IoT Applications Development course assignment

Course Assignment: IoT Bag Monitoring Service

Create an IoT handbag/backpack monitoring application that helps end users to track their handbag location as well as its status if it is opened or closed. There will be a Bag IoT device placed inside each handbag. The IoT device will monitor the light intensity and figure out if the bag is opened or closed from the light intensity. it will always be dark inside the bag If the bag is closed and there will be a light if the bag is opened. The Bag IoT device also has a GPS sensor to detect the location of the bag. The handbag application is using the GPS sensors. The application should have multiple pages to serve both of the customer service agents and End users.

The application should allow the IoT handbag **Customer Service agent** to register/add new bag to the system and define its sensors and who is the owner of the bag and the owner contact information.

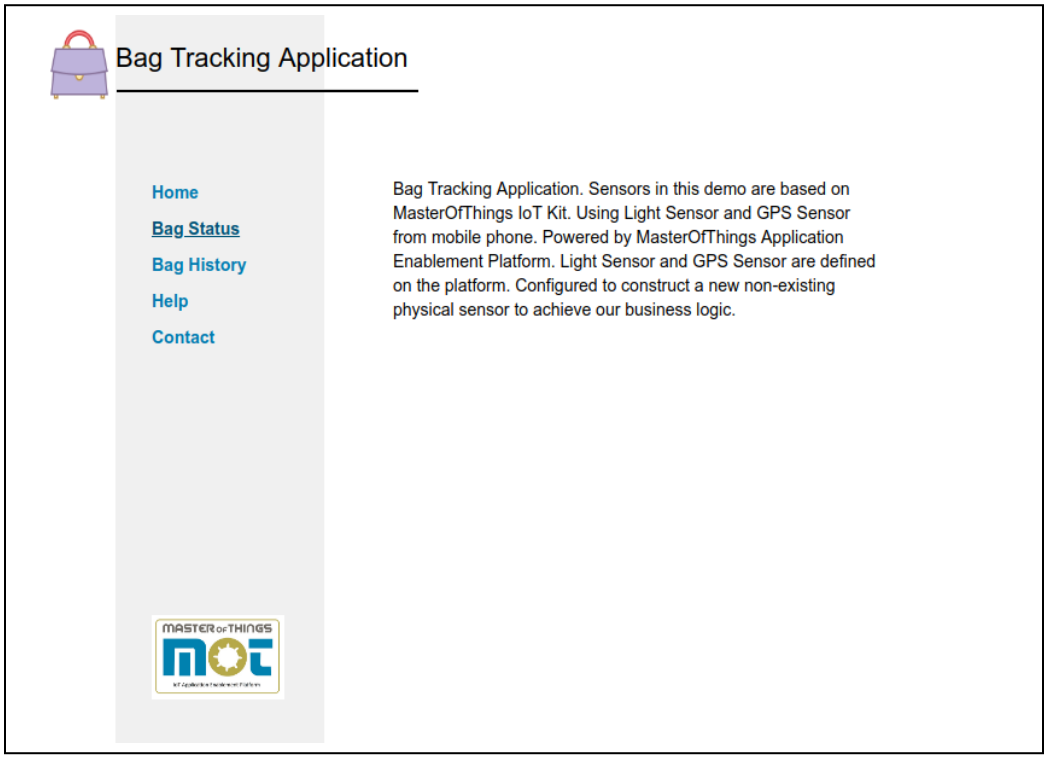
Each end user should enter his Bag ID and correct password to track his bag location on a map and get information about its latest status or historical locations. Example Screen shots of the application pages are shown below.

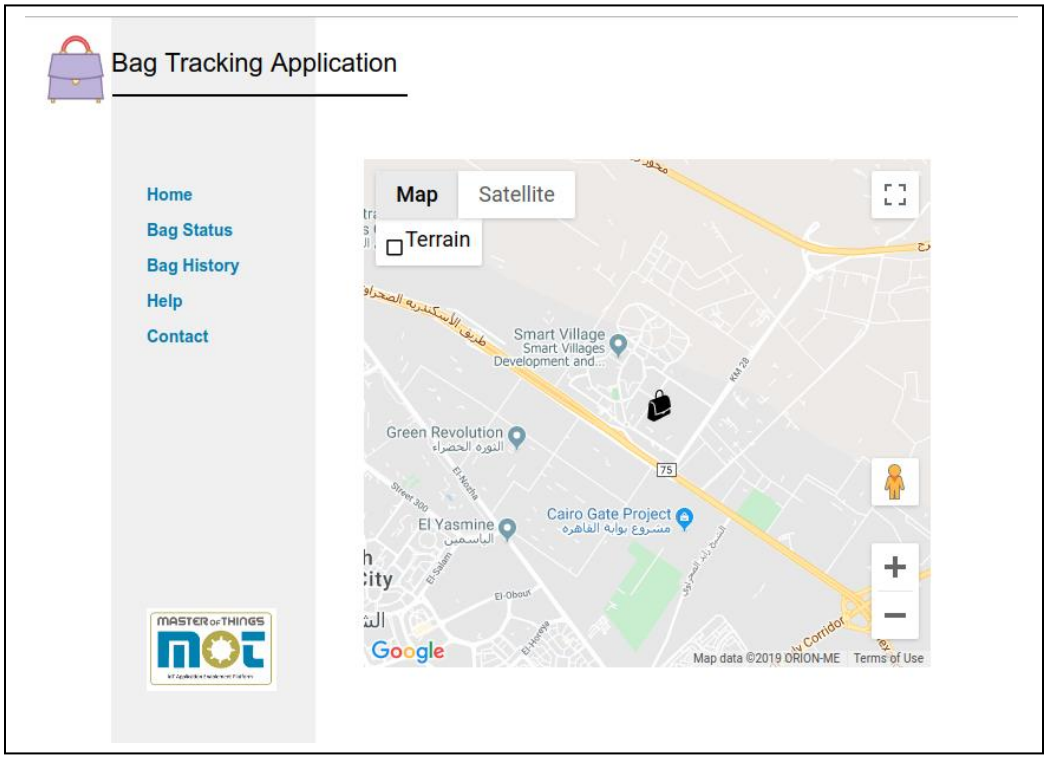
Hints to help you to do your assignment:

a. Use mot IoT Kit sensors (GPS and light intensity).
b. Build a template page that contains all the common components/plugins for use in all your project pages.
c. Create a virtual sensor for each bag with the GPS location readings and light intensity sensor reading. Use the virtual sensor ID as the Bag ID.
d. Use the map plugin to show the location of the bag. Change the map standard marker image/icon URL for the bag to appear on the map.
e. Create an application table to store Bag ID (the Virtual sensor ID), bag owner information (name, phone, Email) and Pin(password).
f. Use Generate Form capability to build a web interface to be used by the customer service agent.
g. **Evaluation points:**
    a. 60% of score for All above requirements
    b. 5% of score for creation of a consolidated sensor (for bag location and status) and use it to display the bag status and show the bag location on google map.

c. 5% for Adding a monitored event to send Email to the user in case the bag is opened.
d. 30% for Adding monitored event to send Email to the user if the bag goes outside a specific circular geographical area (Geo fence) whose center is at your home and its radius is 100 meters. Hint: use the backend equations to calculate the radius and add a monitored event if the radius is bigger than a value.

Sample GUI screens of the Bag Tracking Application.




Bag Tracking Application
Home
Bag Status
Bag History
Help
Contact
Map
Satellite
Terrain
Smart Village
Smart Villages Development and...
Green Revolution
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El Yasmine
الياسمين
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