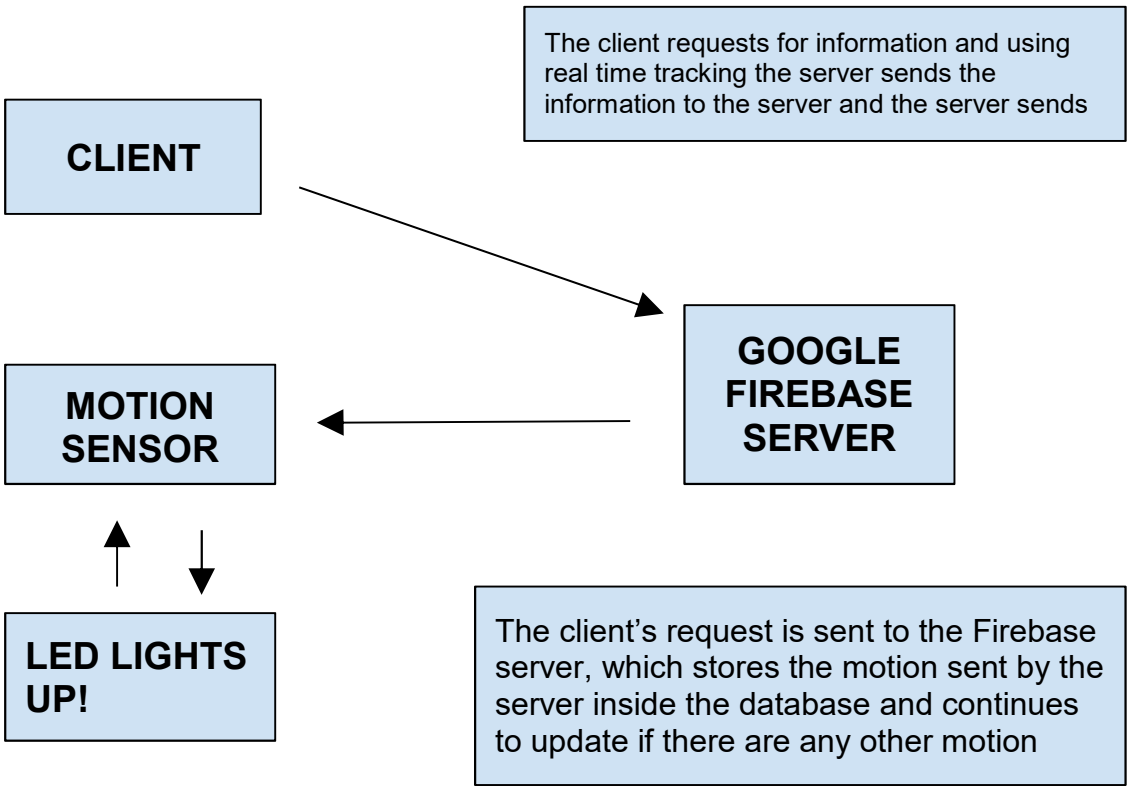
Project Scope

The project expects to have the capability to identify intruders with the utilization of PIR (Passive Infrared) Motion Sensor in which the information can be seen effortlessly by any client utilizing a web application (*Firebase*), available by means of any web empowered gadget through a web program. The data(s) picked up by the sensor are connected to a web database for real-time tracking.

Working Structure:

The project is divided into two parts, hardware, and web.

In the equipment part, the Motion Sensor is associated with an open-source barebones IoT (Internet of Things) board, BeagleBone Black, attached with a LED light which the user can turn off from the firebase web application. In the web part, the web application used to associate with the Motion Sensor (which associated with the board) and show the data(s) picked up by the sensor. It is facilitated on the web with a cloud supplier called Google Firebase. The Motion Sensor close by the LED light can be controlled straightforwardly from the web application. The cloud supplier help the Movement Sensor by putting away the data(s) picked up from the sensor into its database. From the database, it can decide if there is an interloper or not utilizing an arrangement run the show, that is at whatever point there is a set (Long Motion or Short Motion) of four continuous movements distinguished Long Short Long, it will consider an interruption and set it into an interloper counter in the web application. The web application shows add up to number of Long Motion, Short Motion, and in addition Intruders. A chart abridging how this functions is demonstrated as follows:



Key constraints:

1. The Motion Sensor can sometimes be inconsistent when trying to capture motion data as it is dependent on where the sensor is placed. Temperature fluctuation may cause the data to be inconsistent.
2. 100 simultaneous requests are the maximum number a Firebase account type can handle for this project.
3. There might be involuntary shut down of the host device while the device is collecting data, thus constant check is required to monitor for any anomalies, as the device needs to be open the entire time.