



2-day workshop  
**Building Connected Devices**

Workshop report

The workshop ‘**Building connected devices**’ was conducted by Li2 Technologies at Cisco thingQbator makerspaces in 5 universities as part of Cisco thingQbator program. The Cisco thingQbator program is part of Cisco’s CSR commitments in 2018.

- Trident Academy of Technology, Bhubaneswar - 6, 7 October 2018
- Indira Gandhi Delhi Technical University for Women (IGDTUW), Delhi - 11, 12 October 2018
- Indian Institute of Information Technology and Management - Kerala (IIITM-K), Trivandrum - 27, 28 October 2018
- Indian Institute of Technology (IIT[BHU]), Varanasi - 31 October, 1 November 2018
- Amrita Vishwa Vidyapeetham (AVV), Coimbatore - 20, 21 November 2018

## Session Plan

Day 1	Connected Agri-Tech	Connected Healthcare	Connected Home
10:00 - 11:00	Introduction – Connected Devices and Industry 4.0		
	Potential of connected devices in Agri-Tech, Healthcare and Home Automation		
	Forming student groups, to work on either of the 3 categories - Agri-Tech, Healthcare and Home Automation		
11:00 - 11:45	Introduction to various IoT devices – focus on ESP8266		
	Project 0 – blinking an LED Interfacing IR sensor to ESP8266		
11:45 - 12:30	Interfacing of soil Moisture sensor, DHT sensor and water pump	-	-
12:30 - 13:15	Break		
13:15 - 14:15	-	Interfacing of heartbeat sensor, coin motor and ADXL335	Interfacing of LDR, DHT sensor and BO Motor
14:15 - 15:00	Introduction to ThingSpeak and Analytics using the Matlab tool		
15:00 - 16:00	Some cool demonstrations		
	Discussion in groups for hackathon and project ideation		

Day 2	Connected Agri-Tech	Connected Healthcare	Connected Home
10:00 - 11:00	Introduction to IFTTT, MQTT and GATT services		
11:00 - 11:30	Advanced wireless technologies to support IoT (overview)		
11:30 - 12:30	Open project session and idea implementation (groups)		
12:30 - 13:15	Break		
13:15 - 15:30	Open project session and idea implementation (groups)		
15:30 - 16:00	Review and discussions		
	Announcement of results and next steps		






The 2-day workshops on **Developing IoT Applications** was conducted by Li2 Technologies Pvt. Ltd. The trainers that conducted the sessions during were as follows

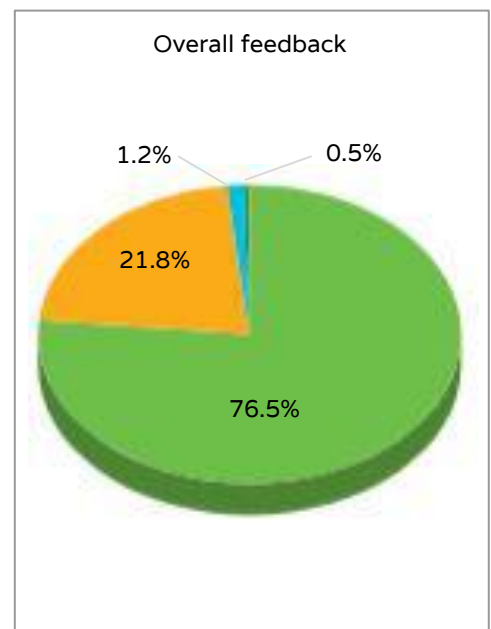
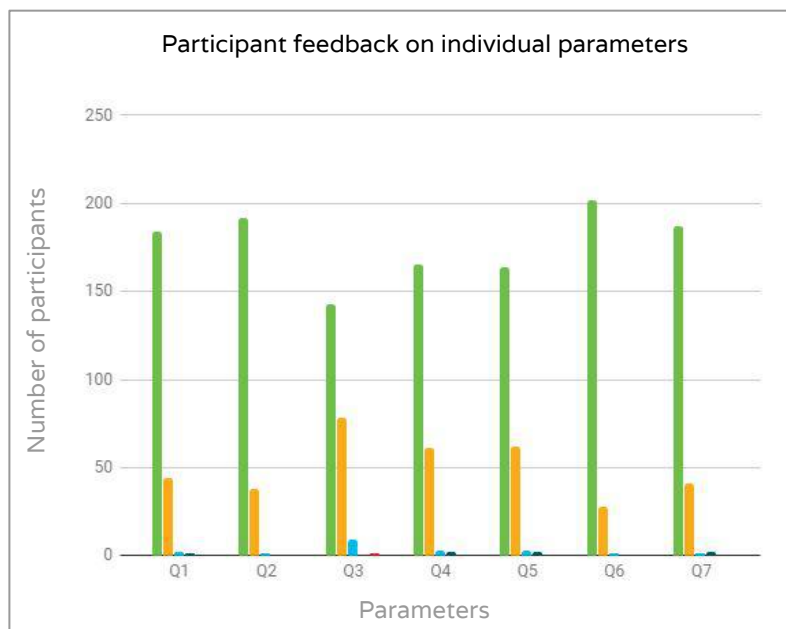
1. TAT, Bhubaneswar - Vinay Sridhar, Arvind Nadig and Shreyas Hervatte
2. IGDTUW, Delhi - Vinay Sridhar and Arvind Nadig
3. IIITM-K, Kerala - Vinay Sridhar and Arvind Nadig
4. IITBHU, Varanasi - Vinay Sridhar and Arvind Nadig
5. AVV, Coimbatore - Vinay Sridhar and Shreyas Hervatte

**Total number of participants - 231**

**Participant feedback summary**

The workshop participants were asked to rate the workshop on various parameters on a scale of 1 to 5

Q1	The workshop material was presented in a clear and organized manner	5 - Strongly Agree  4 - Agree  3 - Neutral  2 - Disagree  1 - Strongly Disagree 
Q2	The presenter responded to questions in an informative, appropriate and satisfactory manner	
Q3	The workshop content was relevant and it met my expectations	
Q4	The portal www.tqb.li2.in was very helpful in understanding the concepts and experiments	
Q5	The session was conducted in a fun filled learning environment	
Q6	I would like to attend more workshops of Cisco ThingQbator	
Q7	Overall, I had a wonderful learning experience in the workshop and I enjoyed it	



# Cisco thing**Q**bator

The Cisco thing**Q**bator program is part  
of Cisco's CSR commitments in 2018

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project  
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**Li2-Technologies**  
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KNOWLEDGE, CONTENT AND WORKSHOP PARTNER

Feedback

1 2 3 4 5 Comments

A  
     M  
     A  
     Z  
     I  
     N  
     G

What could have been done better? How would you like to take this workshop experience further?  
 I would like for this workshop to be shared as an extension from 2 to 4 days.

What could have been done better? How would you like to take this workshop experience further?  
 Everything was perfect but still we expect some new equipments in the next workshop.

What could have been done better? How would you like to take this workshop experience further?  
 It would be better if it is for a more time on longer period.

6. I would like to attend more workshops of Cisco Thingabator (please specify which workshop you will be interested in)      IOT, ML, AI workshop

7. Overall, I had a wonderful learning experience in the workshop and I enjoyed it      More details and deep.

What could have been done better? How would you like to take this workshop experience further?  
 I would like to work on more sensors and know more and explore more about IoT.

What could have been done better? How would you like to take this workshop experience further?  
 It would be better if it would organize more seminars/workshops so we can learn many more things from it.

What could have been done better? How would you like to take this workshop experience further?  
 It would be good if next workshop is on machine learning/AI or Blockchain.

you could have added the names of sensor libraries as well.

1 2 3 4 5 Comments

All were well organized

Very cooperative and helped us when needed

Yes, it is as good as with knowledge on sensor and AI gives us action plan

Since were very kind and were friendly

Yes, I would like to attend more workshops of Cisco Thingabator (please specify which workshop you will be interested in) ML, AI, Blockchain

7. Overall, I had a wonderful learning experience in the workshop and I enjoyed it      This workshop helps me to get more knowledge and helped me to build a small mini-project

What could have been done better? How would you like to take this workshop experience further?  
 I would like to work more on these sensors, machine learning. This workshop experience will help me in building my project in cloud.

1 2 3 4 5 Comments

Materials were in a clean manner

Everyone heard the things then gave their valuable suggestions.

It was more than expectations

All the things are very clear & given in a elaborate way

It was fully fun to do.

Robotics & IoT workshops

Really enjoyed it the most.

What could have been done better? How would you like to take this workshop experience further?  
 Yes, the workshop for really very helpful and I would want to attend more of these things in which it could take experience further by bringing some new new electronic gadgets. But overall things are still PERFECT.

Thank you.

What could have been done better? How would you like to take this workshop experience further?  
 There could be videos on the same that how the connector process should be done for completed sensors.

What could have been done better? How would you like to take this workshop experience further?  
 i) Raspberry Pi and Python  
 ii) wireless technologies on IoT

What could have been done better? How would you like to take this workshop experience further?  
 More IoT workshops and more sensors.

What could have been done better? How would you like to take this workshop experience further?  
 This workshop gave me a wonderful experience related to different types of sensors and gave me a opportunity to do many related project.

What could have been done better? How would you like to take this workshop experience further?  
 It was overall great. It would have been better if you evaluate what we all did (like day-end-projects) It would have made us a bit more confident.

Thank you.

waiting for (IoT) ML to deep learning) E (IoT/blockchain workshops)

What could have been done better?  
 It was amazing!

What could have been done better? How would you like to take this workshop experience further?  
 This was already better but of course I want to learn more and need all the knowledge in the field of agriculture and human welfare and do a small automation project to make lives smoother.

What could have been done better? How would you like to take this workshop experience further?  
 MORE WORKSHOPS WILL BE GOOD. ON TOPICS A BIT MORE ADVANCED

What could have been done better? How would you like to take this workshop experience further?  
 Considering the fact that it is a 2 Day Workshop, it touched every major sensors and I feel that we could have had much more sensors and it had would be a great eye opener.

Thank you.

What could have been done better? How would you like to take this workshop experience further?  
 This workshop was really good experience for me and my team. I would love to be a part of all the workshops that will be organised in future.

Great enthusiasm & passion shown by both mentors

What could have been done better? How would you like to take this workshop experience further?  
 Its a nice experience. we can able to learn something new.

What could have been done better? How would you like to take this workshop experience further?  
 I loved the interaction part of the workshop.

What could have been done better? How would you like to take this workshop experience further?  
 This workshop was amazing and full of learning. I would love to experience most of Artificial Intelligence and Blockchain.

What could have been done better? How would you like to take this workshop experience further?  
 I had a great time, thoroughly enjoyed it. I would love to attend more workshops like this.

What could have been done better? How would you like to take this workshop experience further?  
 Actually we are not from an electronics background. though this workshop would have been very helpful to us if we were. we are thankful to this team who made a hands-on session for us. It is very helpful for our further studies and all.

What could have been done better? How would you like to take this workshop experience further?  
 I have got confidence to work with greater projects

Participant interest in future workshop topics as per feedback

1. End-to-end IoT applications
2. Raspberry Pi, Python and Image processing
3. Machine Learning and Artificial Intelligence
4. IoT applications with advanced sensors
5. Cloud storing and access
6. Android App development

