 54 hours

Number of Participants: 86

Scheme of Exam: MCQ Offline Mode



Course Co-ordinators

Ref. Copy

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HoD/ECE

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DEPARTMENT OF ECE

Embedded Systems

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2	922120106002	ABILASH M	Abilash
3	922120106003	AISHWARYA K	Aishwarya
4	922120106004	AISWARYA B	Aiswarya
5	922120106005	AKASH E	Akash
6	922120106006	ARAVINDKUMAR D	Aravindkumar
7	922120106007	ARULMURUGAN S	S. Arumugam
8	922120106008	BALAJI S	S. Balaji
9	922120106009	BALAJIPRASANTH G	G. Balajiprasanth
10	922120106010	BHUVANESWARI A	Bhuvaneswari A.
11	922120106011	CHANDRU R	R Chandru
12	922120106012	DEVAVARSHA M	Devavarsha
13	922120106013	GLADYS NANCY J	Gladys Nancy
14	922120106014	GOKILAVANI K	Gokilavani
15	922120106015	HARIHARAN K	Hariharan K
16	922120106016	HARINI J	J. Harini
17	922120106017	HARI PRASATH S	S. Hari Prasath
18	922120106018	HARSHINI A	A. Harshini
19	922120106019	HEMA M	M. Hema
20	922120106020	HIBA ROSHAN A	A. Hiba Roshan
21	922120106021	JANANI S	S. Janani
22	922120106022	JAWAHAR S	Jawahar S
23	922120106023	JEEVA V	Veeva
24	922120106024	JEEVITHA S	Jeevitha
25	922120106026	JOELGODFREY T	T. Joelgody
26	922120106027	KANIMOZHI P	Kanimozhi
27	922120106028	KARAN M	M. Karan
28	922120106029	KARTHIKA B.I	B. Karthika
29	922120106030	KARTHIKA P	P. Karthika
30	922120106031	KAVYA SHREE R K	Kavya Shree
31	922120106032	KESAVAN J	J. Kesavan

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33	922120106034	LAVANYA R	Lavanya.
34	922120106035	MADHUBALA M	M. Madhu.
35	922120106036	MANISHA B	Manisha B.
36	922120106037	MATHAN K	Mathan. K.
37	922120106038	MOHAIDEEN ABDUL KADHAR	R. M. Q.
38	922120106039	MOHAMED FAROOK J	M.F.
39	922120106040	MOHAMED IRFAN A	A. M. Istan
40	922120106041	NAGADHARSHINI G	Naga Dhershini or.
41	922120106042	NANTHISWARAN M.	N. N. N. Swaran
42	922120106043	NIRANJANA M	Niranjana. M
43	922120106044	NITHIES KUMAR E	Nithies Kumar. E
44	922120106045	PANDIMA DEVI B	Pandavi.
45	922120106046	PAVITHRA R	R. Pavithra.
46	922120106047	PRIYADHARSHINI A	Priyadarshini A.
47	922120106048	PRIYANKA S	S. Priyanka.
48	922120106049	RASITHA MARYAM K	Rasitha Maryam. K.
49	922120106050	REENA V	Reena
50	922120106051	RESHMITHA R	R. Reshma. R.
51	922120106052	SABITHA M V	Sabitha. M.V
52	922120106053	SAHIL AKTHAR Z	Sahil.
53	922120106054	SAKTHI PRIYA P	Sakthi.
54	922120106055	SANTHOSH KUMAR S	Santosh.
55	922120106056	SARAN P	Saran
56	922120106057	SELVAKUMAR S	Selvi.
57	922120106058	SETHU KISHOR R	Sethu Kishor. R
58	922120106059	SHANMUGARAJA K	Shanmugaraja
59	922120106060	SIVARAJ M	Sivaraj. m
60	922120106061	SIVASANKAR K	Sivasankar.
61	922120106062	SONALI M	Sonal
62	922120106063	SOWMIYA S	Sowmiya. S
63	922120106064	SOWMYA S	Sowmya. S
64	922120106065	SRI SATHYA NARAYANAN S	Sri Sathya Narayanan. S
65	922120106066	SUBASH PANDI R	Subash. Remu.

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67	922120106068	SUGASH A	Sugash.
68	922120106069	SUGUNTHON G	Sugunthon . G.
69	922120106071	TERRANCE RITHIK ARON S	Terrance Rithik . Aron S.
70	922120106072	THANGARAJ R	Thangaraj . R.
71	922120106073	UMA PRIYADHARSHINI J	Priyadarshini . J.
72	922120106075	VAISHNAVI P K	Vaishnavi . P . K.
73	922120106076	VARSHINI S	Varshini . S.
74	922120106077	VIGNESH M	Vignesh . M.
75	922120106078	VIGNESH P	Vignesh . P.
76	922120106079	VIGNESH P	Vignesh . P.
77	922120106080	VIGNESHWAR B	Vigneswar . B.
78	922120106082	YASHICA S	Yashica . S.
79	922120106301	AGIL MARIVALAN J	Agil Marivalan . J.
80	922120106302	CARLOS.V	Carlos . V.
81	922120106303	HARI KRISHNAN S	Hari Krishnan . S.
82	922120106304	J.KARTHIKEYAN	J.Karthikeyan .
83	922120106305	LOYALAN LOGESH RAJA J	Loyalan Logesh . J.
84	922120106306	NITHISH M K	Nithish . M . K.
85	922120106308	THAMARAI SARAVANAN M P R	Thamarai . Saravanam . P . R.
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E-mail: collegeinfo@prolifictraining.com

Prolific: Asia's leading advanced industrial vocational training company with industrial automation training at its core

Prolific Systems & Technologies Pvt. Ltd. is Asia's leading advanced industrial automation training company having fully equipped, asset backed facilities across 21 branches in 10 Indian states. Prolific imparts extensive, in-depth, hands-on practical training to graduate and undergraduate engineers and experienced working professionals on diversified industrial automation platforms currently used in the industry and equips trainees with skill sets necessary to function effectively in technology intensive areas of industrial asset management, maintenance, projects, production, and international project consultancy.

Prolific: A bridge between academia and industry. Training for composite skill set.

Prolific bridges the gap between academia and industry by creating immediately employable, multi-skilled manpower that can enhance productivity and efficiency of industrial operations. Prolific's hands-on practical training is aimed at creating the technical workforce with advanced skill-set from diverse engineering streams like control systems, instrumentation systems, electrical systems, electro-hydraulics and electro-pneumatic systems, and embedded systems. The insight that Prolific has gained, by studying automation systems at various plants both in India and abroad and thereby developing customized programs, is continuously employed to create training modules that help graduate and undergraduate engineers and technicians develop skill sets necessary to rise fast in the technologically intensive environment in the career streams mentioned above.



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Prolific: Round the year training programs

Prolific conducts round the year training programs at engineering and diploma institutes in India and has MOUs with numerous technical institutes for imparting training in following platforms. The training can be conducted either in the premises of the institution or at Prolific. In the Industrial Automation segment, hands-on training on PLCs like Allen Bradley, Siemens, and Modicon, SCADA of Wodewware InTouch, Instrumentation covering various sensors and transmitters, and Drives of Yaskawa and Altivar are covered in the long term program (25 days / 3 hours daily). The short term program is for 6 days / 6 hours daily. In the Embedded Systems segment, hands-on training is given so as to develop strong product development capabilities. The long term training (25 days / 3 hours daily) covers hardware-software integration modules on Prolific's specially designed kits, advanced Embedded C, Robotics, ARM and RTOS. The long term training covers project work aimed at developing industry demanded practical skills. The short term program is for 6 days / 6 hours daily.

The screenshot shows the homepage of the Prolific Training website. At the top, there is a navigation bar with links for phone number (8879780703), email (enquiries@prolific.training.com), and 'Prolific's Engineering Projects Offerings'. Below the navigation bar are two logos: 'The Automation People' and 'Automation Training Partner'. To the right of these are buttons for 'Become Training Franchisee', 'QUICK ENQUIRY', and 'Student Registration'. A social media icon bar for Facebook, Twitter, and Google+ is also present. The main banner features the text 'Excellent Placement Record with Strong Linkages with Employers.' and a background image of several silhouetted figures. On the left side of the banner, there is a vertical sidebar with the text 'ENQUIRIES NEEDED MORE INFO'. Below the banner, there are sections for 'Placements' (mentioning 'Placement Stories' and a candidate named Harshala Girane), 'Place Success' (with a photo of a woman and a 'Candidate Bio' section), and 'Opportunities' (with a photo of industrial equipment and a brief description). The footer contains links for 'INDUSTRIAL AUTOMATION', 'TRAINING PROGRAMS', 'EMBEDDED TECHNOLOGY', 'Why Prolific', 'CONTACT', 'SITE MAP', 'BLOG', and 'WHAT'S NEW?'. It also lists recent placements for students Atul Dhir, Somveer, Parthiban R, and P.Thanasekar, along with their respective placement details.

Figure: 1. Company Home Page



CHAPTER-1

OBJECTIVE OF TECHNOLOGICAL TEACHING

Many of today's high-demand jobs were created in the last decade, according to the International Society for Technology in Education (ISTE). As advances in technology drive globalization and digital transformation, teachers can help students acquire the necessary skills to succeed in the careers of the future.

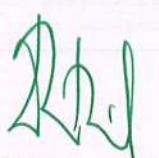
Electronics and Communications Engineering (ECE) involves researching, designing, developing, and testing of electronic equipment used in various systems. Electronics and Communications engineers also conceptualize and oversee the manufacturing of communications and broadcast systems. This stream of engineering deals with analog transmission, basic electronics, microprocessors, solid-state devices, digital and analog communication, analog integrated circuits, microwave engineering, satellite communication, antennae, and wave progression. It also deals with the manufacturing of electronic devices, circuits, and communication equipment.

The future of technology advancements is likely to depend on the developments in the electronics and communication field. Electronics and communication are the two primary pillars of our society these days. In the coming years, the trend will continue, and ECE will eventually emerge as one of the most prominent fields of engineering studies with substantial demand for ECE engineers all over the world.

Objective:

1. ECE Students are instructed to undergo at least one latest technology training in every semester that should be requirement of core industry.
2. After completing this training, ECE students are able to do the Main project or Mini project in every semester with maximum of three members in a batch for Main project and one member for Mini project.
3. Project report has to generated and submitted in department and college Library.
4. ECE students are instructed to convert their project into viable products for societal needs.




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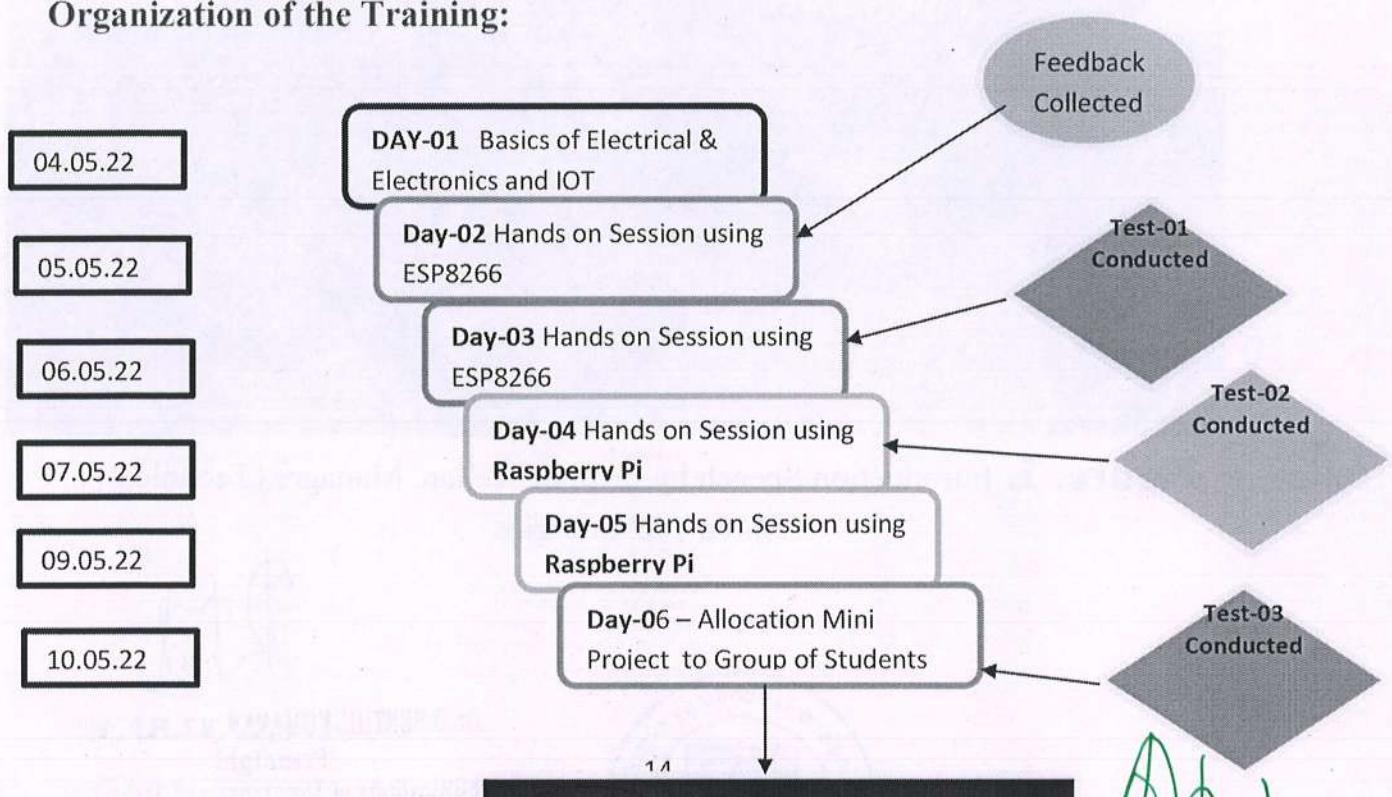
CHAPTER 2

INTRODUCTION ABOUT THE TRAINING

The explosive growth of the “Internet of Things” is changing our world and the rapid drop in price for typical IoT components is allowing people to innovate new designs and products at home. Electronics industry continues to make vast strides in providing functionally rich inexpensive devices for consumers and various industries including agriculture. Smart mobile robots – both personal and industrial - are proliferating fueled by efficient manufacturing combined with high energy battery technology. All these devices contain many sensors driven by embedded controllers and computing processors that are termed as microcontrollers. These microcontrollers typically offer less performance than the latest processors used in laptop and desktop personal computers, but they are sufficiently powerful and frugal in cost and energy use.

The programming language in the embedded systems course is C due to its efficiency in memory allocation, run time, and its ability to directly manipulate hardware components, although higher level functional languages such as Embedded C are becoming popular for microcontrollers.

Organization of the Training:



CHAPTER 3

SESSION PHOTOS

Introduction Speech delivered by Er.Ilanchelian , Manager (Technical) , Shree technologies about the importance of embedded systems and the applications. He also added that the job opportunities in the core field are booming and required more man power in the core area. He advised students to concentrate more on core subjects like Digital Electronics, VLSI, DSP, Signals and Systems, Microprocessor and Micro controller etc...



Figure: 1. Introduction Speech by Er.Ilancheelian, Manager (Technical) ,
Shree Technologies



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Technical session was handled by Mr.S. Raja, CRG Engineer in Networks Laboratory and Mr. Mohamed Nawfal, CRG Engineer in DSP Laboratory. Both of them started with the basics of Microprocessor and Micro controller and then slowly moved to the Simulation software (Proteus Design Suite). From second day onwards, students were able to use the Proteus Simulation Suite and start writing the Embedded -C coding

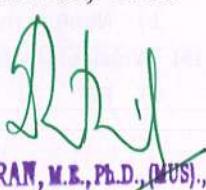


Figure: 2. Technical session given by Mr.S. Raja, CRG Engineer in Networks Laboratory



Figure: 3. Technical session given by Mr. Mohamed Nawfal, CRG Engineer in Networks Laboratory




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CHAPTER- 4

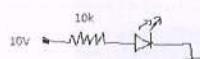
TEST QUESTIONS

TEST-1

Choose the best:

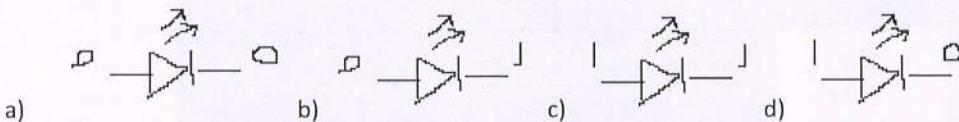
Name/ Reg.No:

- 1) How many Ports are there in PIC16F877A microcontroller
 - a) 3
 - b) 4
 - c) 5
 - d) 6
- 2) Which of the following port of PIC16F877A has 3 pins only
 - a) RA
 - b) RB
 - c) RD
 - d) RE
- 3) What is the programming environment used to develop programs for PIC microcontrollers
 - a) Keil
 - b) Matlab
 - c) Arduino
 - d) MP LAB
- 4) In the circuit find current through ideal LED



- a) 1A
- b) 1mA
- c) 1 uA
- d) 100mA

- 5) Which LED will emit light



- 6) Which of the following software tool suite is primarily used by Electronic Design Automation Engineers
 - a) SCADA
 - b) Proteus design suite
 - c) Pro E
 - d) AutoCAD
- 7) int i; for(i=0;i<100;i++); print(i)
In this program, i is printed as
 - a) 0,1,2.....99
 - b) 0,1,2.....100
 - c) 1,2,3...99
 - d) 1,2,3.....100
- 8) Int a,b,c;
If (a=b), print(0); if (b=c), print(1); if (c=a), print(2); if (a=b=c), print(3)
In this program, the result value is 2 when
 - a) a=b
 - b) b=c
 - c) c=a
 - d) a=b=c
- 9) In which of the following LED can work properly
 - a) DC voltage
 - b) AC voltage
 - c) AC current
 - d) Both a and b
- 10) What is a compiler
 - a) Analog circuit that reduces the voltage level in output
 - b) Digital circuit that reduces the voltage level in output
 - c) Tool which is used to convert the programming language into machine language
 - d) None of the above
- 11) Which of the following defines the RA port's 0th pin as output pin in PIC16F877A
 - a) TRISA0=0
 - b) TRISA0=1
 - c) TRISA=0
 - d) TRISA=1
- 12) TRISB=0 means
 - a) RB as input
 - b) RB as output
 - c) RBO as input
 - d) RBO as output
- 13) What is the header file for PIC microcontrollers
 - a) Pic.h
 - b) Picic.h
 - c) Cip.h
 - d) Cipic.h
- 14) PIC expansion
 - a) Peripheral Interface Controller
 - b) Pictorial Indication Controller
 - c) Peripheral interchange controller
 - d) None of these
- 15) Which of the following Port of pic16f877a does not have 8 pins
 - a) RA
 - b) RB
 - c) RC
 - d) RD

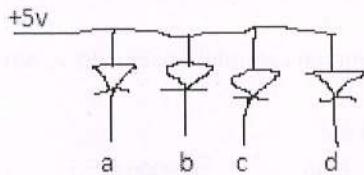


TEST-2

Choose the best:

Name/ Reg.No:

- 1) What is the BCD code for 12
a) 1100 b) 1010 c) 00010010 d) 01001000
- 2) If I use 2 bytes integer in my program then how many bits are required to represent the integer
a) 4 b) 8 c) 16 d) 32
- 3) 0101 is signed number representation. What is the decimal value
a) +5 b) -5 c) +3 d) -3
- 4) What is the HEX CODE for 10100101
a) 5a b) 95 c) 59 d) a5
- 5) If we want to glow all leds in the following figure, choose which option is suitable (assume the diode simple as led)



- a) a=b=c=d=1 b) a=b=c=d=0 c) both a and b d) None of these
- 6) If I use 4 bit data, then how many possibilities I have
a) 4 b) 8 c) 16 d) 64
- 7) What is the Hex Code to display "2" in 7 segment display (Common anode) assume dp as zero
a) 02 b) ad c) da d) 24
- 8) What is the Hex Code to display "8" in 7 segment display (Common cathode) assume dp as zero
a) Fe b) 00 c) ff d) 9a
- 9) 16 * 2 LCD display can display how many characters
a) 16 b) 8 c) 32 d) 64
- 10) PIC16F877A is a bit microcontroller
a) 8 b) 16 c) 12 d) 32
- 11) If 10 MHz frequency signal is set as input to a microcontroller, What is time period of the controller
a) 100 msec b) 1 msec c) 10 usec d) 1000 sec
- 12) Which of the following pin used as UART/USART data transmission in PIC16F877A
a) SID/SDA b) CCP1/CCP2 c) OSC1/OSC2 d) Tx/Rx
- 13) Which of the following filter allows low frequency signal
a) LPF b) HPF c) BPF d) BSF
- 14) Multiplexer has how many output
a) 1 b) as many as input c) 0 d) half of input
- 15) Which of the following is digital component
a) Resistor b) IC c) Capacitor d) Inductor

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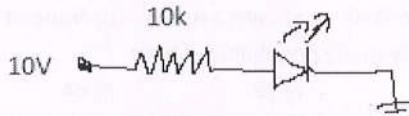


TEST-3

Name/ Reg.No:

Choose the correct option:

- 1) In Digital, Ground is equal to
 - a) 0
 - b) 1
 - c) Either 0 or 1
 - d) Z
- 2) In What condition the Light Emitting Diode Emits light
 - a) Forward biased
 - b) Reverse bias
 - c) Both a and b
 - d) Naturally emits
- 3) How many Ports are there in PIC16F877A
 - a) 4
 - b) 5
 - c) 6
 - d) 8
- 4) What is the Hex Code for 10111001
 - a) B9
 - b) BA
 - c) AB
 - d) C9
- 5) What is the Hex Code to display "0" in 7 segment display(Common anode) assume dp as zero
 - a) 02
 - b) ad
 - c) da
 - d) 24
- 6) What is the Hex Code to display "0" in 7 segment display(Common cathode) assume dp as zero
 - a) Fe
 - b) 00
 - c) ff
 - d) 9a
- 7) In the circuit find current through LED with cut off voltage of 1 V
 - b) 0.9A
 - c) 0.9mA
 - d) 0.9 uA

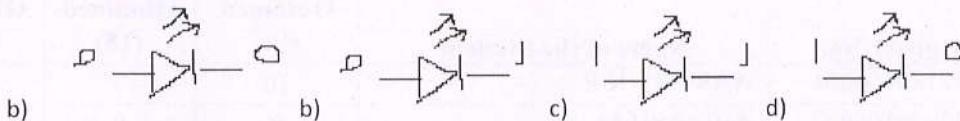


- 8) 16 * 2 LCD display has how many pins
 - b) 12
 - c) 8
 - d) 32
- 9) PIC16F877A is a bit microcontroller
 - b) 8
 - c) 16
 - d) 32
- 10) Sensor can detect which of the following
 - a) Temperature
 - b) Moisture
 - c) Gas
 - d) All the above
- 11) What is the programming environment used develop program for PIC microcontrollers
 - b) Keil
 - c) Matlab
 - d) Arduino
 - d) MP LAB
- 12) Which one of the following desires the time period of the controller
 - a) Port
 - b) Oscillator
 - c) Interrupt
 - d) Power supply
- 13) If 1 MHz frequency signal is set as input to a microcontroller, What is time period of the controller
 - a) 100 msec
 - b) 1 msec
 - c) 1 usec
 - d) 1000 sec
- 14) Which one set the zeros pin of port B as output in PIC16F877A
 - a) TRISB0=0
 - b) TRISB=0
 - c) TRISB0=1
 - d) TRISB=0xff
- 15) USART in PIC16F877A is used for
 - a) Timers
 - b) Counters
 - c) Interrupt
 - d) Serial Communication
- 16) Which of the following is used as external Oscillator connection pins
 - a) Osc1/osc2
 - b) sdi/sda
 - c) psp0/psp1
 - d) ccp0/ccp1
- 17) "Int" data type in C programming has how many bytes
 - a) 1
 - b) 2
 - c) 3
 - d) 8
- 18) int i; for(i=0;i<=100;i++); print(i)
In this program, i is printed as




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- b) 0,1,2.....99 b) 0,1,2....100 c) 1,2,3...99 d) 1,2,3.....100
- 19) PORTB=0x22, for this comment how many LED will emit light when all port pins are connected with LED each(controller is taken as source point)
 a) 2 b) 4 c) 6 d) 1
- 20) What is Baud rate
 a) Bits/second b) bytes/second c) word/second d) doubleword/second
- 21) What is the compiler is used for PIC microcontroller
 a) High tech C b) XC8 C c) XC16 C d) All the above
- 22) Which LED will emit the light



- 23) Which of the following software tool suite is primarily used by Electronic Design Automation Engineers
 b) SCADA b) Proteus design suite c) Pro E d) AutoCAD
- 24) Which of the following is NOT used for communication purpose
 a) SPI b) USB c) GSM d) MQ2
- 25) How many digital pins are there in Arduino Uno board
 a) 10 b) 12 c) 14 d) 16
- 26) If you want to make 1 second delay in Arduino Uno, which one is best suitable
 a) Delay(1) b) delay(10) c) delay(100) d) delay(1000)
- 27) IOT stands
 a) Internet of Things b) Interest of Tax c) Interrupt of Timer d) Invest of Telecommunication
- 28) Which of the following App is used in IOT
 a) Telegram b) Spotify c) Snapdeal d) Blynk
- 29) Which of the Following SOC is used as WI-FI module for IOT
 a) ESB8266 b) Arduino c) Raspberry pi d) All the above
- 30) How many analog input pins are there in Arduino uno board
 a) 0 b) 4 c) 6 d) 8




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CHAPTER- 5

CONSOLIDATED TEST MARKS

S. No	Register No.	Name of the Student	Marks Obtained (15)	Marks Obtained (15)	Mark Obtained (30)
1	922120106001	AARTHY K P	10	7	18
2	922120106002	ABILASH M	9	9	18
3	922120106003	AISHWARYA K	10	7	15
4	922120106004	AISWARYA B	10	7	13
5	922120106005	AKASH E	AB	9	3
6	922120106006	ARAVINDKUMAR D	11	9	15
7	922120106007	ARULMURUGAN S	9	8	16
8	922120106008	BALAJI S	11	9	15
9	922120106009	BALAJIPRASANTH G	9	7	15
10	922120106010	BHUVANESWARI A	11	7	15
11	922120106011	CHANDRU R	8	7	11
12	922120106012	DEVAVARSHA M	10	7	16
13	922120106013	GLADYS NANCY J	10	8	18
14	922120106014	GOKILAVANI K	11	7	18
15	922120106015	HARIHARAN K	11	8	10
16	922120106016	HARINI J	10	8	15
17	922120106017	HARI PRASATH S	11	10	22
18	922120106018	HARSHINI A	10	7	16
19	922120106019	HEMA M	9	7	15
20	922120106020	HIBA ROSHAN A	9	7	15
21	922120106021	JANANI S	8	7	15
22	922120106022	JAWAHAR S	10	10	16
23	922120106023	JEEVA V	11	9	16
24	922120106024	JEEVITHA S	9	7	15
25	922120106026	JOELGODFREY T	9	7	15
26	922120106027	KANIMOZHI P	10	7	12
27	922120106028	KARAN M	11	9	25
28	922120106029	KARTHIKA BI	AB	7	15
29	922120106030	KARTHIKA P	10	7	15
30	922120106031	KAVYA SHREE R K	11	7	16
31	922120106032	KESAVAN J	10	11	15
32	922120106033	LATHEEP MAIDEEN A	9	10	15
33	922120106034	LAVANYA R	10	7	11
34	922120106035	MADHUBALA M	11	8	16
35	922120106036	MANISHA B	11	AB	16



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36	922120106037	MATHAN K	12	8	16
37	922120106038	MOHAIDEEN ABDUL KADHAR	11	12	15
38	922120106039	MOHAMED FAROOK J	10	9	9
39	922120106040	MOHAMED IRFAN A	13	10	11
40	922120106041	NAGADHARSHINI G	11	10	11
41	922120106301	AGIL MARIVALAN J	AB	8	10
42	922120106305	LOYALAN LOGESH RAJA J	11	6	11
43	922120106306	NITHISH M K	10	4	11

S. No	Register No.	Name of the Student	Marks Obtained (15)	Marks Obtained (15)	Mark Obtained (30)
1	922120106042	NANTHISWARAN M	AB	10	15
2	922120106043	NIRANJANA M	10	8	21
3	922120106044	NITHIES KUMAR E	5	3	18
4	922120106045	PANDIMA DEVI B	10	8	19
5	922120106046	PAVITHRA R	9	7	17
6	922120106047	PRIYADHARSHINI A	9	6	17
7	922120106048	PRIYANKA S	9	8	17
8	922120106049	RASITHA MARYAM K	9	7	21
9	922120106050	REENA V	10	7	15
10	922120106051	RESHMITHA R	11	8	10
11	922120106052	SABITHA M V	AB	10	19
12	922120106053	SAHIL AKTHAR Z	13	7	16
13	922120106054	SAKTHI PRIYA P	12	7	20
14	922120106055	SANTHOSH KUMAR S	10	9	15
15	922120106056	SARAN P	8	10	15
16	922120106057	SELVAKUMAR S	11	7	16
17	922120106058	SETHU KISHOR R	9	10	12
18	922120106059	SHANMUGARAJA K	AB	5	15
19	922120106060	SIVARAJ M	8	9	11
20	922120106061	SIVASANKAR K	0	8	17
21	922120106062	SONALI M	11	7	8
22	922120106063	SOWMIYA S	12	6	8
23	922120106064	SOWMYA S	12	11	19
24	922120106065	SRI SATHYA NARAYANAN	11	10	21
25	922120106066	SUBASH PANDI R	AB	10	16
26	922120106067	SUBASHREE M	12	11	16
27	922120106068	SUGASH A	9	8	16
28	922120106069	SUGUNTHON G	9	7	16
29	922120106070	SURENDHAR NATH K	AB	AB	AB



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30	922120106071	TERRANCE RITHIK ARON S	9	9	20
31	922120106072	THANGARAJ R	11	9	18
32	922120106073	UMA PRIYADHARSHINI J	11	8	24
33	922120106075	VAISHNAVI P K	10	11	17
34	922120106076	VARSHINI S	11	8	16
35	922120106077	VIGNESH M	14	10	15
36	922120106078	VIGNESH P	10	9	21
37	922120106079	VIGNESH P	9	9	20
38	922120106080	VIGNESHWAR B	10	9	17
39	922120106081	VIJAY RAGUNATH G S	AB	AB	21
40	922120106082	YASHICA S	10	10	21
41	922120106302	CARLOS.V	10	AB	15
42	922120106303	HARI KRISHNAN S	11	10	19
43	922120106304	J.KARTHIKEYAN	10	7	9
44	922120106308	THAMARAI SARAVANAN M P R	8	5	15
45	922120106309	VARUN A	12	8	17

III ECE C

S. No	Register No.	Name of the Student	Mark Obtained (15)	Mark Obtained (15)	Mark Obtained (30)
1	922119106088	Swetha	12	10	AB
2	922119106091	SHALINI.S	13	12	24
3	922119106093	SHARMILA SRINITHI	13	AB	21
4	922119106103	SUJAN	10	AB	18
5	922119106111	VEDHA.R	14	10	AB
6	922119106112	VENGADESH	14	AB	18



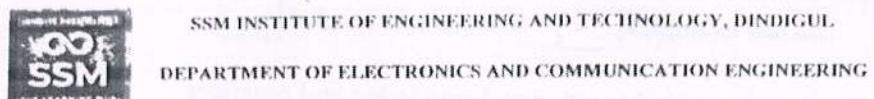
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CHAPTER- 6

FEEDBACK BY STUDENTS

Feedback is collected from the students to improve the training progress. Based on the feedback collected from students on second day content flow was made slow down and interaction with students were also improved.

The overall Feedback is good. Students are expecting more Technological Teaching in every semester.



TECHNOLOGY TEACHING ON "EMBEDDED SYSTEM" FEEDBACK FORM (During Training)

1. The course content met with your expectations
Strongly Disagree Strongly Agree
2. The contents were illustrated with
Too few examples Adequate Examples
3. The course exposed you to new knowledge and practices
Strongly Disagree Strongly Agree
4. Regularity and punctuality of teacher
Excellent Very good Satisfactory
5. Individual attention
Excellent Very good Satisfactory
6. How would you rate pace of the delivery?
Fast Slow Normal
7. What could be improved?

Their fluency of speaking is too fast. So that we can't reach the point correctly. Interaction with us is less satisfaction.

Name : A Harshini (DSB LAB)
Register Number : 922120106018
Year/Class : II / ECE - A

Figure: 4. Feedback given by II-A student

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TECHNOLOGY TEACHING ON "EMBEDDED SYSTEM"
FEEDBACK FORM (During Training)

1. The course content met with your expectations
Strongly Disagree Strongly Agree
2. The contents were illustrated with
Too few examples Adequate Examples
3. The course exposed you to new knowledge and practices
Strongly Disagree Strongly Agree
4. Regularity and punctuality of teacher
Excellent Very good Satisfactory
5. Individual attention
Excellent Very good Satisfactory
6. How would you rate pace of the delivery?
Fast Slow Normal
7. What could be improved?

The way of teaching was good,
it is better if they give test and
works (or) assignments.

Name : R. Pavithra (DSB - Lab)

Register Number : 988180106046

Year/Class : II B

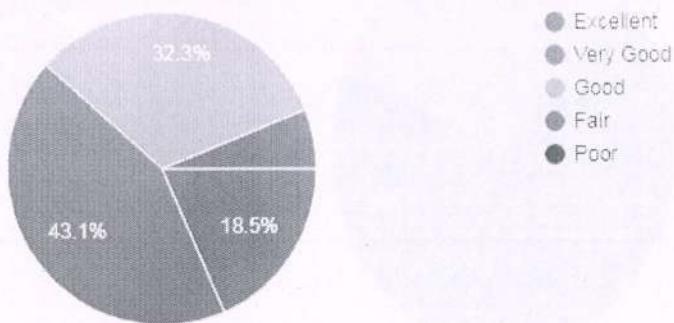
Figure: 5. Feedback given by II-B student



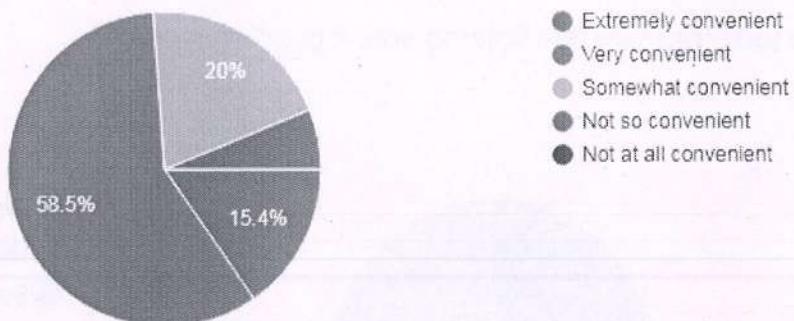
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OVERALL FEEDBACK

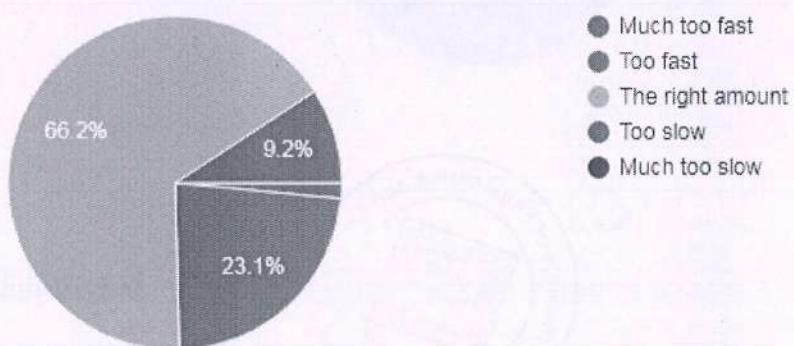
Overall, how would you rate the Training?



How convenient was the time that the course was held?



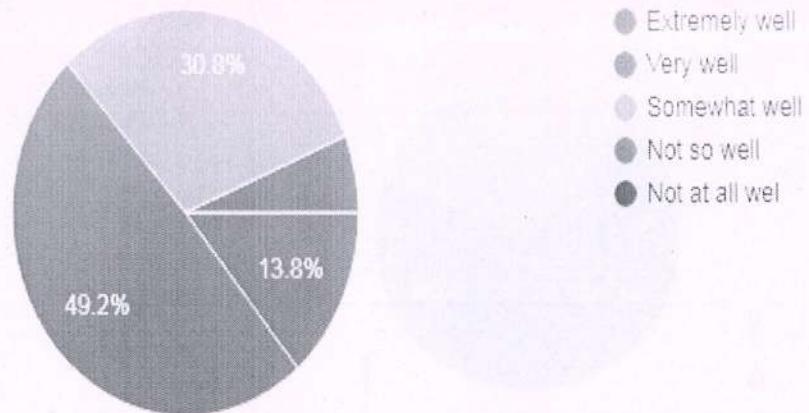
Was the speed with which your instructor presented the concepts too fast, too slow, or about right?



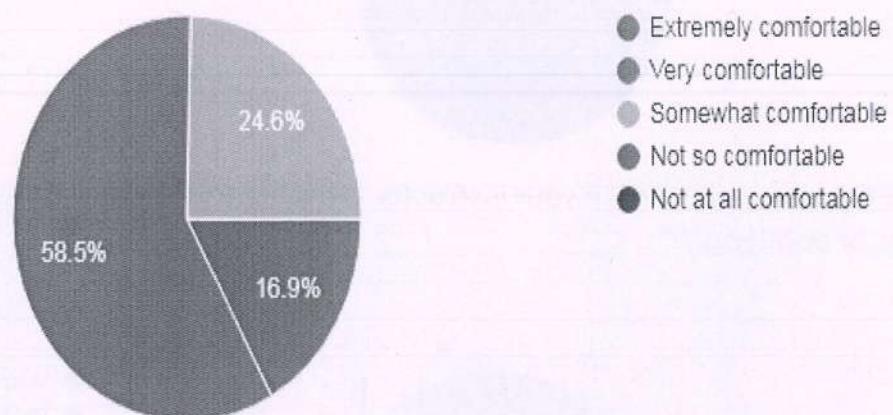
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How well did your instructor answer students' questions?



How comfortable did you feel voicing your opinions in class?



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CHAPTER- 7

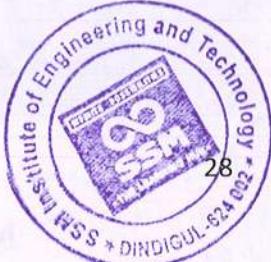
EVENT REPORT

As per order given by our respected Principal Dr. D. Senthil Kumaran, The Technological Teaching for all the students to be implemented immediately that should be life changing learning process in their academic. To implement this training, Department of Electronics and Communication Engineering is immediately planned and got approval from company as well as management of SSMIET. The date was fixed between May 4, 2022 to May 10, 2022 (6 Days) in offline mode. Students of ECE department were instructed to attend this Technological Training on “Embedded Systems” without fail, and also insist them to ready for project expo at the end of the training.

The session was started with introduction class at seminar hall-01, Er.Ilancheliyan , Manager (Technical) advised our ECE students to concentrate on the core subjects and pointed out the importance of core jobs. The technical session was started after the introduction class; session was handled by Mr.S.Raja and Mr. Mohamed Nawfal in various places.

Students of ECE were completely involved in the training and asked lot of questions during the Hands on training. Trainers gave plenty of project ideas to students and encouraged them to do mini project immediately after completing this training session. Three tests were conducted during the training .

As per the plan, Project Expo was conducted on 16.05.2022. The best projects were scrutinized and selected for rewards by the team of senior faculty members of ECE department (Dr.C.Sujatha, Professor/ECE, Dr.K.Vinoth kumar,Associate Professor and Mr.K.S.Arun kumar , Assistant Professor). Prize distribution was arranged and distributed by our honorable Principal.



A handwritten signature in black ink, appearing to read "Dr. D. Senthil Kumaran".

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CHAPTER 8

PROJECT EXPO

The outcome of this entire training was ‘Project Expo’ which was conducted on 16.05.2022 afternoon. Twelve teams were participated and exhibited their talents in various field of interests.

TEMPATURE BASED FAN SPEED CONTROL & MONITORING USING ARDUINO

AARTHY K P

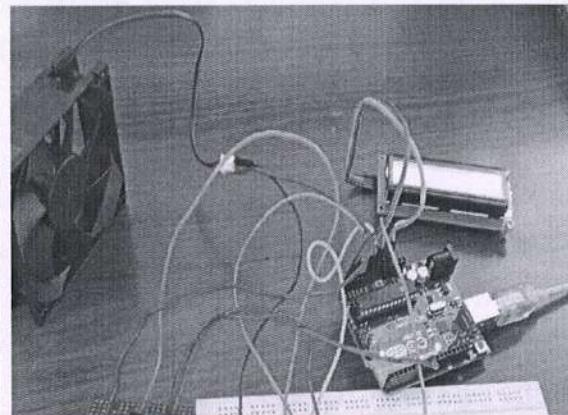
BHUVANESWARI A

HEMA M

HARINI J

JANANI S

KARTHIKA P



OBJECT COUNTER

MOHAMED FAROOK J

KARAN M

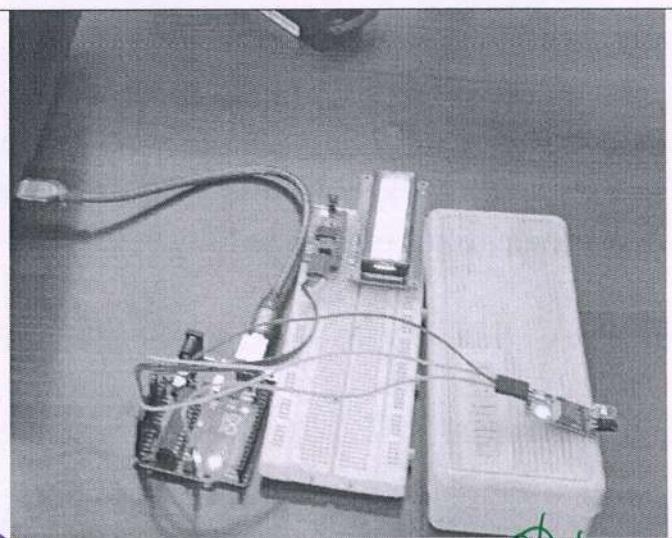
HARI PRASATH S

AGIL MARIVALAN J

LOYALAN LOGESH RAJA J

MATHAN K

KESAVAN J




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TRAFFIC LIGHT USING SEVEN SEGMENT LED

LAVANYA R

KANIMozhi P

MANISHA B

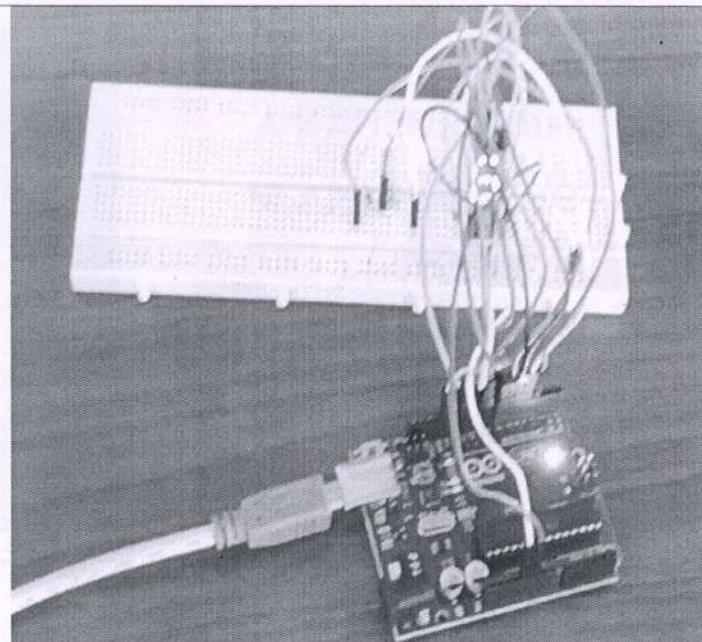
NAGADHARSHINI G

AISWARYA B

AISHWARYA K

KAVYA SHREE R K

HARSHINI.A



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FLAME DETECTOR

GLADYS NANCY J

HIBA ROSHAN A

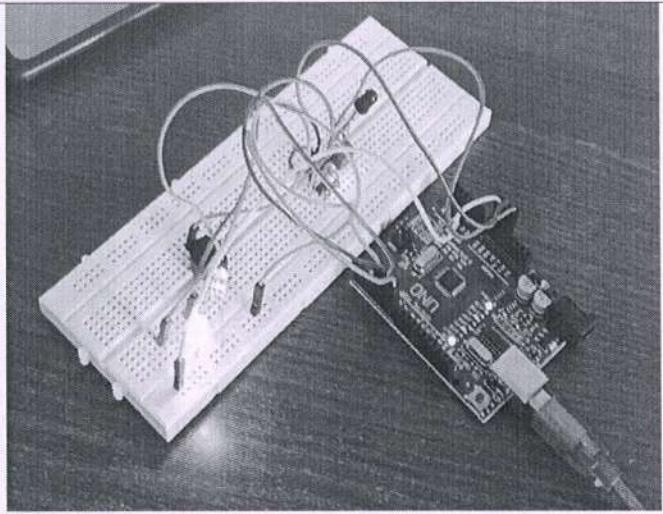
DEVAVARSHA M

JEEVITHA S

KARTHIKA BI

GOKILAVANI K

MADHUBALA M



BLUETOOTH CAR

MOHAMED IRFAN A

MOHAIDEEN ABDUL
KADIAR

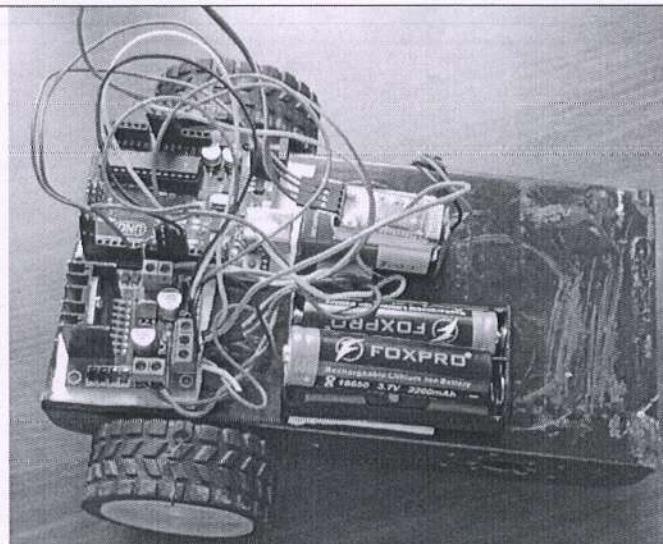
BALAJI S

ARA VINDKUMAR D

CHANDRU R

AKASH E

NITHISH M K



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GAS LEAKAGE DETECTOR

JOELGODFREY T

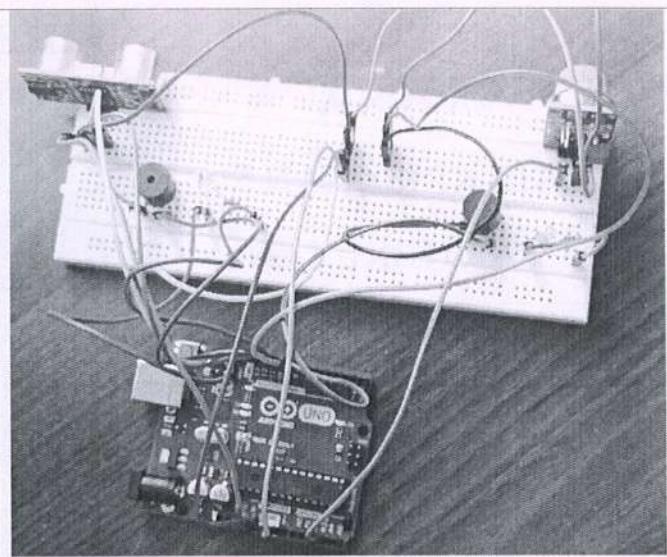
JEEVA V

JAWAHAR S

ARULMURUGAN S

BALAJIPRASANTH G

LATHEEP MAIDEEN A



WIRELESS NOTICE BOARD & OBSTACLE AVOIDING ROBOT

TERRANCE RITHIK ARON S

VIJAY RAGUNATH G S

SRI SATHYA NARAYANAN

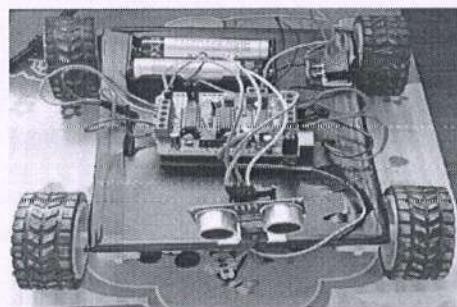
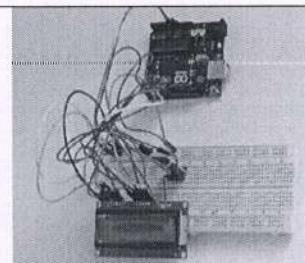
SUGUNTHON G

VIGNESHWAR B

THAMARAI SARAVANAN M P
R

SUGASH A

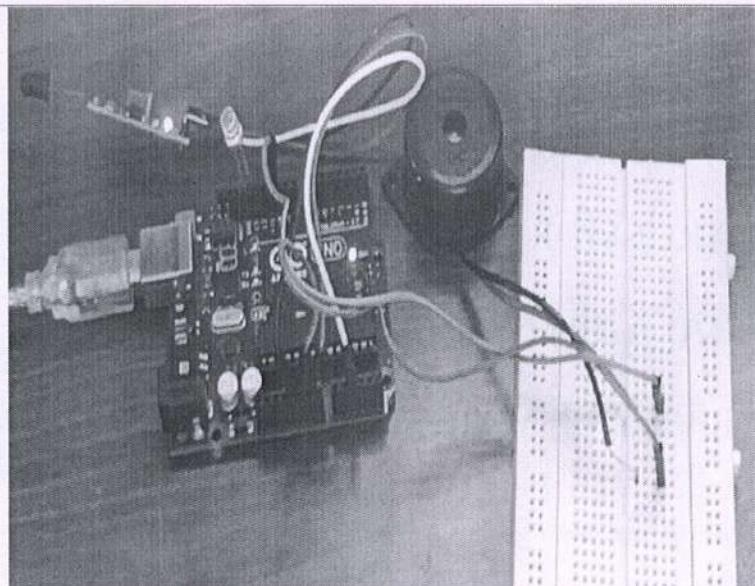
NANTHISWARAN M



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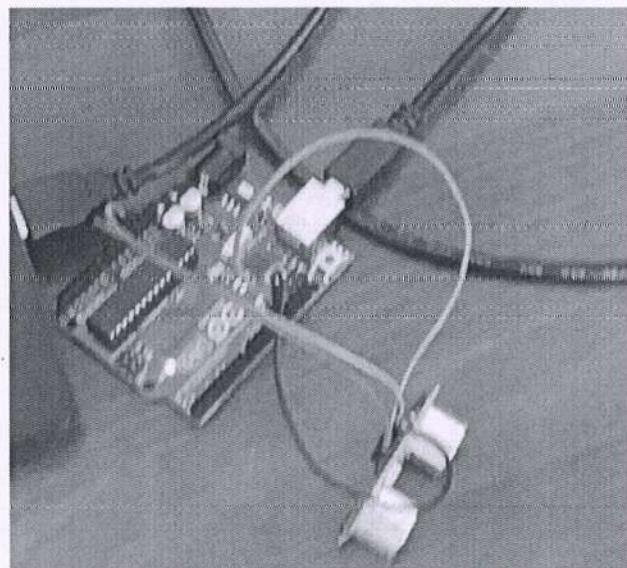
FIRE ALARM

VARUN A
HARI KRISHNAN S
J.KARTHIKEYAN
SAHIL AKTHAR Z
THANGARAJ R
VIGNESH M
VIGNESH P
SUBASH PANDI R



DISTANCE MEASUREMENT

SAKTHI PRIYA P
RASITHA MARYAM K
SOWMIYA S
SOWMYA S
NIRANJANA M
PANDIMA DEVI B
SABITHA M V
SUBASHREE M
PRIYADHARSHINI A
PAVITHRA R



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VISITOR COUNTER

SANTHOSH KUMAR S

SARAN P

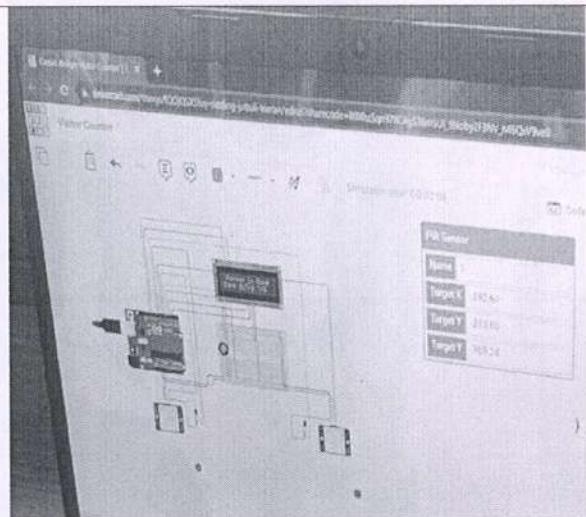
SETHU KISHOR R

SHANMUGARAJA K

SIVARAJ M

SIVASANKAR K

CARLOS.V



RADAR

UMA PRIYADHARSHINI J

VAISHNAVI P K

VARSHINI S

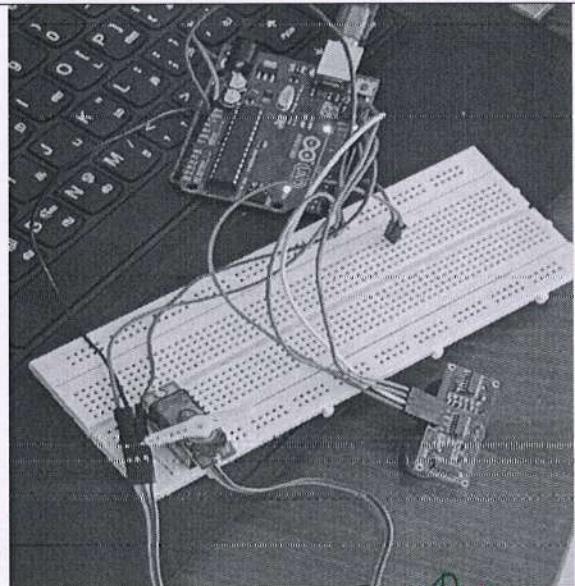
YASHICA S

PRIYANKA S

REENA V

RESHMITHA R

SONALI M



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Project Exhibited by III-ECE-C Students

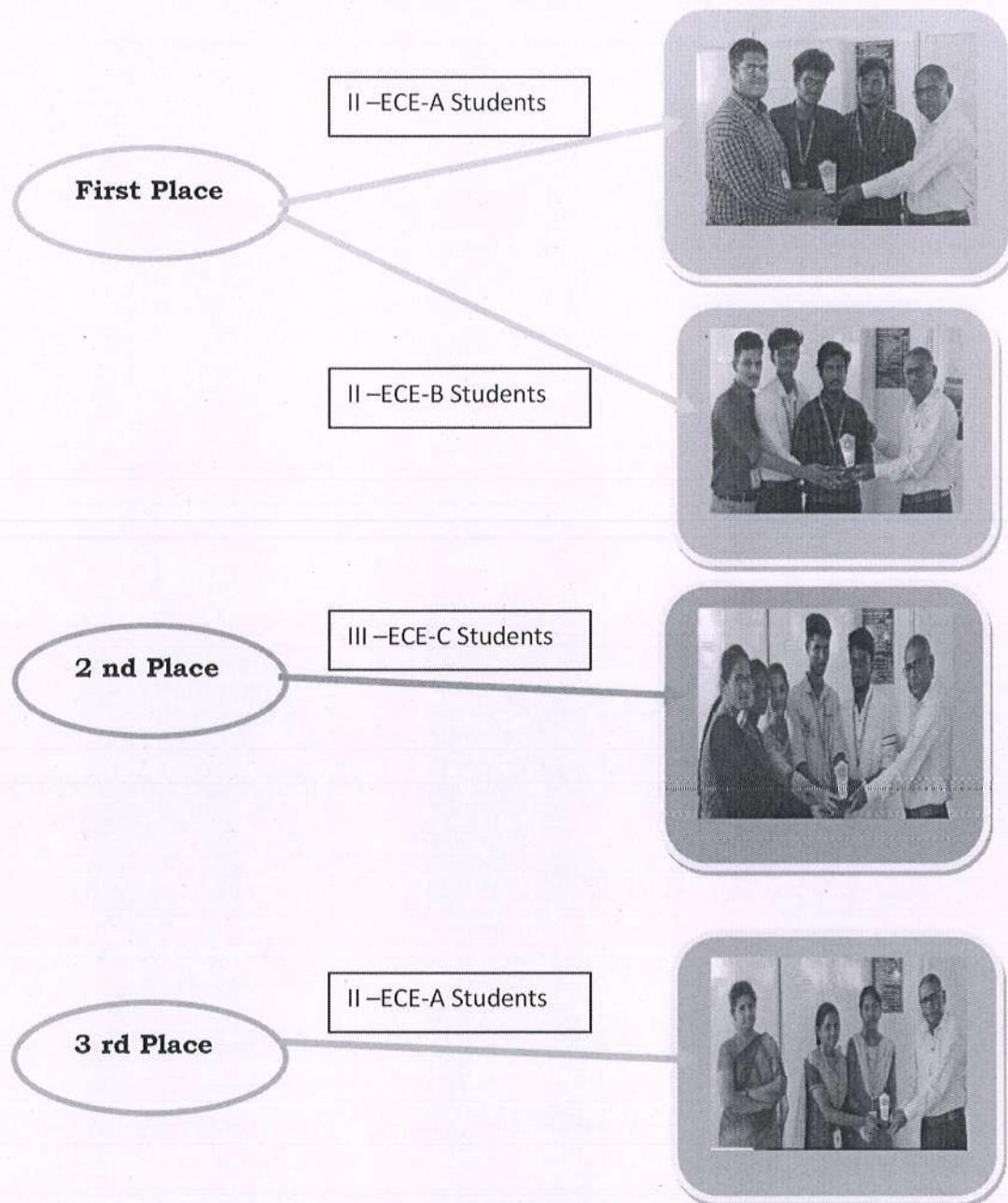



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CHAPTER 9

PRIZE DISTRIBUTION

The best project among the 15 was selected and rewarded with shield by our honorable Principal Dr. D. Senthil Kumaran along with our respected Department Head Dr. S. Karthigai Lakshmi and faculty members.



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

CERTIFICATE OF COMPLETION

This is to certify that JEEVITHA S of II ECE has attend Technology

Teaching on "Embedded systems" on 04.05.22 to 10.05.22 in SSM Institute of

Engineering and Technology, Dinidgul



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Principal

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HOD

Dr.S.KARTHIGAI LAKSHMI

Principal

FACULTY INCHARGE

Dr.K.RAJESH

Principal

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This is to certify that KESAVAN J of II ECE has attend Technology

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R
Dr. K. RAJESH
FACULTY INCHARGE OF EMBEDDED SYSTEMS
Dr. K. RAJESH

M
HOD
Dr. KARTHIGAI LAKSHMI

A
PRINCIPAL
Dr.D.SENTHIL KUMARAN

D
PRINCIPAL
Dr.D.SENTHIL KUMARAN, M.E., Ph.D., [NUS]

P
Principal
Dr.D.SENTHIL KUMARAN, M.E., Ph.D., [NUS]

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CERTIFICATE OF COMPLETION

This is to certify that HARIHARAN K of II ECE has attend Technology

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Engineering and Technology, Dinidgul

FACULTY INCHARGE
Dr.K.RAJESH

PRINCIPAL
Dr.D.SENTHIL KUMARAN
Dr.D.SENTHIL KUMARAN, M.L., Ph.D., MUS

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