**Programming IoT devices**

**What is IoT?**

* Simply put, The **Internet of Things** refers to the rapidly growing network of connected objects that are able to collect, exchange and leverage data using ~~embedded sensors and~~ the internet.
* So think devices beyond your laptops and mobile phones and objects including people. IoT consist of communication between people-people,
* Some popular IoT applications out in the market these days include things like
  + Wearables – Apple watch, Fitbit and Jawbone that allows us to track our fitness
  + AT&T - Connected Cars
  + Smart home – Amazon Echo with voice assistant Alexa and google with the google home
  + on a larger scale it even extends to systems in wide range industries such as healthcare, agriculture, education but we aren’t going to get to that today due to the limited time but I’ll be sure post some resources including this book im reading called the third wave by Steve Case that can get you excited about the future of IoT and the potential significant impact of IoT on how we live our everyday lives

**Why should we care?**

* Because behind most of these IoT applications are programming languages which present a new kind of opportunity for us developers
* Here is a list of programming languages that are used today. To be honest, I haven’t really dabbled with most of these languages accept for one: Javascript!
* So today I’m going demo IoT in its most basic form. I’m going to show you how we can use JavaScript and the internet to connect our computer and our Wi-Fi light bulb together and get our devices interacting with one another other

**Demo**

* So for this presentation, I found some great documentation online that allows us to control the our IoT device from node.js ~~(npm installed locally)~~ or the command line ~~(npm installed globally).~~
* The setup for this demo was actually quite simple. First I installed node to my computer and updated the version of npm (node package manager).
* I, then created this index.js which is basically our app that depends on modules from npm.
* I also downloaded the tplink-lightbulb package from npm to my directory ~~(so that we could have access to the tplink modules locally)~~
* and with the require function, I am essentially loading this tplink-lightbulb file so I can make use of any of the functionality that the tplink module has exposed for other people to use.
* To execute this file – we can hop into our to the command line and enter node index.js to run our program
* Now before we run this program, let’s look at the code and

see if we can decipher what’s going or change some of the values to get the light bulb working the way we want.

* We can see that we are going to use some kind of scan function to scan for any smart light bulbs in the area
* Also looks like we are going to be logging some information/ data about the light and particularly the status of the light into the console/ the command line
* We have a Boolean type data and object with some key value pairs
* and we also have a then method which is may be listening for promises and eventually stops the scan
* So by looking at this does anyone have an idea of how we can set the lightbulb to turn on?
* So now we know that its working we can change some of these values and have some fun
* You can also run some commands directly in the terminal

**Key Take Away**

* There is a growing market for IoT devices which creates new a kind opportunity for us as developers.
* It’s also kind of cool that JavaScript is one of the programming languages behind it which I think is super exciting!
* This lightbulb demo is just basically IoT in its most basic, and limited form. In a much larger scale, it has a lot of potential to impact how we live and experience the internet.
* I hope I was able to get you excited about the potential impact of IoT on how experience the internet

**Sources**

* <https://www.forbes.com/sites/jacobmorgan/2014/05/13/simple-explanation-internet-things-that-anyone-can-understand/#2adad771d091>
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