Wifi strength meter

This device shows the strength of the wifi using a bar graph LED. I choose to work on this project because I wanted to learn how the photon works and also it would be good internet of things project as the data is exchanged between the components using wifi.

The story behind why I have selected to work on this project is because whenever I call my parents in India, My dad would always stand in a place where he wouldn’t get the wifi signal properly. He would always have to cut the call and the check the signal and call me back. So now I can recommend him to use this device where he can know where the wifi strength strong and this would lead to none interruptions while talking. This was one of many projects I have decided to work on. I selected this project because I had all the components needed exceot for the bar graph Led which was available for very less costs.

The hardware components which I needed are breadboard, photon, resistors, bargraph LED, connecting wires. I did not need to download any software to code and also to run the project because there is particle build IDE available to build and run the code, you just have to create an account. The main resources for the project is the particle website since they have all information about the functions, it helped to code easily by referring to these resources.

I started the project by first connecting the components. After I made sure I had all the components, I did the connections. The connections were to similar to lighting an external LED on a breadboard. We just have to make sure which way you want the bargraph to light up the strength meter. I started to work on the code online. I have used the particle build ide. In my code I will be checking three things:

* To handle the error codes from the wifi and to make the light flash.
* I have used wifi.RSSI() to get the strength of the wifi. The return values range between -127 to -1 and convert them to 0 to 9 so it lights up the bar graph LED.
* Sometimes the RSSI() will return values greater than -1 when the photo is very close to the router sourcing the wifi. So to check whether the strength is 1 or 2 since both are error codes and if any higher than the graph is set to full.

The main and important component of my system would be the Photon as it acts as the main communicator. I have connected the photon to the wifi using my desktop terminal, if it flashs cyan color in a slow motion it means its connected to the wifi. Then we send the code from our laptop to the photon through internet (wifi). Once the photon receives it gets the value of the strength from the wifi router it is sourcing and gives the output by sending the information to the bargraph LED.

Initially I planned to connect a speaker that would make a tune whenever the wifi strength is less than the assigned value. But could not implement it and consider it to be future work on the project. And also logging the information from the wifi and storing the data.

Sends the information to output the bargraph

accordingly

Photon gets the value of the wifi strength

Flash the code to the photon

Bargraph LED

photon

laptop

Wifi router