



TECHNOLOGY CAMP

Introduction to Internet-of-Things

Day 4 : Session 1

Instructors

- Name
- Job / Company
- Industry Experience
- Something interesting



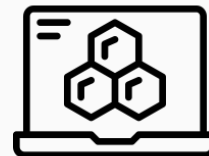
Volunteers

- Name
- Job / School
- Something interesting



Learning Objectives

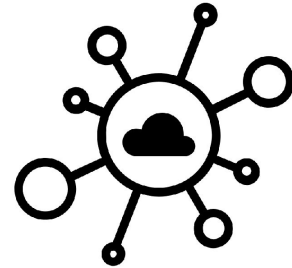
- Define the IoT and describe how it is used
- Describe how the IoT works
- Define what is a Raspberry PI
- Describe how a Raspberry PI can be used in the IoT
- Learn how to use Node-RED on the Raspberry PI



IoT is short for Internet of Things. The Internet of Things refers to the ever-growing network of physical objects that feature an IP address for internet connectivity, and the communication that occurs between these objects and other Internet-enabled devices and systems. - webopedia.com

https://www.webopedia.com/TERM/I/internet_of_things.html

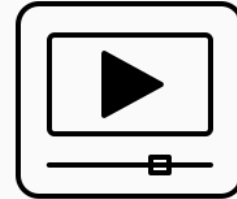
- What IoT Devices do you use right now?



Internet of Things (IoT) | What is IoT | How it Works | IoT Explained | Edureka

Lets watch it:

- <https://www.youtube.com/watch?v=LlhmzVL5bm8>
- Stop at 3:10 to skip ad



IoT Trivia

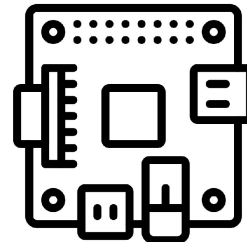
- In 2018, how many devices were connected to the internet?
- According to Gartner, how many things will be connected by the end of 2019?
- What is the most commonly connected IoT device? How many were in use in 2018?
- According to Gartner, by 2020, how many internet connected devices will there be for each person on the planet?






What is the Raspberry Pi?

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. ... It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word-processing, and playing games. ... [T]he Raspberry Pi has the ability to interact with the outside world, and has been used in a wide array of digital maker projects, from music machines and parent detectors to weather stations and tweeting birdhouses with infra-red cameras.-raspberrypi.org

<https://www.raspberrypi.org/help/what-%20is-a-raspberry-pi/>



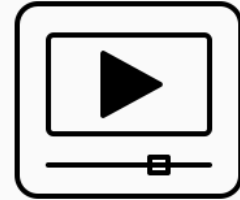
Raspberry Pi Set up

- Please **do not** unplug or turn off the PI without shutting it down from the App Menu ( in the upper left corner). Doing so could corrupt the SD card.
- Open your laptop and double click on the VNC Viewer icon. 
- Login using the default credentials:
 - *UserID: pi*
 - *Password: raspberry*
- When the Raspberry Pi desktop appears, click on the VNC icon  in the upper right and note your IP address listed under Connectivity
- Open a new browser tab and enter `http://{Your IP Address Here}:1880` to start Node-Red

Node-RED Introduction

Lets watch it:

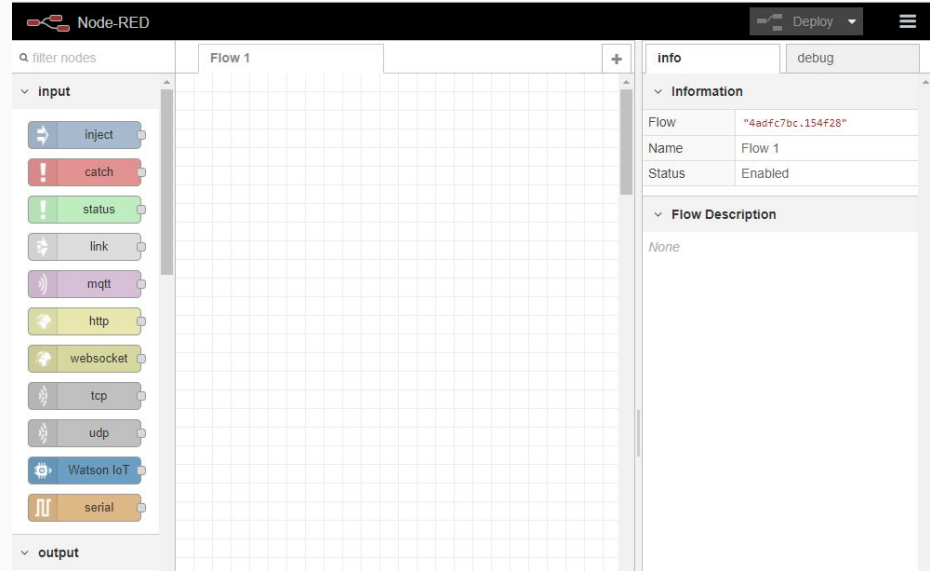
- <https://www.youtube.com/watch?v=vYreeoCoQPI>



Build a Node-RED Flow with Debug Output

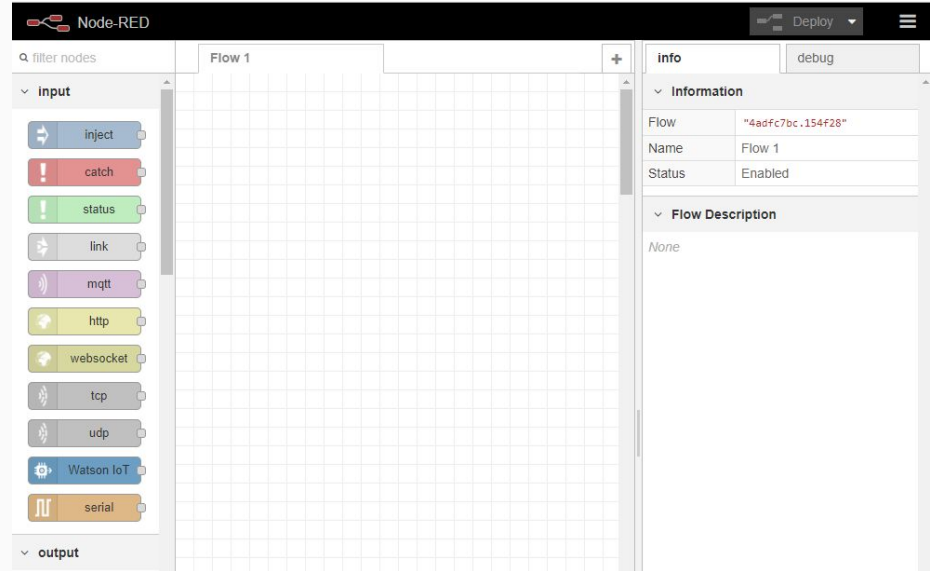


- *Follow along with Instructor screen share*



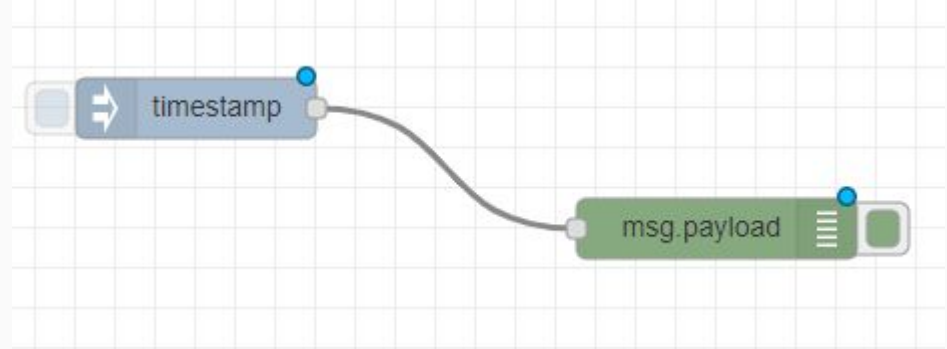
Build a Node-RED Flow with Email Output

- *Follow along with Instructor screen share*



Try it

- *Modify the flows you built.*
- *Build your own flows.*
- *Experiment with using different options and not the results.*



What we learned?

- Define the IoT and describe how it is used
- Describe how the IoT works
- Define what is a Raspberry PI
- Describe how a Raspberry PI can be used in the IoT
- How to use Node-RED on the Raspberry PI



End of session 1

- Time for break
- Snacks served in Cafeteria
- Remember to use restrooms

