

Workshop on "Introduction to Robotics" through the e-Yantra Lab Setup Initiative (eLSI) 22-23 December 2016

1. **Title of the activity:** Workshop on "Introduction to Robotics" through the e-Yantra Lab Setup Initiative (eLSI)
2. **About the Activity**

a. Objective:

The aim of the Two-day workshop was to train teachers in the basic concepts of Embedded systems and Micro-controller programming as the first phase of training through [e-Yantra Lab Setup Initiative \(eLSI\)](#). Face-to-face training workshop conducted at a coordinating college for teacher team from a given region. Team of 4 teachers from colleges learns to program Firebird V robot and get certificates upon successfully completing the workshop.

b. Program detail:

e-Yantra team, SKIT has conducted a Two day workshop on "Introduction to Robotics and Embedded Systems" for teacher's team from other colleges, on 22nd - 23rd December, 2016 under e-Yantra project of MHRD with IIT Bombay. Three project engineers Mr. Parinchheda, Mr. Sachin Gupta and Mr. Vamshi Krishna were come to deliver lectures in workshop. 50 faculty members of 12 engineering institutes of Rajsthan were participated in this workshop. Complete workshop is based on "Firebird V" robot. Firebird V is a research platform based on Microcontroller Atmega 2560 as a master and Atmega 8 as a slave. LCD, LED bar, white line sensors, sharp range sensors, DC geared motors, X-bee modual and RF receiver are interfaced on it. In those two days, participants were being learnt about all interfacing circuits and codes of all interfaced devices and moduals. DC motor speed control using PWM, read sensor values using ADC and display it on LCD were also learnt. Finally a white line follower robot was made.

c. Expected Outcome:

After completion of this workshop,

- Participants will have knowledge about embedded system and robotics.
- Knowledge of interfacing of different peripherals and devices with microcontroller
- Knowledge of Firebird-V robot and its operation
- Participants will be able to join and successfully complete online training after this workshop.

d. **Type** : National

3. Details of the Activity

a. Resource person(External/Internal):

e-Yantra team, SKIT has conducted a Two day workshop on "Introduction to Robotics and Embedded Systems" for teacher's team from other colleges, on 22nd - 23rd December, 2016 under e-Yantra project of MHRD with IIT Bombay. Three project engineers **Mr. Parinchheda, Mr. Sachin Gupta and Mr. Vamshi Krishna** came to deliver lectures in workshop. 50 faculty members of 12 engineering institutes of Rajasthan were participated in this workshop.

b. No of participants: 50

Attendance sheet E-Yantra Workshop

College Name	Faculty Name	22/12/16		23/12/16	
		Morning	Evening	Morning	Evening
1 Compucom Institute of Technology, Jaipur	a Mr. Sandeep Jayswal	Sandeep	Sandeep	Sandeep	Sandeep
	b Mr. Manish Gupta	Manish	Manish	Manish	Manish
	c Mr. Deepak Gautam	Deepak	Deepak	Deepak	Deepak
2 ANAND ICE, JAIPUR Anand Institute of Tech, Jaipur	a Mrs. Archana Singh(EE)	Archana	Archana	Archana	Archana
	b Mr. Vivek Bhojak (EC)	Vivek	Vivek	Vivek	Vivek
	c Mr. Prakash Chandra(EE)	Prakash	Prakash	Prakash	Prakash
	d Mr. Deepesh (ME)	Deepesh	Deepesh	Deepesh	Deepesh
3 Global Institute of Technology, Jaipur	a Mr. Saurabh Dargan	Saurabh	Saurabh	Saurabh	Saurabh
	b Mr. Nitin Sharma	Nitin	Nitin	Nitin	Nitin
	c Mr. Dinesh Kr Verma	Dinesh	Dinesh	Dinesh	Dinesh
	d Mr. Pushendra Singh	Pushendra	Pushendra	Pushendra	Pushendra
4 Manipal Univ. Jaipur	a Dr Renu Kumawat	Renu	Renu	Renu	Renu
	b Ms. Pallavi Yarde	Pallavi	Pallavi	Pallavi	Pallavi
	c Dr. Himanshu Choudhary	Himanshu	Himanshu	Himanshu	Himanshu
	d Mr. Ashish Vijay	Ashish	Ashish	Ashish	Ashish
5 Jagannath Univ. Jaipur	a Dr. Ramesh Bharti	Ramesh	Ramesh	Ramesh	Ramesh
	b Mr. Anupam	Anupam	Anupam	Anupam	Anupam
	c Mr. Rakesh Kumar [ME]	Rakesh	Rakesh	Rakesh	Rakesh
6 JECRC Univ. Jaipur	a Mr. Manoj Gupta	Manoj	Manoj	Manoj	Manoj
	b Mr. Gaurav Bansal	Gaurav	Gaurav	Gaurav	Gaurav
	c Dr. Amit Shrivastava	Amit	Amit	Amit	Amit
	d Dr. Dinesh Sethi	Dinesh	Dinesh	Dinesh	Dinesh
7 VIT East, Jaipur	a Mr. Pawan Sharma	Pawan	Pawan	Pawan	Pawan
	b Mr. Ganesh Dubey	Ganesh	Ganesh	Ganesh	Ganesh
8 Poornima College of Engineering, Jaipur	a Mr. Durgesh KUMAR	Durgesh	Durgesh	Durgesh	Durgesh
	b Mr. Sandeep Gupta	Sandeep	Sandeep	Sandeep	Sandeep
9 MLV Govt. Textile Engg. College, Bhilwara	a Mr. Ajay Sharma,	Ajay	Ajay	Ajay	Ajay
	b Mr Shekhar Dwivedi,	Shekhar	Shekhar	Shekhar	Shekhar
10 Gurukul Inst. Of Engg. & Tech, Kota	a Mr. Brijendar Sengar	Brijendar	Brijendar	Brijendar	Brijendar
	b Ms. Arya Kumari	Arya	Arya	Arya	Arya
	c Mr. Sanwarlal Mali	Sanwarlal	Sanwarlal	Sanwarlal	Sanwarlal
11 Amity Univ. Jaipur	a Mr. Amit Sharma	Amit	Amit	Amit	Amit
	b Mr. Deepak Kachhot	Deepak	Deepak	Deepak	Deepak
12 Global college of Technology, Jaipur	a Mr. Yogesh Mehta	Yogesh	Yogesh	Yogesh	Yogesh
	b Mr. Yadvendra Bedi	Yadvendra	Yadvendra	Yadvendra	Yadvendra

		22 Dec 2016		23 Dec 2016			
		Morning	Evening	Morning	Evening		
13	Swami Keshvanand Institute of Technology, Jaipur	a	Mr. Ajay Dhanopia (ME)	Present	Present	Present	Present
	b	Mr. Vinay Singh Marwal (ME)	Present	Present	Present	Present	
	c	Mr. Brijmohan Sharma (ME)	Present	Present	Present	Present	
	d	Mr. Akash Deo (EE)	Present	Present	Present	Present	
	e	Mr. Ramesh Prakash (EE)	Present	Present	Present	Present	
	f	Ms. Ruchika Jain (CS)	Present	Present	Present	Present	
	g	Ms. Gloria Joseph (EC)	Present	Present	Present	Present	
	h	Ms. Mamta Jain (ECE)	Present	Present	Present	Present	
	i	S. Sarabjeet Singh Sethi	Present	Present	Present	Present	
	j	Ruchsa Rafar	Present	Present	Present	Present	
	k	Manju Chaudhary	Present	Present	Present	Present	
	l	Swati Arora	Present	Present	Present	Present	
	m	Arun Beniwal (ME)	Present	Present	Present	Present	
	Kamlesh Kumar (E)	Present	Present	Present	Present		
	Chandan Kumar (ME)	Present	Present	Present	Present		
14	Jagannath University	Tarun Badwal (ECE)	Present	Present	Present		

c. Brief Proceeding of each day of the activity:

Day 1:	
8:30 AM to 09:15 AM	Registration + Tea
09:15 AM to 09:45 AM	Inauguration -- Lighting of lamp; Overview of e-Yantra
09:45 AM to 11:00 AM	Introduction to Fire Bird V robot
11:00 AM to 01:00 PM	Introduction to AVR Micro-controller and Programming environment
01:00 PM to 02:00 PM	Lunch Break

Hands on Session

02:00 PM to 03:30 PM	Simple Motion Control using I/O ports
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03:30 PM to 03:45 PM	Tea break
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03:45 PM to 05:15 PM	Robot velocity control using pulse width modulation
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Day 2:

Hands on Session

09:30 AM to 10:45 AM	Introduction to LCD interfacing
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10:45 AM to 11:00 AM	Tea Break
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11:00 AM to 01:00 PM	Analog sensor interfacing using Analog to Digital conversion *Interfacing with white line sensors *Interfacing with Infrared range finder sensor
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01:00 PM to 02:00 PM	Lunch Break
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02:00 PM to 03:30 PM	Interrupt programming *Closed loop position control of robot using position encoders
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03:30 PM to 03:45 PM	Tea break
03:45 PM to 04:15 PM	Robot programming for white line following
Feedback Session	
04:15 PM to 05:00 PM	Quiz and feedback
05:00 PM to 05.30 PM	Concluding session

d. Attainment of the activity:

All objectives have been attained.

4. Enclosures

a. Brochure: NIL

b. Detail of funding if any: All expenditure was reimburse by e-Yantra IIT Bombay

 **pallav rawal** <prawal87@gmail.com>
to Krishna, e-Yantra ▾ Jan 24, 2017, 3:26 PM ☆ ↶ ⋮

Respected madam

We have successfully conducted e-Yantra workshop on "Introduction to Robotics" on December 22nd & 23rd 2016 at SKIT Jaipur. Twelve colleges were participated in this workshop.

Now I request you to reimburse the expenditure as given below of this workshop.

Please find attachment herewith as bill

Sr. No.	Particular	Amount (INR)	Bill no.
1	SKIT canteen (Tea, Breakfast, water, Biscuit etc.)	3,368.00	01
2	Guest House (Lunch, Breakfast, Dinner) Mess (Lunch for participant)	13,600.00	02
3	Flex printing	200.00	03
	Total	17,168.00	

c. Souvenir: NIL

d. Proceedings: NIL

e. Photographs



