EECS 221 Project 3
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Implementation for Scalability

In my implementation of the UDP protocol for raspberry pi as the server side and the node MCU esp8266(s) as server side has a large potential of scalability. The code is modified and adjusted from the Lightswarm tutorial which is already a pretty scalable communication environment.

Every node MCU as client could broadcast and receive through a specific port to judge the destination while with each esp8266 it self is assigned a unique id according to its ip address. Raspberry pi as the server side receives the log from any clients and decide the master.

In my design, the case of swarm size is simply one, which means that it's the only device could be the master, so it will directly communicate with the server of the average analogue read-in value of the light sensor. In case of scalability, swarm size could be changed according to the maximum current number of devices in the system. And the self-organization capability according to the broadcast and voting functionality will self-adjust even when more devices join the network.