Summary

In this project, we use a GPS sensor connected to a NodeMCU mounted on a drone which will be connected to the internet via WiFi. This would send its location data via Flask to a remote NodeMCU which would act as a hub. This NodeMCU hub can thus connect to multiple Drones thereby enabling scalability. Now the NodeMCU hub would upload the location data of all Drones to the Azure IoT hub. The Azure IoT hub, which is a cloud-hosted solution back end, would store the location data in a secure Blob storage. Our Flask server has been hosted on an online service called PythonAnywhere which allows users to host, run and code using the flask framework in the Cloud.

In the front end, we allow the user to access the current location of the drone visualized in a map pointed out by a marker. This is done using the Flask-GoogleMaps library. Furthermore, a graph shows the changes in altitude as received from the NodeMCU hub.The user can also access the previous location data of the drone to keep track either via Azure or via a temporary storage array in Flask.

Devices Used:

- NodeMCU ESP 8266
- UBLOX Neo 6M GPS Sensor

Figures of Implementation Setup: