Project Beacon

"Live Tracking of Temperature and Shock Data along with GPS"

Problem Statement:

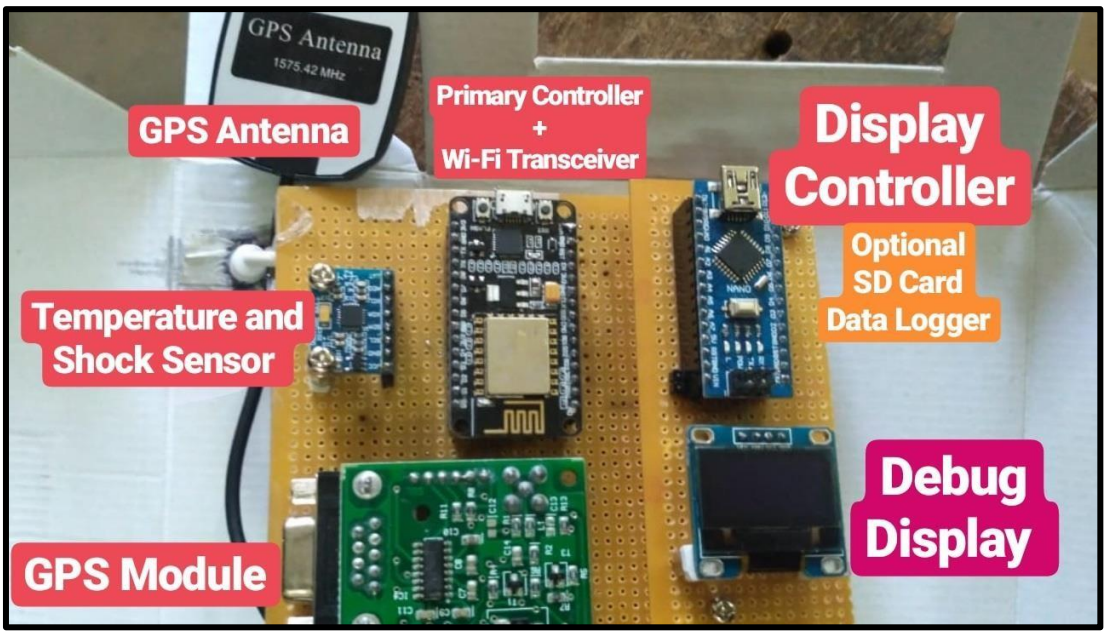
The industry produces temperature sensitive product which needs to be stored & transported at specific temperature only. These products, if during transportation, exposed to temperature variations & shock, and then they are rejected by the clients. A system, continuously tracking the temperature & shock is needed to ensure quality products being delivered to clients.

Proposed Solution:

We have fabricated a prototype as shown in the image below.
It consists of a temperature, vibration and GPS sensor along with Wi-Fi Transceiver.
As auxiliary add-on board, consisting of SD card logger and the debug display may be used as required.

So when a client needs to track the consignment, they just need to sign in to the server (detailed steps given below) and they can see a real-time dashboards that we have assigned to the client. Also they can see individual devices and the related data.
The dashboard as seen in the image below is very intuitive to understand. The entire dashboard can be seen in action in this video:
https://youtu.be/k1zDWSRCCWM

Component Placement Diagram:



Step 1: Making device ready for transmission:

Power up the device **using micro-USB slot** provided on side of the package and wait for the device to be ready (device status can be checked on the OLed Display).

Step 2: Wi-Fi Provisioning:

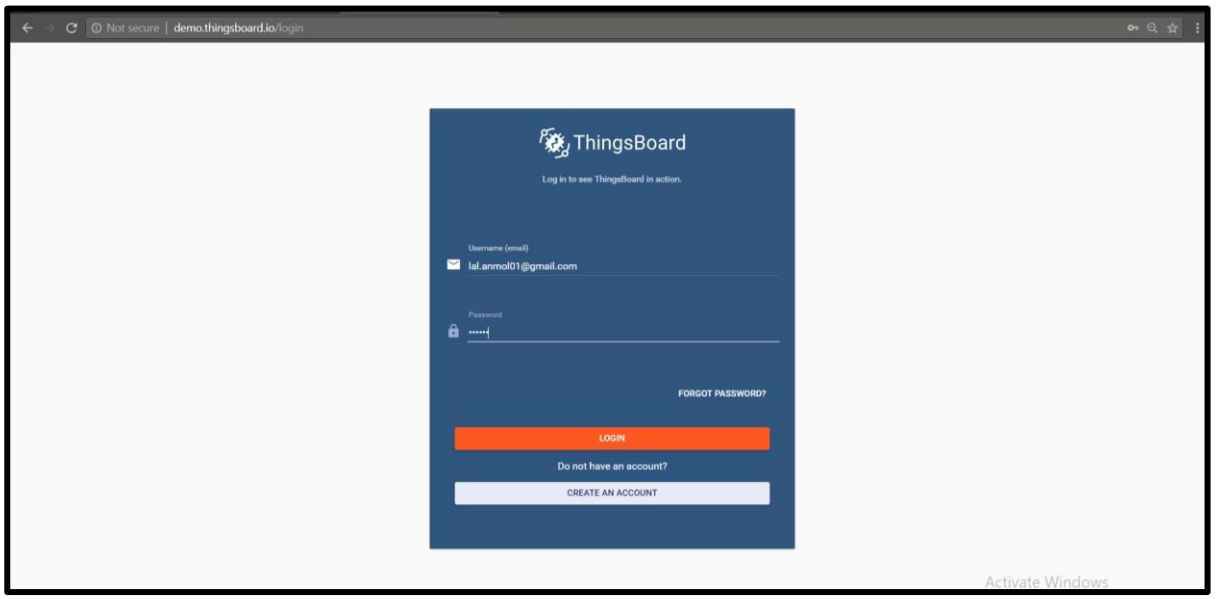
Providing Internet Access to Hardware
The NODEMCU is programmed to connect with a hotspot with
SSID-'Beacon' and Password-'makeinindia'

Activate any mobile hotspot having internet access with these settings and the NodeMCU will start communicating with the ThingsBoard cloud.
This is confirmed by debug messages displayed via OLed display.

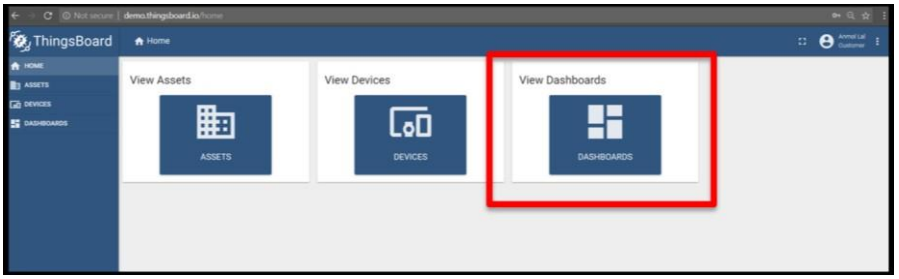
Alternatively, changes can be made to the SSID and password in the **.ino** file. This will need additional installation of Arduino IDE and NodeMCU library.
So it is not advised.

Step 3: Viewing Results on ThingsBoard

1. Sign in to demo.thingsboard.io using username-'patil.ajg@gmail.com' and password='beacon'



2. Go to **Dashboards** and select **Project Beacon:**



3. In the Dashboard Pane, you will see the data being logged as graphs and live GPS location being mapped onto an Open Street widget. These widgets and the look/presentation of the dashboard can be customized using developer login on Team GCoEA.

   You can:
   a. Change the duration of data being displayed on the graph
   b. Maximize the Dashboard for Command Centre / Situation Room Display experience.
   c. Maximize individual widget like Map to zoom in and out.

Dashboard View: