**6.170 Project 3: Food Hunter**
**Team Design Doc**
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# Design Overview

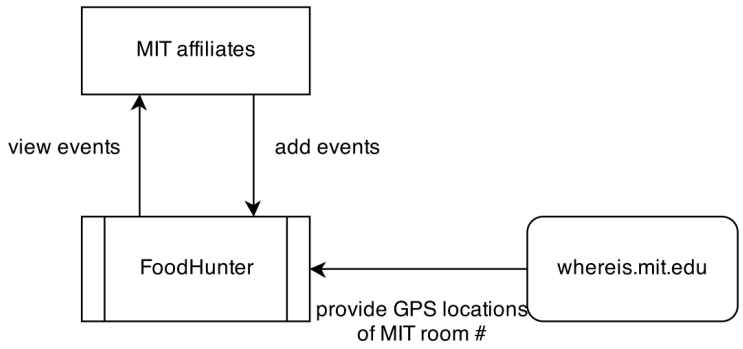
Food Hunter is a web application that organizes and visualizes free food events taking place on the MIT campus. MIT affiliates can post events to the app, and our app will list these events on a master calendar and also provide a real-time map of where they are for all MIT affiliates to see. Users can also subscribe to email notifications about events in their preferred time ranges and/or locations.

Our big idea is to organize MIT's free food events data. We feel the current email spamming approach that many groups adopt is not effective. It creates a vicious cycle of users getting spammed, creating a filter to prevent spam, groups needing to spam more to publicize, and so on. The free food mailing list is also hectic at best. Our app aims to visualize these events in a clean and meaningful way, so hungry students can easily see where food is available, without having their inboxes explode or having to dig through the spam.

Some specific purposes of our app includes:

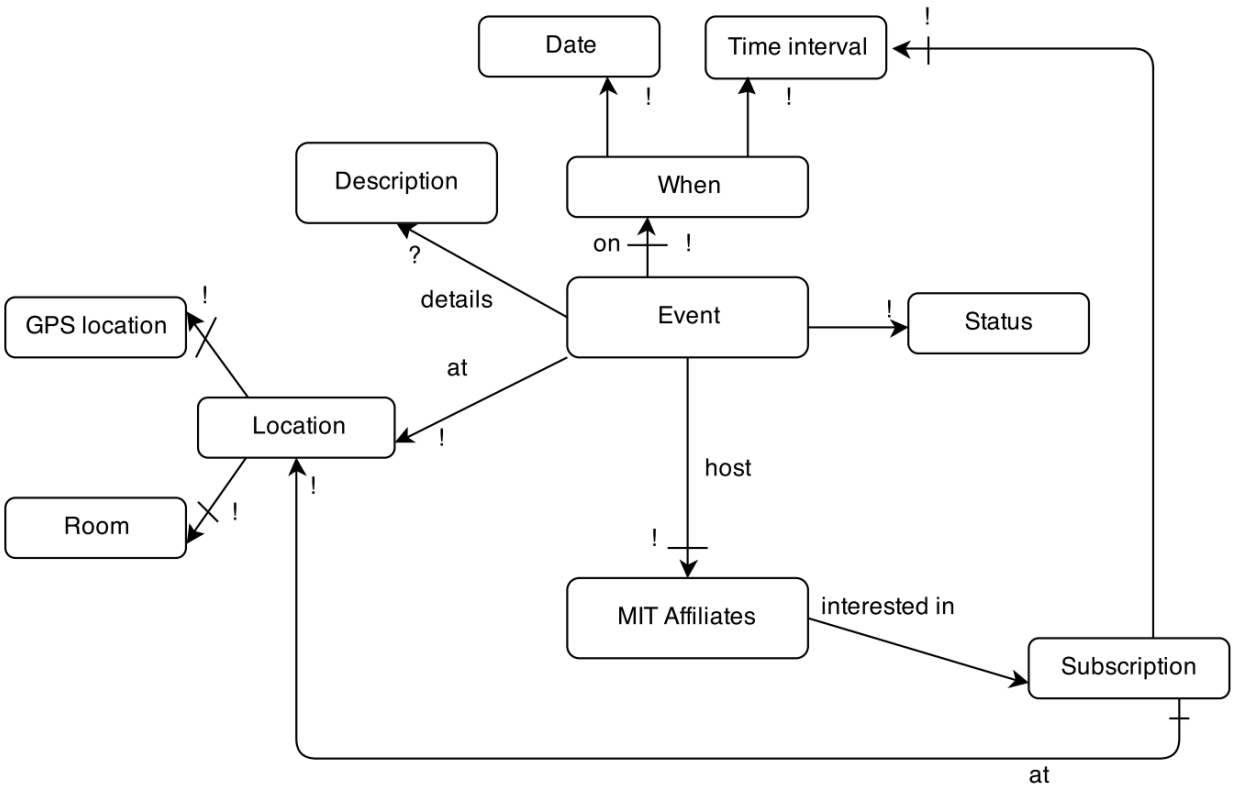
- Allowing MIT organizations to notify interested parties about events with free food. This can aid with their event publicizing.
- Reducing the amount of wasted leftover food.
- Allowing all MIT affiliates to easily see when/where free food will be available and/or when it's gone

**Context Diagram**



The above diagram demonstrates the context our app works in. Only MIT affiliates are allowed to access the information of our app, because we want to prevent non-affiliates from taking advantage of MIT's resources (e.g. attending events that target the MIT community). We also will be using the MIT Campus Map web service, so we can find the GPS locations of each MIT room number. We need this to create our event map.

# Data Model




The above demonstrates our data model design. Each Event contains information like the time, location, and status of the particular event, and each Event is linked to a host MIT affiliate, who posted the event to Food Hunter. Each MIT affiliate can also subscribe to email notifications about events at specific locations and/or times.

Concepts:

- **Event:** Representation of any free food event ongoing or upcoming on campus. Each Event and its details is visualized on the online real-time map. The Event can be hosted only by one single user. The Event can be viewed and updated by any MIT affiliate. The Event is time and location specific, but does not necessarily has a

detailed description. This fulfills our purposes of allowing MIT organizations to notify others about their free food and other affiliates to see these events.

- **Subscription**: Each MIT affiliate can subscribe to food event notifications based on time and location preferences. Each Subscription is associated with one time and one location, and each user can have multiple Subscriptions. When an event is added or updated, a notification is sent out to the users who are subscribed to the related time and location. For example, one can subscribe to Building 32 mornings and W20 evenings. This helps allow MIT affiliates know right away when free food is available with less spam in their inbox.
- **Status:** Lets users know the current state of the event, such as “cancelled”, “finished”, “ongoing”, “upcoming”. The Status is set when the event is created, but it can be modified at any instance of time by any app user. This would help our purpose of allowing all MIT affiliates easily know if there is still free food or not.
- **Location:** Each room number (e.g. 32-123) is linked to a GPS location, which we retrieve from the MIT Campus Map web service. This helps us create a map of events and also lets users see where the event exactly is.

# Design Challenges

1. Audience control. The are several options for choosing the audience:
    - Everyone can use the app
    - Everyone can view events, but only MIT affiliates can host events
    - Only MIT affiliates can view and host events
    - **Solution:** We decided that only MIT affiliates can access the web app in order to avoid unwanted public and strangers. Therefore, we will authenticate users by requiring their MIT certificates.
2. Subscription representation. Users may want to be notified of certain free food events depending on location and time. A few possible options we came up with were:
    - One subscription for each user. Each subscription would have a list of locations and a mutable time preference. However, this is difficult to use when querying once an event is added or updated.
    - Multiple subscriptions for each user, with one location and one time preference for each subscription.
    - **Solution:** We decided to have multiple subscriptions for each user for easier querying purposes
3. Event status. Free food can disappear quickly and to save people a trip, there should be an indicator letting users know whether there is still free food or not.

- Having comments that are attached to the event
- Having a status options that users would make use of to indicate that there is no more food. This could create issues where users would edit the status that is different from the actual status of the free food
- **Solution:** We decided to use the status option as it is very straightforward with regards to our purpose of letting users have easy access to where free food is.

4. User representation.
    - Create a separate representation for viewers and hosts. This option requires two separate designs for a general user (viewer) and an event creator (host).
    - Create one single representation for all MIT community members.
    - **Solution:** Keep all users in the same data collection. The simplicity of this option allows any MIT affiliate to be a host and a viewer at the same time. Thus, notification routine will require scanning through only one single collection.