Acharya Institute of Technology

Soladevanahalli, Bengaluru-560107

Department of Electrical and Electronics Engineering

A Report on
Five day workshop on "Embedded system Design using Arduino and IOT using Raspberry pi"

A Five day workshop on " **Embedded system Design using Arduino and IoT using Raspberry pi** " is organized by the department of EEE from 27th to 29th January 2023, 3rd and 4th February 2023 in association with Fluxlink India Pvt. Ltd, Bangalore and inaugurated by Dr. Rajath Hegde M M, Principal , Ait , Dr. Prakash.R , Hod, EEE Dr. Lakshmikanth .S, Member, IQAC . The Experts explained various concepts of embedded system related aspects right from fundamentals to advanced (IoT). The workshop started with a presentation on embedded systems advances and related field and its opportunities in the industry. The presentations clearly explained what skills are required to become an embedded engineer or engineer. The entire workshop covers embedded systems and Raspberry-pi platform for building devices that control the physical world.

The workshop resource persons initially focused on importance of IoT in society, the current components of typical IoT devices and trends for the future. IoT design considerations, constraints and interfacing between the physical world and your device will also be covered and also cover how to make design trade-offs between hardware and software, key components of networking to ensure that students understands how to connect their devices into internet. 35 Students of 3rd Semester EEE are participated in the workshop.

1. Objectives of workshop

- To bridge the gap between the industry and Academic by up skill student's knowledge.
- To impart the basic programming concepts and techniques, that will be useful to enhance students skills for industry requirements in field of embedded system design and IoT.

2. Workshop Flow

Day-1: Mr. Lakshmikanth Reddy and Mr. Dayananda L.N started with an introduction to embedded systems, Arduino Basics, Arduino Board Layout & Architecture, Programming fundamentals. Interfacing sensors with Arduino and measured Environmental Physical Values.

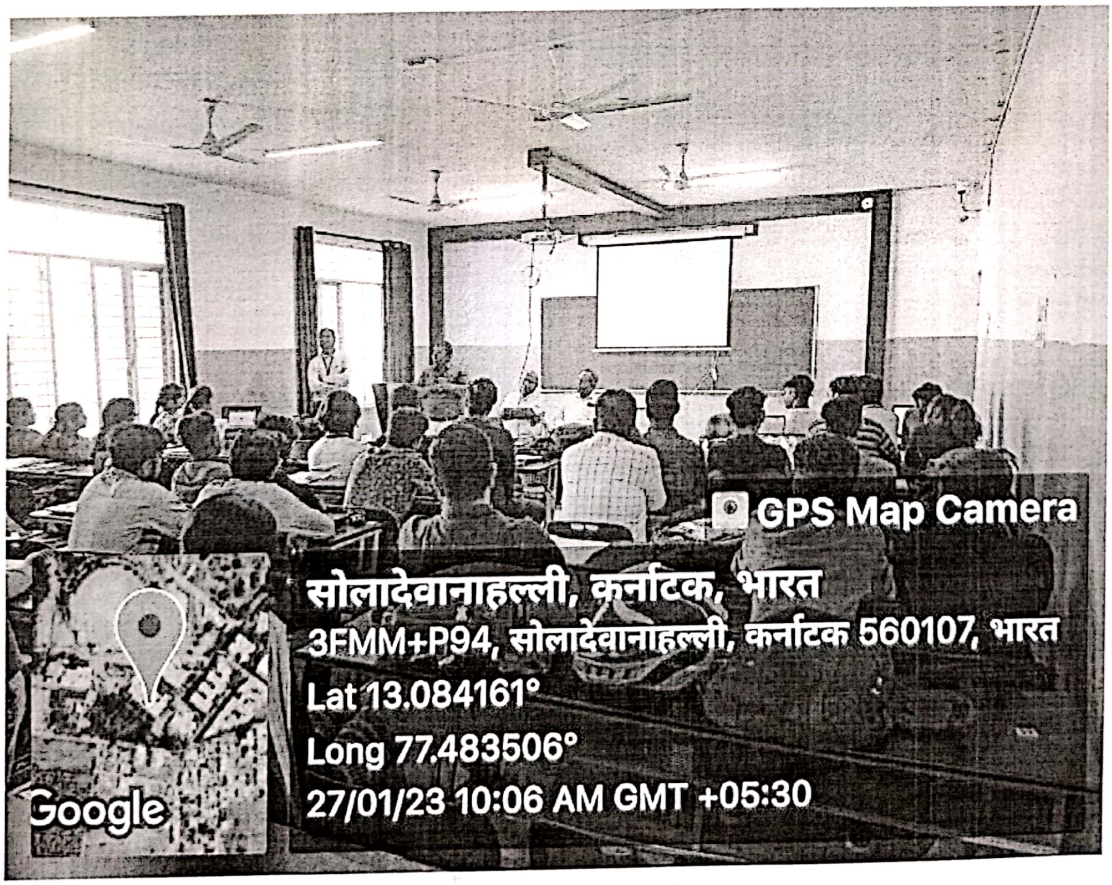
Day-2: First half, Dr. Bhargav from L&T Technologies explained the Simulation & emulation of the STM32 microcontroller discovery board and explained how source code is converted in to executable code. Second half, Mr. Lakshmikanth Reddy and Mr. Dayananda L.N given Hands-on training on interfacing different motors like servo motor and dc motor etc.

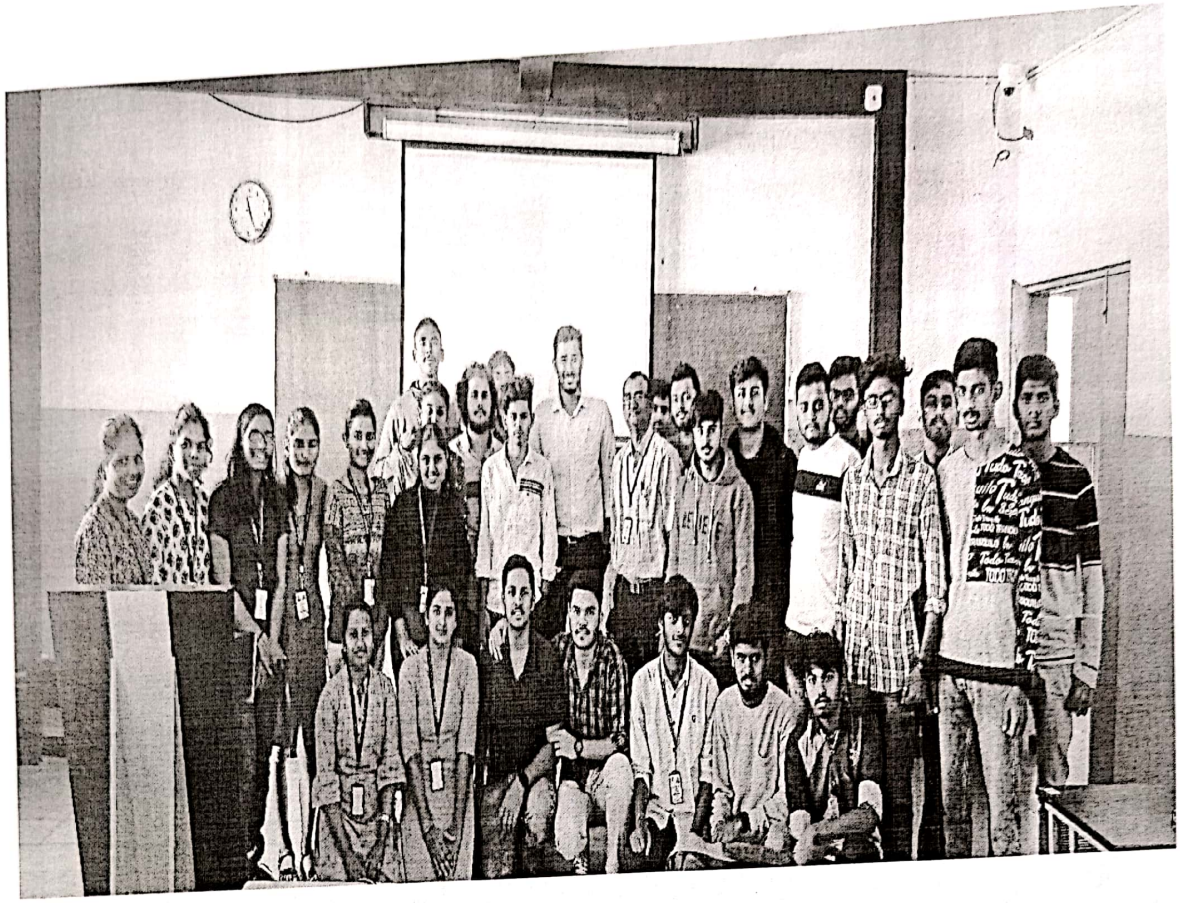
Day-3: For Students, task was given to developed different type embedded applications using ultrasonic sensors, servo motors, LCD, IR sensors, Motors.

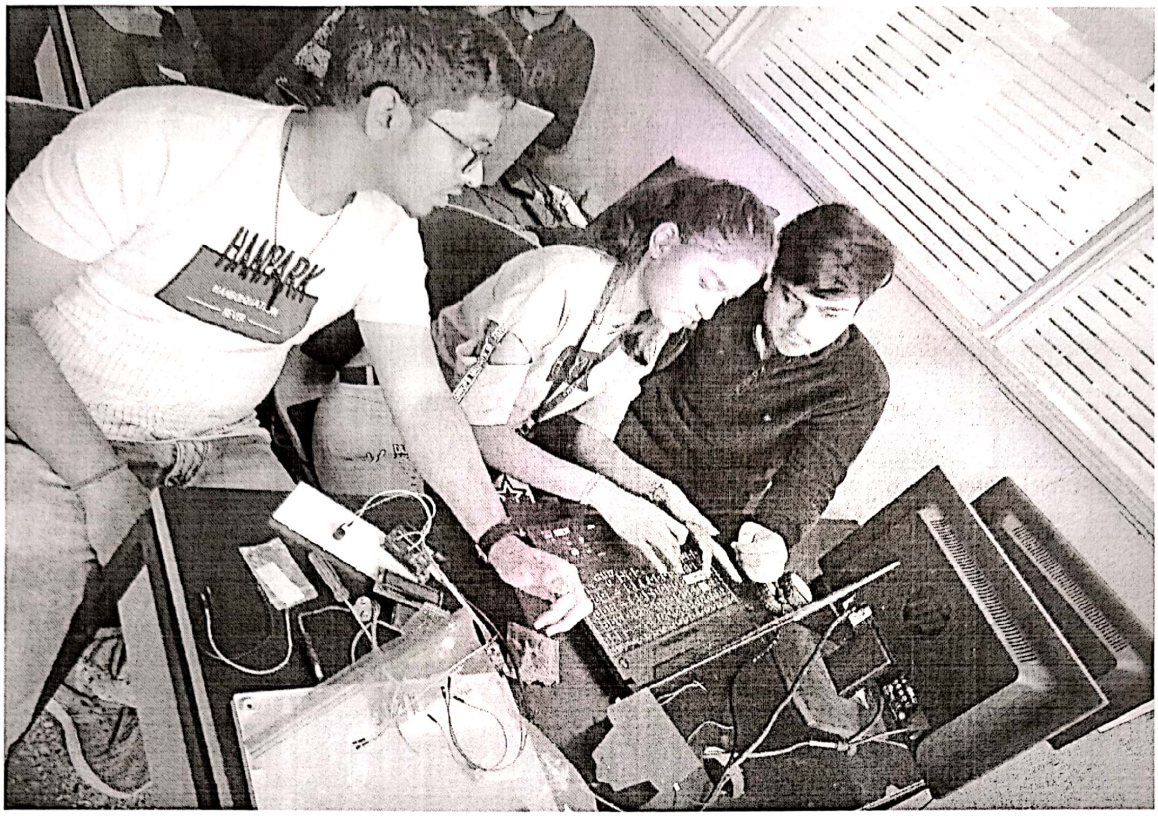
Day-4: First half, Mr. Vinay A.N. from Fluxlink India Pvt. Ltd., given idea about current scenario of automation in different industries. Second half, Mr. Sathya Murthy Kamath from SBM nauvata given to introduction of Python, Raspberry Pi, Comparison of various Rpi Models, Pin Description of Raspberry Pi, On-board components of Rpi,

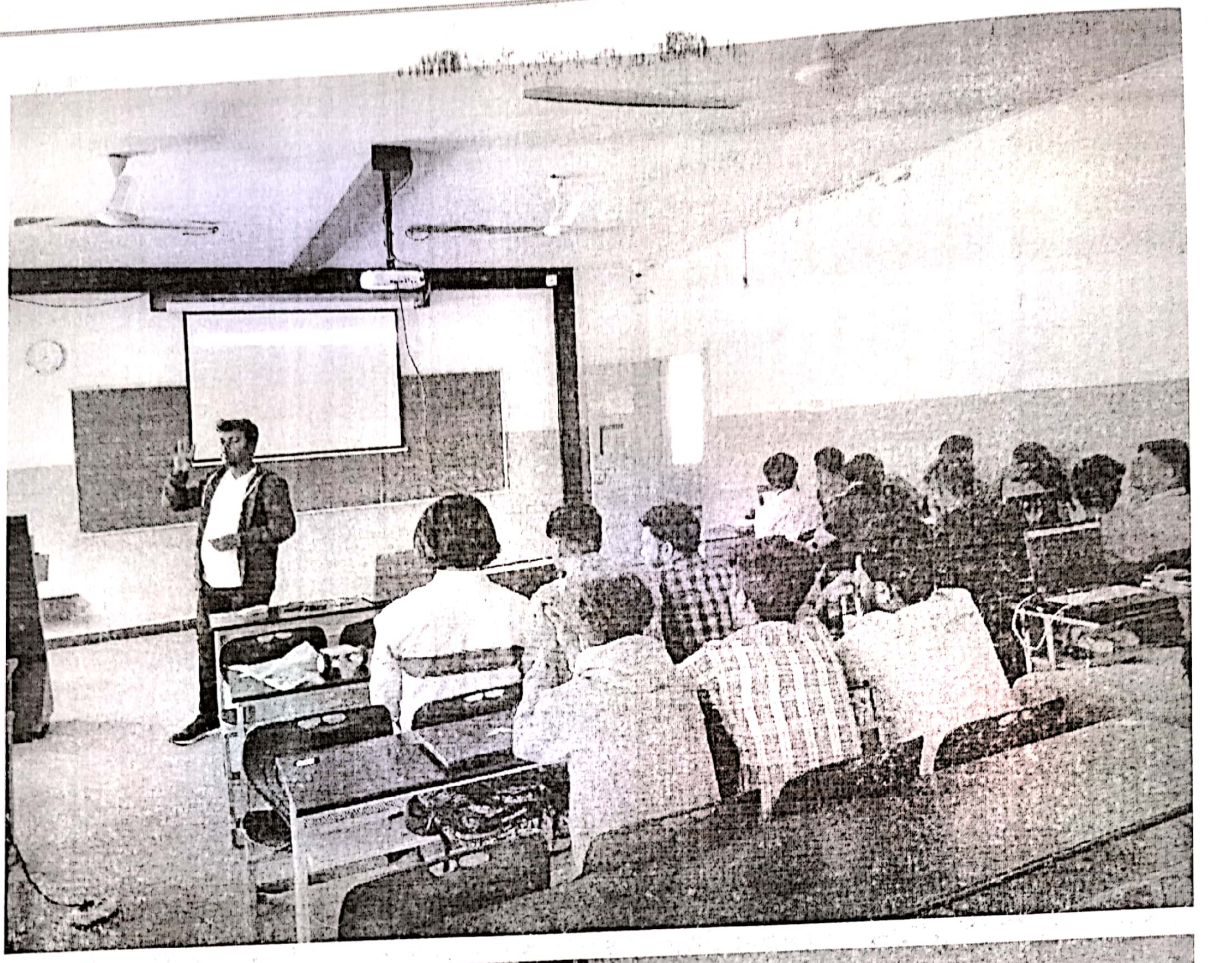
Day 5 – Mr. Sathya Murthy Kamath from SBM nauvata started session with Initialization of Raspberry-pi, Led interfacing, Temperature and Humidity Sensor interfacing with Raspberry-pi. He also demonstrated the sending of the data to cloud.

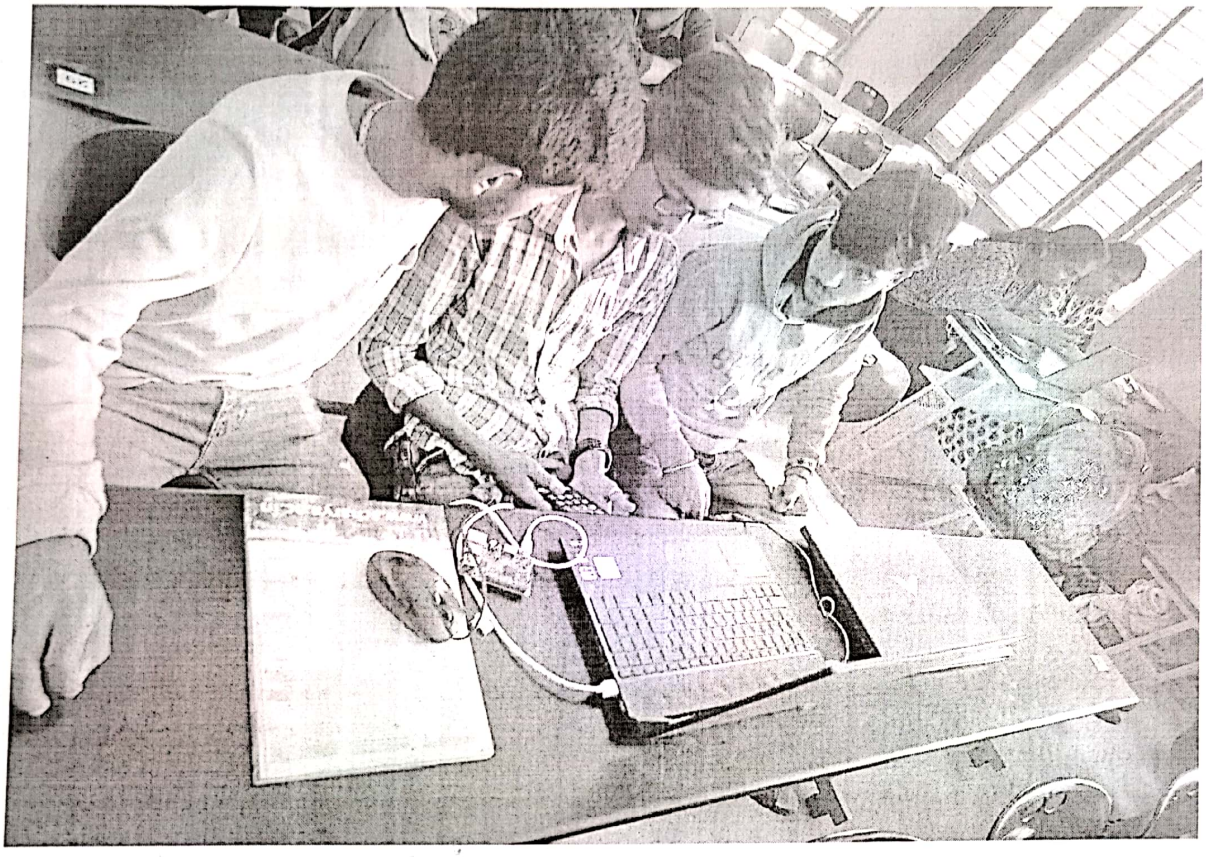
3. Photos of the Event:

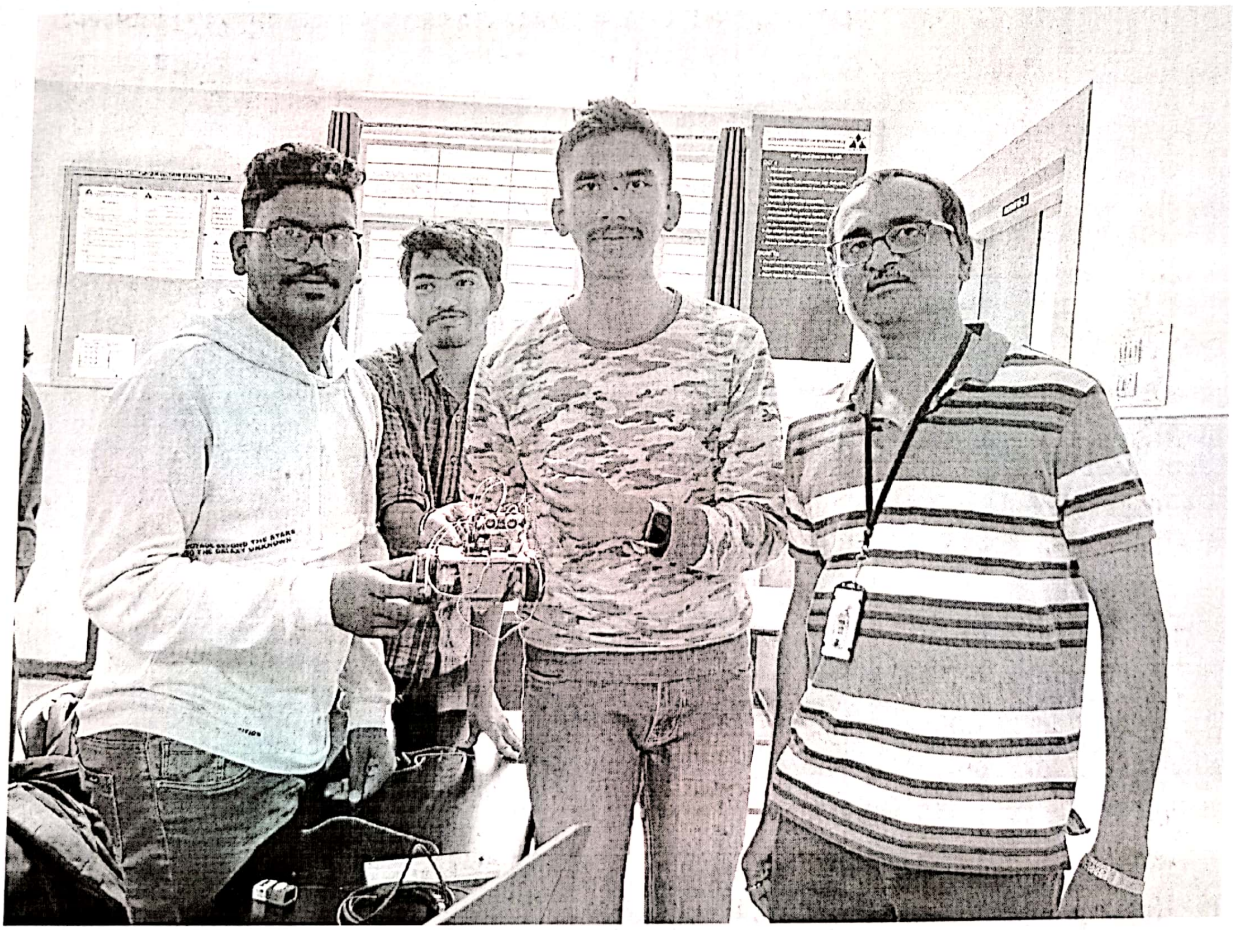


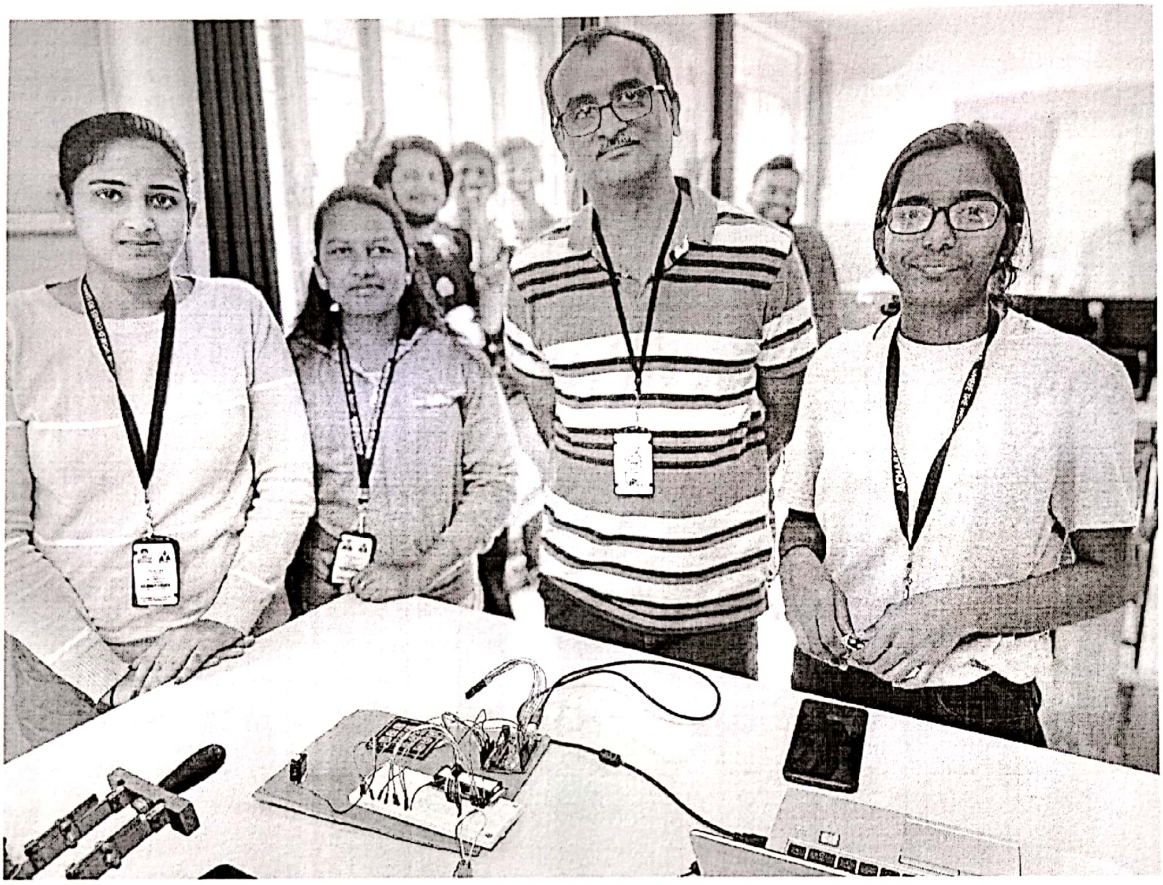


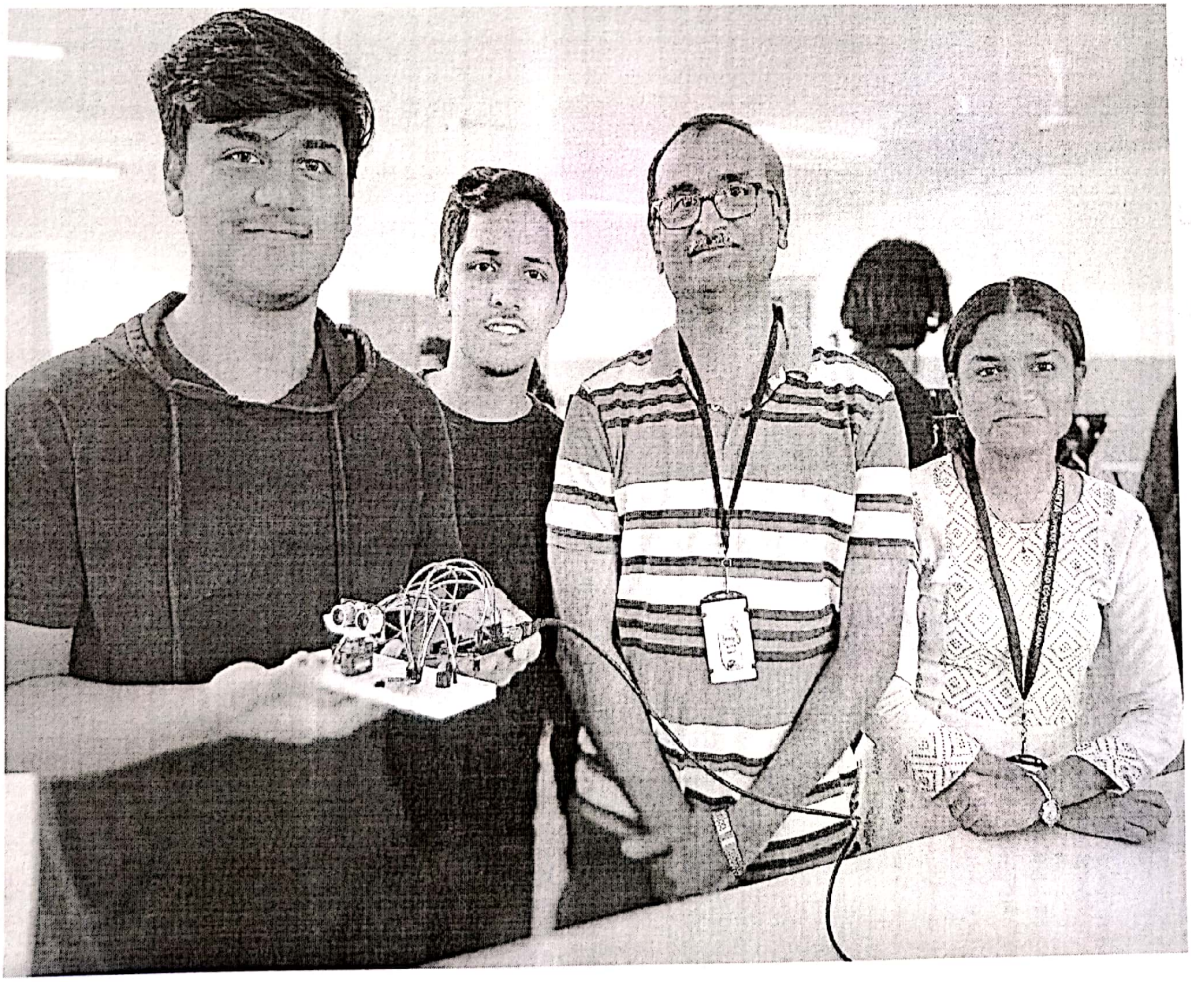












4. **Outcomes of the workshop**

The Students will be able to

- Build Real time projects using Arduino
- Build IOT projects with the Raspberry Pi
- Talk to sensors with the Raspberry Pi and Arduino

5. **Mapping of Program outcomes (PO's) and Program specific outcomes (PSO's) to workshop**

Event	Program Outcomes (PO's)												Program Specific Outcomes (PSO's)		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Workshop	2	1	2	-	3	-	-	-	3	2	1	2	-	3	

Coordinators

1. Lakshmikanth Reddy, Asst. Professor , EEE
2. Dayananda. L.N, Asst. Professor, EEE

10/2/23

Dr. Prakash. R
HOD, EEE

Professor & HOD
Dept. of Electrical & Electronics Engineering.
Acharya Institute of Technology,
Soldevanahalli, Bangalore-560 107

Acharya Institute of Technology

Department of Electrical and Electronics Engineering

Students List for workshop on " Embedded system Design using Arduino and IOT using Raspberry pi"in association with Flexlink India Pvt. Ltd

Academic Year 2022-23 | Odd Semester | 3rd Semester

S.No.	Name	USN	27/1/2023		28/1/2023		29/1/2023		3/2/2023		4/2/2023	
			Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
1	APEKSHA R A	1AY21EE003										
	HARSHITHA C	1AY21EE015										
	GAYANA I N	1AY21EE013										
2	ZAID MOHAMMAD	1AY21EE038										
	MANOJ GOWDA B K	1AY21EE021										
	PRAJWAL HALLALE	1AY21EE027										
3	HARSHIT KUMAR JAISWAL	1AY21EE014										
	RAHUL KUMAR YADAV	1AY21EE030										
	PRASHANT THAKUR	1AY21EE028										
4	MAJID AHMAD NAIKOO	AT22BEEE011										
	DIVYANSHU SINHA	AIT22BEEE008										
	SUHAIL AHAMMED	1AY21EE426										
5	K R VINAY	1AY21EE017										
	SANJAY	1AY21EE031										
	JAYPRAKASH G T	1AY21EE016										
6	AISHWARYA	1AY21EE001										
	BHAVANA.D	1AY21EE004										
	VAISHNAVI U	1AY21EE035										
7	DHRUV SAMEER PATIL	1AY21EE011										
	CHITRA	1AY21EE007										
	MEERAAN RAHAMAN	1AY21EE022										

S.No.	Name	USN	27/1/2023		28/1/2023		29/1/2023		3/2/2023		4/2/2023	
			Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
8	ANJALI K S	1AY21EE002										
	BINDUSHREE D	1AY21EE005										
	NANDANA UNNI	1AY21EE025										
9	YASHWANTH PATEL M	AIT22BEEE003										
	MAGADI ACHYUTHA	1AY21EE020										
	PUNIT DIGGI	1AY21EE029										
10	KARTHIKAI RAMAN P	1AY21EE018										
	STEPHEN RAJ A	1AY21EE034										
	MEKALA MOHAN KRISHNA	1AY21EE023										
11	KAUSHIK V YADAV	1AY21EE019										
	SANKETH UM	1AY21EE032										
	MUKTHESH YADAV	1AY21EE024										
12	YASHASHWINI R	1AY21EE037										
	DEVIKA P V	1AY21EE009										
13												
14												

Acharya Institute of Technology

Department of Electrical and Electronics Engineering

Students List for workshop on " Embedded system Design using Arduino and IOT using Raspberry pi"in association with Flexlink India Pvt. Ltd

Academic Year 2022-23 **Odd Semester** **3rd Semester**

S.No.	Name	USN	College Mail ID	Whatsapp No.
1	AISHWARYA	1AY21EE001	aishwaryav.21.beee@acharya.ac.in	9008705909
2	ANJALI K S	1AY21EE002	anjalis.21.beee@acharya.ac.in	7619459345
3	APEKSHA R A	1AY21EE003	apekshar.21.beee@acharya.ac.in	9483103880
4	BHAVANA D	1AY21EE004	bhavanad.21.beee@acharya.ac.in	9535072994.
5	BINDUSHREE D	1AY21EE005	bindushreed.21.beee@acharya.ac.in	8861309718
6	CHITRA V N	1AY21EE007	chitrav.21.beee@acharya.ac.in	8310248225
7	DEVIKA P V	1AY21EE009	devikav.21.beee@acharya.ac.in	8123974012
8	DHRUV SAMEER PATIL	1AY21EE011	dhruvs.21.beee@acharya.ac.in	8237080232
9	GAYANA I N	1AY21EE013	gayanai.21.beee@acharya.ac.in	9008782097
10	HARSHIT KUMAR JAISWAL	1AY21EE014	harshits.21.beee@acharya.ac.in	9631642312
11	HARSHITHA C	1AY21EE015	harshithac.21.beee@acharya.ac.in	7338102368
12	JAYPRAKASH G T	1AY21EE016	jayaprakashg.21.beee@acharya.ac.in	8277669149
13	K R VINAY	1AY21EE017	vinayr.21.beee@acharya.ac.in	8088019553
14	KARTHIKAI RAMAN P	1AY21EE018	karthikain.21.beee@acharya.ac.in	
15	KAUSHIK V YADAV	1AY21EE019	kaushiks.21.beee@acharya.ac.in	9853857391
16	MAGADI ACHYUTHA	1AY21EE020	magadim.21.beee@acharya.ac.in	8971329456
17	MANOJ GOWDA B K	1AY21EE021	manojk.21.beee@acharya.ac.in	7022173575
18	MEERAAN RAHAMAN	1AY21EE022	meeraanm.21.beee@acharya.ac.in	9907991139.
19	MEKALA MOHAN KRISHNA	1AY21EE023	mekalam.21.beee@acharya.ac.in	9886771521
20	MUKTHESH YADAV	1AY21EE024	muktheshk.21.beee@acharya.ac.in	6360599091
21	NANDANA UNNI	1AY21EE025	nandanau.21.beee@acharya.ac.in	9535175854
22	PRAJWAL HALLALE	1AY21EE027	prajwals.21.beee@acharya.ac.in	9606362880
23	PRASHANT THAKUR	1AY21EE028	prashantb.21.beee@acharya.ac.in	+0177 9811208020
24	PUNIT DIGGI	1AY21EE029	punits.21.beee@acharya.ac.in	6360120673
25	RAHUL KUMAR YADAV	1AY21EE030	rahulr.21.beee@acharya.ac.in	8935920177
26	SANJAY	1AY21EE031	sanjays.21.beee@acharya.ac.in	9164455680
27	SANKETH UM	1AY21EE032	sankethu.21.beee@acharya.ac.in	9110474908
28	STEPHEN RAJ A	1AY21EE034	stephena.21.beee@acharya.ac.in	8792099974
29	VAISHNAVI U	1AY21EE035	vaishnaviu.21.beee@acharya.ac.in	8867383547
30	YASHASHWINI R	1AY21EE037	yashashwinir.21.beee@acharya.ac.in	8867484861
31	ZAID MOHAMMAD	1AY21EE038	zaidp.21.beee@acharya.ac.in	9008662698
32	SUHAIL AHAMMED	1AY21EE426	Suhaila.22.beee@acharya.ac.in	9845202284
33	YASHWANTH PATEL M	AIT22BEEE003	Yashwanth.m.22.beee@acharya.ac.in	7899393057
34	DIVYANSHU SINHA	AIT22BEEE008	divyanshum.22.beee@acharya.ac.in	6204810793
35	MAJID AHMAD NAIKOO	AIT22BEEE011	majidm.22.beee@acharya.ac.in	7889541853

Content for Brochure

Title of the program: Five day workshop on "**Embedded system Design using Arduino and IOT using Raspberry pi**"

Organized by: Department of Electrical and Electronics Engineering in Association with Flex link India Pvt. Ltd.

- **Logos:**

- **Dates: :** 27th to 29th January 2023, 3rd and 4th February 2023
- **Time:** 9.00 AM to 4.30 PM
- **Target Audience:** 3rd Semester Students and Faculty, Acharya Institute of Technology
- **Mode: Offline (Hands-on)**
- **Advisory Committee:**
  1. Dr. Rajath Hegde M M, Principal, Acharya Institute of Technology
  2. Prof. Marigowda C K, Vice Principal, Acharya Institute of Technology
- **Convener:**
  3. Dr.R Prakash , Head of the Department, EEE, Acharya Institute of Technology
- **Coordinators:**
  4. Prof. Lakshmikanth Reddy, Department of EEE, Acharya Institute of Technology
  5. Prof. Dayananda L N, Department of EEE, Acharya Institute of Technology

- **Speaker Details:**

1. Dr.Bharghav N
   L&T technologies Pvt Ltd
2. Mr. Sathya Murthy Kamath
   Embedded Engineer, SBM nauvata
3. Mr. Vinay A.N
   CEO, Flex link India Ltd.
4. Mr. Lakshmikanth Reddy
   APG-1, Dept. of EEE

5. Dr. Lakshmikanth.S
   Assoc., Prof, Dept. of EEE
6. Mr. Dayananda .L.N
   Asst. Professor, Dept. of EEE

Objectives of the Program:

- To bridge the gap between the industry and Academic by upskill student's knowledge.
- To impart the basic programming concepts and techniques, that will be useful to enhance students skills for industry requirements in field of embedded system design and IOT.

Outcome of the Program: Student will be able to

- Build Real time projects using Arduino
- Build IOT projects with the Raspberry Pi
- Talk to sensors with the Raspberry Pi

ACHARYA INSTITUTE OF TECHNOLOGY
Department of Electrical and Electronics Engineering
Hessaraghatta Main Road, Soladevnahalli, Bengaluru -107

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EVENT PROPOSAL		
Ref. No.		
Department:	**Electrical and Electronics Engineering**	
Month:	January and February	
Year:	2023	
Name of Event:	**"Embedded system Design using Arduino and IOT using Raspberry pi"** in association with **Flexlink India Pvt. Ltd** and EEE Department	
Target Audience:	3rd Semester students and faculty members of EEE Department	
Date and Time:	**27th to 29th January 2023, 3rd and 4th February 2023 Time: 9.00-4.30pm.**	
Venue:	Computer Lab , EEE Department.	
Duration of the Event:	30 hour	
Objectives of the event:	• To bridge the gap between the industry and Academic by upskill student's knowledge. • To impart the basic programming concepts and techniques, that will be useful to enhance students skills for industry requirements in field of embedded system design and IOT	
Faculty in charge of submitting report:	Mr. Dayananda .L.N Asst. Professor, Dept. of EEE	
	Event No.:	Dept.: **EEE**
Resource person(s) details	Ex 1. Dr. Bhargav.N L & T Technologies Pvt. Ltd., Ex 2. Mr. Vinay A.N, CEO, Flexlink India Ltd. ✓3. Mr. Lakshmikanth Reddy APG-1, Dept. of EEE ✓4. Dr. Lakshmikanth.S Assoc., Prof, Dept. of EEE Ex 5. Mr. Sathya Murthy Kamath Embedded Engineer, SBM nauvata ✓6. Mr. Dayananda .L.N Asst. Professor, Dept. of EEE	

→ AIT/SDE

Electronically approved by ED NAM

Remuneration Amount:	INR 6000/- (Six Thousand Rupees only) [2000x3]		
Any support required from institute:	YES	Certificates for all Participants (45) and E-certificate Letter of Appreciation to the speaker -45	
Monetary	YES		
Personnel	No		
Physical Facilities	YES	Computer Lab, EEE Dept.	
Any Other(Specify)			
		Submission status	If yes, date of submission & Status
Enclosures required:	1. Invite Letter	YES	
	2. Acceptance Letter	YES	
	3. Speaker profile	YES	
	4. Students Attendance Sheet	YES	
	5. Registration & Feedback form	YES	
	6. Report	YES	
Signatures and Approvals			
Event Coordinator	Mr. Dayananda .L.N Asst. Professor, Dept. of EEE 25/1/23 (Signature with Date)	Institute Level Coordinator	Mr. Lakshmikanth Reddy APG-1, Dept. of EEE 25/1/23 (Signature with Date)
Head of Department	Dr. Prakash. R 25/1/23 (Signature with Date)	Principal	Dr.Rajath Hedge M M 25/01/23 (Signature with Date)
Campus Director	(Signature/e-sign with Date)		

ACHARYA INSTITUTE OF TECHNOLOGY

Acharya Dr. Sarvepalli Radhakrishnan Road, Soladevanahalli, Hesaraghatta Road, Bangalore-107

Electrical and Electronics Engineering Department

PARTICIPANT'S FEEDBACK FORM

"Five day workshop on Embedded system Design using Arduino and IOT using Raspberry pi" conducted by the Department and in association with Flux link India Pvt. Ltd. from 27th to 29th January 2023, 3rd and 4th February 2023.

Name: HARSHITHA.C **USN NO** 1AY21EE015

PLEASE RATE THE FOLLOWING: -

Sl. No	Particulars	Excellent	Good	Satisfactory
1	Technical Content	✓		
2	Presentation	✓		
3	Effectiveness of Resource Persons	✓		
4	Quality of the Training	✓		

Will this workshop enable you to do Mini / Hobby/ Real time Projects? ~~Yes~~ ✓ No

Any Other Comments/Suggestions for further improvement of the workshop

Improvement for more practical knowledge implementation. Hoping for improvement in myself to explore.

ACHARYA INSTITUTE OF TECHNOLOGY

Acharya Dr. Sarvepalli Radhakrishnan Road, Soladevanahalli, Hesaraghatta Road, Bangalore-107

Electrical and Electronics Engineering Department

PARTICIPANT'S FEEDBACK FORM

"Five day workshop on Embedded system Design using Arduino and IOT using Raspberry pi" conducted by the Department and in association with Flux link India Pvt. Ltd. from 27th to 29th January 2023, 3rd and 4th February 2023.

Name: BINDU.SHREE.D **USN NO.** 1A21EE005

PLEASE RATE THE FOLLOWING: -

Sl. No	Particulars	Excellent	Good	Satisfactory
1	Technical Content	✓		
2	Presentation	✓		
3	Effectiveness of Resource Persons	✓		
4	Quality of the Training	✓		

Will this workshop enable you to do Mini / Hobby/ Real time Projects? ~~Yes~~ No

Any Other Comments/Suggestions for further improvement of the workshop

Workshop is very good

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Electrical and Electronics Engineering Department

PARTICIPANT'S FEEDBACK FORM

"Five day workshop on Embedded system Design using Arduino and IOT using Raspberry pi" conducted by the Department and in association with Flux link India Pvt. Ltd. from 27th to 29th January 2023, 3rd and 4th February 2023.

Name: Rahul kumar yadav USN NO. 1AY21EC080

PLEASE RATE THE FOLLOWING: -

Sl. No	Particulars	Excellent	Good	Satisfactory
1	Technical Content	✓		
2	Presentation	✓		
3	Effectiveness of Resource Persons	✓		
4	Quality of the Training	✓		

Will this workshop enable you to do Mini / Hobby/ Real time Projects? Yes ✓ No

Any Other Comments/Suggestions for further improvement of the workshop

Good Work Shop is very good.

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Acharya Dr. Sarvepalli Radhakrishnan Road, Soladevanahalli, Hesaraghatta Road, Bangalore-107

Electrical and Electronics Engineering Department

PARTICIPANT'S FEEDBACK FORM

"Five day workshop on Embedded system Design using Arduino and IOT using Raspberry pi" conducted by the Department and in association with Flux link India Pvt. Ltd. from 27th to 29th January 2023, 3rd and 4th February 2023.

Name: Abhinaya **USN NO.** 1AY21EE001

PLEASE RATE THE FOLLOWING: -

Sl. No	Particulars	Excellent	Good	Satisfactory
1	Technical Content	✓		
2	Presentation	✓		
3	Effectiveness of Resource Persons	✓		
4	Quality of the Training	✓		

Will this workshop enable you to do Mini / Hobby/ Real time Projects? Yes ✓ No

Any Other Comments/Suggestions for further improvement of the workshop

Workshop is very good, still we are hoping to conduct some more good workshop practically.

ACHARYA

ACHARYA INSTITUTE OF TECHNOLOGY

Acharya Dr. Sarvepalli Radhakrishnan Road, Soldevanahalli, Bengaluru-560 107.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Certificate

ØFLUXLINK

This is to certify that

Mr./Ms. *Apeksha R A* of **3rd Semester EEE department** has attended and successfully completed five days workshop on **"Embedded system Design using Arduino and IOT using Raspberry pi"** conducted by Department of **Electrical and Electronics Engineering, Acharya Institute of Technology**, Bengaluru in association with **Fluxlink India Pvt. Ltd.** held during 27th to 29th January 2023 and 3rd - 4th February 2023

FLUXLINK INDIA Pvt. Ltd. Bangalore

MD, Fluxlink India Pvt. Ltd

Dr. Prakash .R
Professor & HOD
Dept. of Electrical & Electronics Engineering,
Acharya Institute of Technology,
Soldevanahalli, Bangalore-560 107

Dr. Rajath Hegde M M
Principal, AIT

PRINCIPAL
ACHARYA INSTITUTE OF TECHNOLOGY
SOLDEVANAHALLI, BENGALURU 560 107