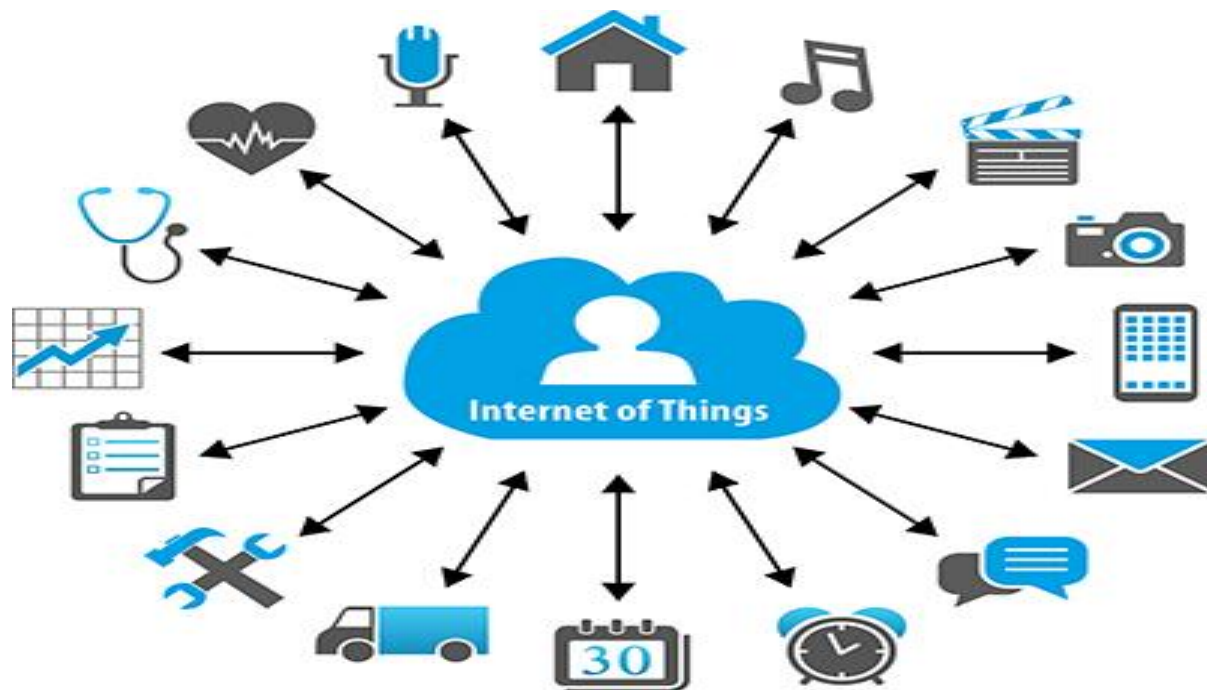


# 1 WEEK NATIONAL WINTER TRAINING PROGRAM ON Internet of Things with Arduino



## Objectives of IOT using Arduino Training

Internet of Things, or IOT in short, is the idea of making devices and objects smarter by linking them to the internet. This workshop introduces you to the amazing world of IOT and its fascinating applications. Using Arduino development kit, you will develop an electronic device that streams temperature and humidity data over the internet. You can program the system in such a way that say whenever the temperature exceeds a certain limit, the device will automatically send an email notification!

### Knowledge and Understanding after completion of this course



- knowledge and understanding of fundamental IOT paradigms, architectures, possibilities and challenges, both with respect to software and hardware,
- A wide competence from different areas of technology, especially from computer engineering, robotics, electronics, intelligent systems .
- Learn the basics of Internet of Things and its applications.
- What “the Internet of Things” means and how it relates to Cloud computing concepts.
- How open platforms allow you to store your sensor data in the Cloud.
- The basic usage of the Arduino environment for creating your own embedded projects at low cost.
- How to connect your Arduino with your Android phone.
- How to send data to the Internet and talk to the Cloud.
- How to update sensor readings on Twitter (Social Networking Sites).
- Control a Relay Switch by texting from your Phone.

## 1-week Internet of Things Projects details



- Project 1: Simple LED Program for Arduino
- Project 2: Integrating Sensors & Reading Environmental Physical Values.
- Project 3: Reading Environmental Values on Android Smartphone.
- Project 4: Voice Controlled Mini Home Automation using Android Smartphone
- Project 5: Control Devices using Localhost Web Server for Home Automation.
- Project 6: Creating own Android App using MIT App Inventor & controlling Arduino connected devices.
- Project 7: Being Social on Twitter & update status on Twitter through Arduino
- Project 9: Use Arduino to Upload free data from Environmental Sensors to Cloud Server.
- Project 10: Automatically Tweet Sensor Data on Twitter.
- Project 11: Receive Automatic Call Notification on Mobile Phone for Burglar Alarm using IoT Platform.
- Project 12: Control Electronic Devices from anywhere across the world using Internet & Mobile App.


### Why Internet of Things (IOT) Training from NWTP-2017 ?

- 12 Major Projects will be covered in this Training.
- Our syllabus is professionally designed to cover Basic as well as Advance aspects of IOT using Arduino
- Each day of our training is well planned to provide you with Theoretical as well as Practical Knowledge of the module




- Each day will come up with New Practical & Projects which makes the training interesting and exciting.
- Time to time Practical Assignments will be provided to the students, which will help them in doing practice at home.
- Revision Time & Query Sessions are provided to the students which help them in clearing previous doubts.
- Exam will be conducted at the end of basic as well as Advance module to test the knowledge level of the students.
- Time for Project Workshop will be provided to the students, in which students will develop a project of their own choice. This will encourage Innovative Ideas among students.

## 1-week Training Certificates

- 
- Certificate of Participation from NWTP-2017, Cognizance IIT-Roorkee.
  - Certificate of merit from NWTP-2017, Cognizance IIT-Roorkee.
  - Certificate of Coordination from NWTP-2017, Cognizance IIT-Roorkee.
  - College will get Center of Excellence from NWTP'17 Cognizance IIT-Roorkee.


## Kit For Internet of Things Development

- 
- Arduino Uno Rev 3 (Made in Italy) with USB Cable
  - ESP8266 (ESP01) Serial WiFi Module
  - 1-Channel Relay Module
  - Breadboard (Regular)
  - Assorted Jumper Wires (20)
  - LM35 Temperature Sensor
  - Assorted LEDs (10)

## Benefits to the participants

- 
- Learn & Interact with renowned Industry Experts.
  - Project Completion letter to each attendee from Finland Labs New delhi
  - The Certificate of Participation in association with Cognizance IIT-R.
  - Free IOT development Kit.
  - Students will get the opportunity to have Free 6 month project based Internship.
  - Zonal center's winners will be called to participate in the final round will be held at IIT-Roorkee.
  - Top Teams will be awarded as winners with the certificate of honor & respected prizes at IIT-Roorkee

## Benefits of association with NWTP-2017

- 
- Name and Logo including website link will be published on our official website mentioning that “You are our Official Zonal Partner”.]
  - Authorized Team will visit your College to organize the entire event. ]
  - The chance to get signs the MOU between Finland labs New delhi & Your estimated college.
  - An email will be sent to more than 1 lack users of our web partners about your college publicity. ]
  - Posters and Flexes will be sent to you for effective regional publicity. ]
  - All India publicity through Web marketing will also be done. ]

## 1-week

### Internet of Things with Arduino **Course Content**

Days	Therory & Hands on Topics of IOT with Arduino Training
1 <sup>st</sup> Day	<p><b>Introduction to the Internet of Things</b></p> <ul style="list-style-type: none"> <li>• The Internet of Things</li> <li>• Introduction to Cloud Computing</li> <li>• The Basics of Sensors &amp; Actuators</li> </ul>
2 <sup>nd</sup> Day	<p><b>The Arduino Platform</b></p> <ul style="list-style-type: none"> <li>• The Arduino Open-Microcontroller Platform</li> <li>• Arduino Basics</li> <li>• Arduino Board Layout &amp; Architecture</li> <li>• Arduino Programming &amp; Interface of Sensors</li> <li>• Interfacing sensors with Arduino Programming Arduino</li> <li>• Reading from Sensors</li> </ul> <p><b>Project 1:</b> Simple LED Program for Arduino  <b>Project 2:</b> Integrating Sensors &amp; Reading Environmental Physical Values.</p>

3 <sup>rd</sup> Day	<p><b>Interfacing sensors with Arduino Programming Arduino</b></p> <ul style="list-style-type: none"> <li>• Talking to your Android Phone with Arduino</li> <li>• Connecting Arduino with Mobile Device.</li> <li>• The Android Mobile OS.</li> <li>• Using the Bluetooth Module</li> </ul> <p><b>Project 3:</b> Home Automation using Android Smartphone <b>Project 4:</b> Reading Environmental Values on Android Smartphone</p>
4 <sup>th</sup> Day	<p><b>Project 5:</b> Tweet Sensor Reading through your phone on Twitter.</p> <ul style="list-style-type: none"> <li>• Creating App on Twitter</li> <li>• Integrating Arduino to talk to Twitter via Internet.</li> <li>• Cloud Computing.</li> <li>• Communicating with the Cloud using Web Services.</li> <li>• Cloud Computing &amp; IoT.</li> <li>• Popular Cloud Computing Services for Sensor Management.</li> </ul>
5 <sup>th</sup> Day	<ul style="list-style-type: none"> <li>• IT SERVICES &amp; SOLUTIONS</li> <li>• TECHNICAL EDUCATION</li> <li>• AUTOMATION SERVICES AND SOLUTIONS</li> </ul>
6 <sup>th</sup> Day	<p><b>Introduction to Interrupts</b></p> <ul style="list-style-type: none"> <li>• What is interrupts</li> <li>• Application of Interrupts</li> <li>• Registers of Interrupts Different Modes</li> <li>• Explaining ARDUINO Serial communication</li> </ul>
7 <sup>th</sup> Day	<p><b>Project 6:</b> Sending Arduino Data to your Cloud Application. <b>Project 7:</b> Use Arduino to Upload free data from Environmental Sensors.</p>

## Zonal Competition



- After the hand on theory and practical experience from 1-week training, Zonal Round Competition will be conducted for the participants.

## Certificate Distribution

- Certificate of Merit will be provided to all Zonal Round Winners and Certificate of Participation will be provided to all the Zonal Round Participants.

## Who should go for this Course?

. Students from B.E/B.Tech/M.Tech/Diploma (ECE/EEE/CSE/IT/MECH) can join this training. Anyone who have interest in this field and have pre-requisite knowledge.

## What are the other requirement for this training program?

- Seminar hall/classroom having the enough capacity to conduct hands-on-session for all participants.
- Good Quality public address system ideally two cordless mikes will be required.
- Projector/ Screen along with black/white board for teaching and presentation purposes.
- This training center can only be arranged for a minimum of 50 students
- 1-week accommodation to our IOT Expert.

## 1-week IOT with Arduino Training Fee



Training Fee (Free Kit)	Training Fee(Taken away kit)
<b>Rs 6000/per attendee</b> (The fee includes training, certification, and Event registration and a free IOT with Arduino Kit to each Team of 2 members )	<b>Rs 4000/per attendee</b> (The fee includes training, certification, and Event registration and a taken away kit of IOT with Arduino Kit to each Team of 2 members )



### **Training Duration**

1-week (3-4 hours each day)

Please be free to contact us for any kind of discussions related to NWTP-2017



**Md.Nafish**  
Dept. of Education & Training Development  
Finland labs(Unit of Revert Technology Pvt. Ltd)  
NWTP-2017 | AppsFluxus-2017 | RoboFeast-2017  
Contact No.+91-7053133032 | 011-65544707  
Email [nafish@finlandlabs.com](mailto:nafish@finlandlabs.com) | <http://finlandlabs.com/nstp/>