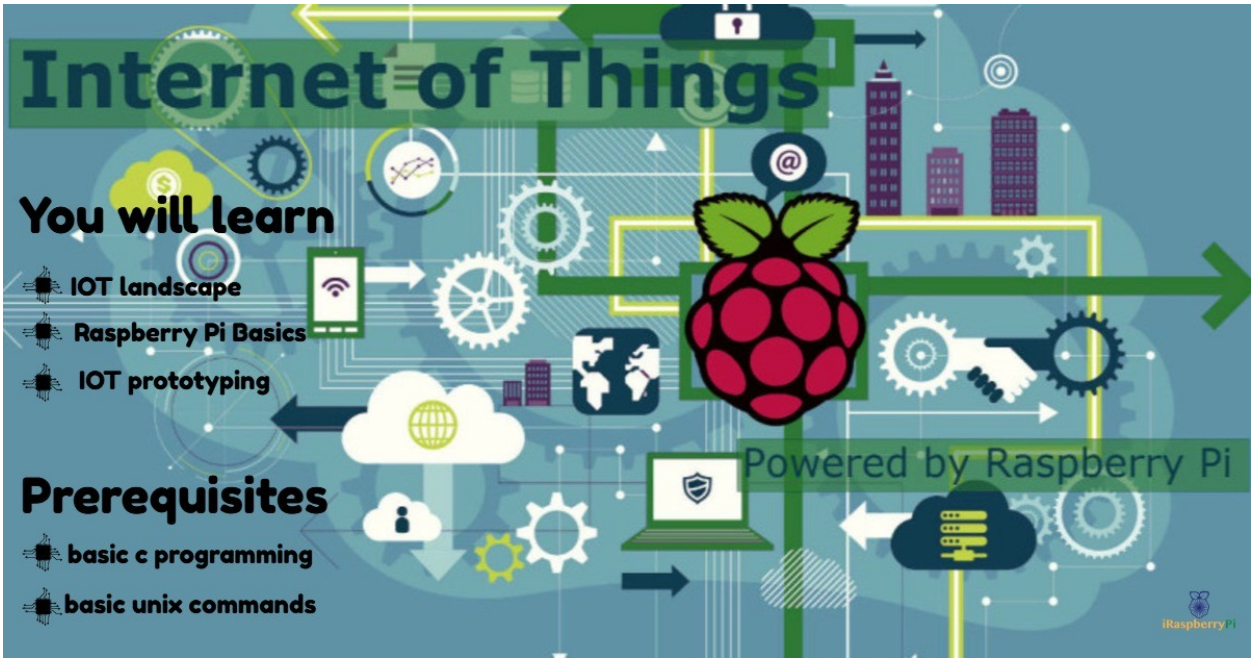
Internet of Things with Raspberry Pi for Corp



Target audience:
This workshop is designed exclusively for technology professionals, product developers, IT professionals and who are keen on understanding of IoT and get hands-on experience with IoT hardware (Raspberry Pi).
Internet of Things has a wide horizon for the IT professionals, Electrical and Electronics engineers, designers and solution architect. It can also come up to be a boon for the existing and budding entrepreneurs who are interested in building solutions for their customers. Professional working in other sectors like pharmaceutical, real estate, sales, finance, designing, manufacturing, electrical, retail, healthcare etc can also take benefit from IoT solutions. Graduates and fresher's can also kick start their career with the Internet of Things.

Prerequisite or Basic Knowledge:
knowledge of programming language C
Unix

How this workshop will benefit the participants:
This workshop will introduce you to the unexplored potential of the Raspberry Pi-the hardware, software and its applications. The Workshop is designed to cater to all kinds – be it a novice or a tech savvy hobbyist or an expert developer extraordinaire. During the course of the workshop

interesting open problems are floated and the participants are encouraged to think out-of-box and come up with innovative solutions. Post workshop, each participant will have a sound exposure to Python programming and interfacing of Raspberry Pi. A perfect recipe for innovation! We aims to teach you how to sense and control the physical world using computer programs running on the Raspberry Pi. Here you will learn how easy it is to interact with the outside world, and how this opens up limitless possibilities for exploration. After this workshop you should be able to make any IoT prototype.

Infrastructure requirements: 30% theory 70% hands-on
projector
wifi or wired INTERNET
1 or 2 HDMI monitors
Ethernet cable (1 per person)
laptop with Windows or Mac or Unix
(with following software)

- putty
- Notepad++
- Google Chrom
- Google Chrom web browser VNC Viewer from Google Chrome
- Winscp
- Evernote
- Win32diskimager
- SD card formatter

About The instructor:
Nayan is currently working as R & D Engineer with leading EDA company. He has done MS by research in Computer Architecture and Compile Optimization from IIIT-Hyderabad. He is also an Organiser at iRaspberryPi meetup group and doing raspberry pi meetup regularly since 2014 & connected over 40 IoT workshops.

Agenda for 3 Days (Day 1, Day 2 & Day 3)

1. Install in your laptop
2. Introduction to Raspberry Pi
3. Introduction to OS & Noobs
4. Introduction to sensors
5. linux basic
6. Intro to Python
7. GPIO
8. git on RPI

9. Programming in C
10. Programming in Python
    a. LED
    b. Switch
    c. Buzzer
    d. LDR
    e. PIR
    f. ultrasonic sensor
    g. DHT11
    h. Servo motor (GUI control)
    i. Working with Realys
        i. Smart Lights using Relays and PIR
    j. Data logger example (see LDR)
11. Introduction to Plotly & Uploading sensor data to plotly
12. Interfacing with Arduino
13. MQTT on Raspberry Pi & Arduino or ESP
14. Using IBM BlueMix
15. Using PubNub

Agenda for 2 Days (Day 1 & Day 2)

1. Install in your laptop
2. Introduction to Raspberry Pi
3. Introduction to OS & Noobs
4. Introduction to sensors
5. linux basic
6. Intro to Python
7. GPIO
8. git on RPI
9. Programming in C
10. Programming in Python
    a. LED
    b. Switch
    c. Buzzer
    d. LDR
    e. PIR
    f. ultrasonic sensor
    g. DHT11
    h. Data logger example (see LDR)
11. Introduction to Plotly & Uploading sensor data to plotly
12. Using PubNub

Detailed Agenda:

Timing	Topic	Type	Duration (min)
Day 1			
9:00 - 10:00	IoT landscape	Theory	60
10:00 - 11:00	Installation of require tools	*Hands-On*	60
11:00 - 11:15	**Tea Break**		15
11:15 - 12:15	Introduction to Raspberry Pi	Theory	60
12:15 - 1:00	Setting up Raspberry Pi	*Hands-On*	45
1:00 - 2:00	**Lunch Break**		60
2:00 - 2:30	Basic Linux	*Hands-on*	30
2:30 - 3:15	Python Programming	*Hands-on*	45
3:15 - 3:30	**Tea Break**		15
3:30 - 4:00	GPIO of Raspberry Pi	Theory	30
4:00 - 5:00	Interfacing LED with GPIO	*Hands-on*	60

Timing	Topic	Type	Duration (min)
Day2			
9:00 - 10:00	Interfacing more sensors	Theory	60
10:00 - 11:00	Interfacing more sensors	*Hands-On*	60
11:00 - 11:15	**Tea Break**		15
11:15 - 12:15	data logger using LDR	Theory	60
12:15 - 1:00	data logger using LDR	*Hands-On*	45
1:00 - 2:00	**Lunch Break**		60
2:00 - 2:30	Pubnub	Theory	30
2:30 - 3:15	Pubnub on Raspberry Pi	*Hands-on*	45
3:15 - 3:30	**Tea Break**		15
3:30 - 4:00	simple project	Theory	30
4:00 - 5:00	simple project	*Hands-on*	60

Timing	Topic	Type	Duration (min)
Day 3			
9:00 - 10:00	Introduction to Arduino	Theory	60
10:00 - 11:00	Interfacing Sensors with Arduino	*Hands-On*	60
11:00 - 11:15	**Tea Break**		15
11:15 - 12:15	Communication between Arduino & RPi	*Hands-On*	60
12:15 - 1:00	IBM Blumix on RPI	Theory	45
1:00 - 2:00	**Lunch Break**		60
2:00 - 2:30	Introduction to ESP8266	Theory	30
2:30 - 3:15	sending data from ESP8266	*Hands-on*	45
3:15 - 3:30	**Tea Break**		15
3:30 - 4:00	Simple Project	*Hands-on*	30
4:00 - 5:00	Simple Project	*Hands-on*	60

Terms and Conditions:

50% needs to be paid as booking amount.

we provide 1 kit between 3 participants for doing Hands-On