Web Apps (17-437/637) Project Specification

Team members / Andrew IDs:

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Project Description:

For our final project, we will be building an application for viewing places of interest and people in Augmented Reality. Imagine you have just travelled to Chicago and want to find The Bean to snap a selfie with your friends. Along the way, you get hungry and realize you've really been craving some good deep dish. Our product attempts to make exploring a new city and finding places of interest a breeze! With the offerings of Augmented Reality, we will cater information about restaurants, landmarks, and retail centers in real time.

Our application will enable the user to view places, which are overlaid on the phone's camera view in real time using Augmented Reality. You can now see where places are in relation to you and to each other in real space, as well as learn more information about the place. This will reduce confusion about the location of places, and open new doors for exploring new places!

The app will use the phone's camera to get a rendering of the surroundings on the screen. It will contact our backend to get information about places of interest given the current location of the user and filters that they have applied. The backend will spit out the appropriate coordinates for relevant places, which will be overlaid on the screen. Users can interact with these places by clicking on them to give more information, including seeing what their friends think of them.

As a stretch goal, we'd also like to display the location of friends that are nearby, and also, incorporate navigation into our application. For example, instead of just seeing the location of a restaurant, the user would also be able to navigate there and see the route overlaid on their camera view.

Technologies:

We will use Django to build a REST API. This API takes in user location and filters to serve up places of interest. Our backend will interact with the Google Maps and Yelp APIs in order to get location and information about these places.

After careful research, it was determined that we wouldn't be able to make an in-browser app due to limitations in current AR technology. Because of this, we will be building our project as a native iOS application for the front-end with a back-end hosted on AWS.

Product Backlog:

1) Explore places of interest in AR: The home view will be a camera view that shows very popular / notable places of interest on the screen.
2) Search for and locate specific places of interest in AR: The search bar on the home screen will allow users to search for specific places of interest. On selection, it will go back to the home view and show the selected location, and as a stretch goal, the directions to the place.
3) Get in-depth information about place of interest selected (Like reviews / prices / menu from Yelp):
    a) On click of a place of interest, a small card would show up. This would show a brief summary about the place, like distance, open/close, number of friend upvotes etc.
    b) On click of that card, a new view will show up, providing detailed information about the place, like reviews, menu etc.
    c) This would also be the page where the user can rate the place (upvote / downvote) and see which of their friends have visited the place etc. They can also add a review for the place on this page.
4) Recommend places of interest (Stretch goal): Based on search history and places of interest previously visited, we could recommend places that the person should visit.
5) Friends:
    a) Find friends by typing their names into the search bar, and connect with them by clicking the plus button next to their name.
    b) View friends on map in the home view simply by looking around.
6) Registration and login: Simple login and registration page. We would also allow Fb/ Google / Yelp account connections.
7) Show navigation / routes (Stretch goal): We would add routes in AR to show how people would reach a certain location.

Sprint 1 Backlog:

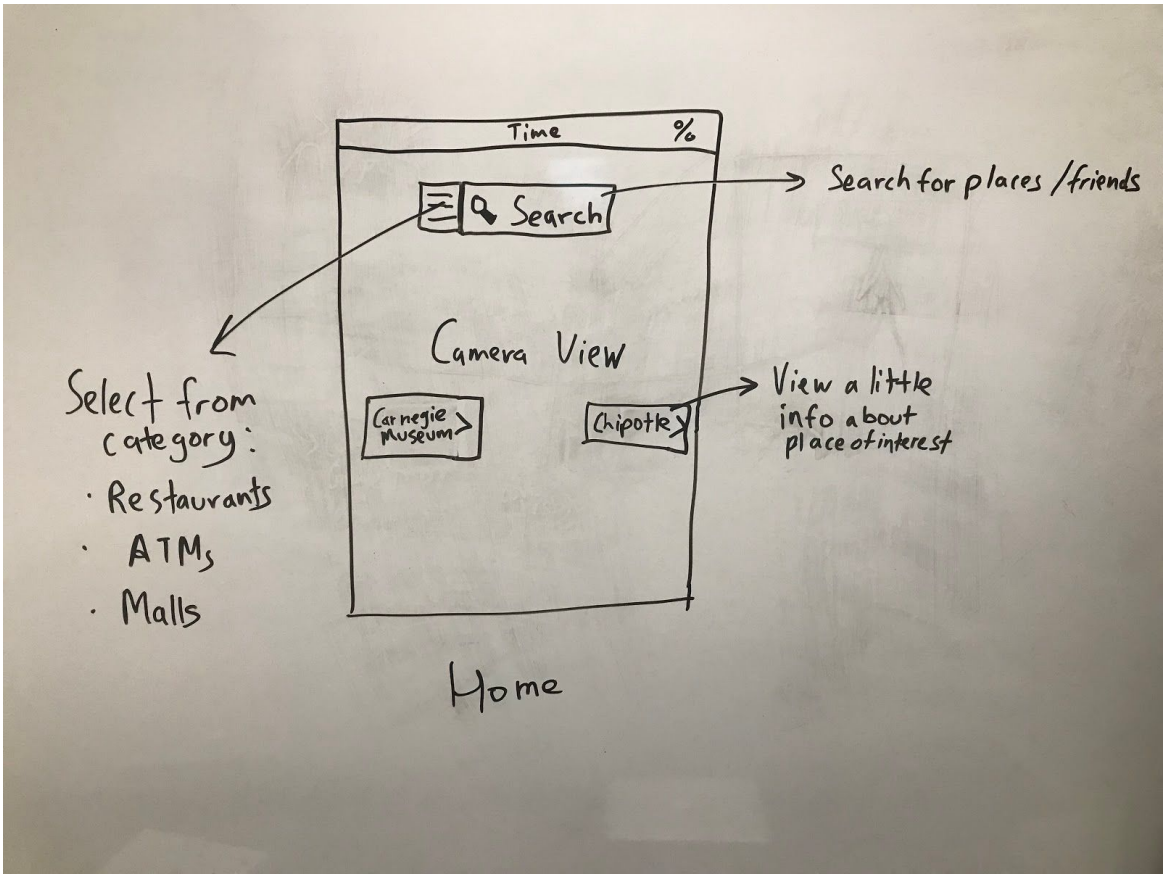
1) Explore places of interest in AR:
    a) Get camera view displayed on screen - Varun
    b) Send user location to backend server - Jack
    c) Backend server connects to Google Places API and get places of interest using user location - Adithya
    d) Places of interest are displayed on AR using the location / direction information. - Varun
    e) Filter places of interest by category (restaurants, cafes, roofing contractors, etc.) - Adithya

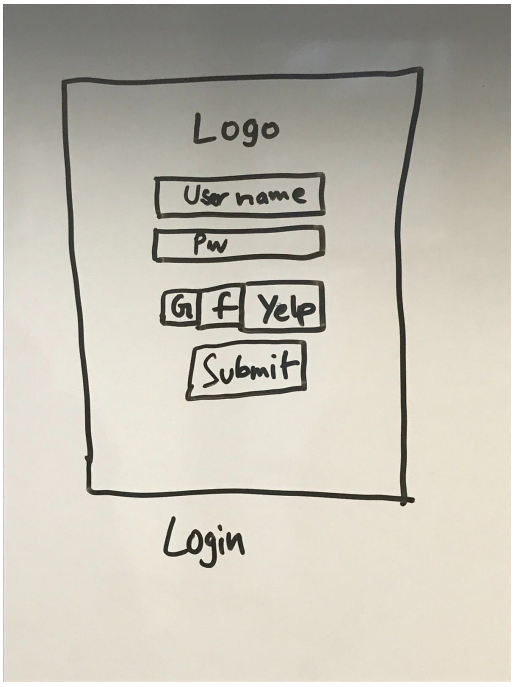
Product Owner Sprint 1:
Jack Dangremond (jdangrem)

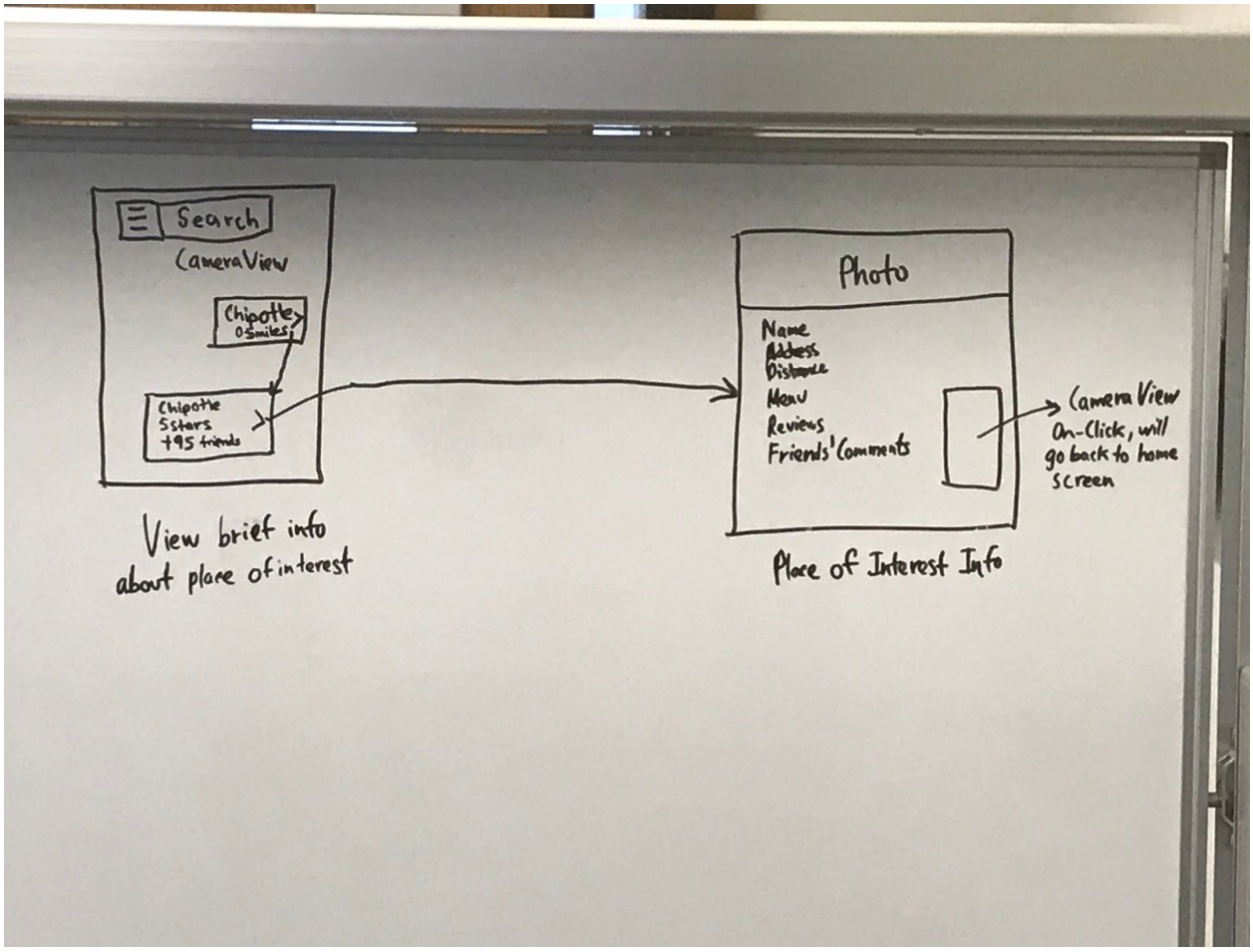
Data Models:

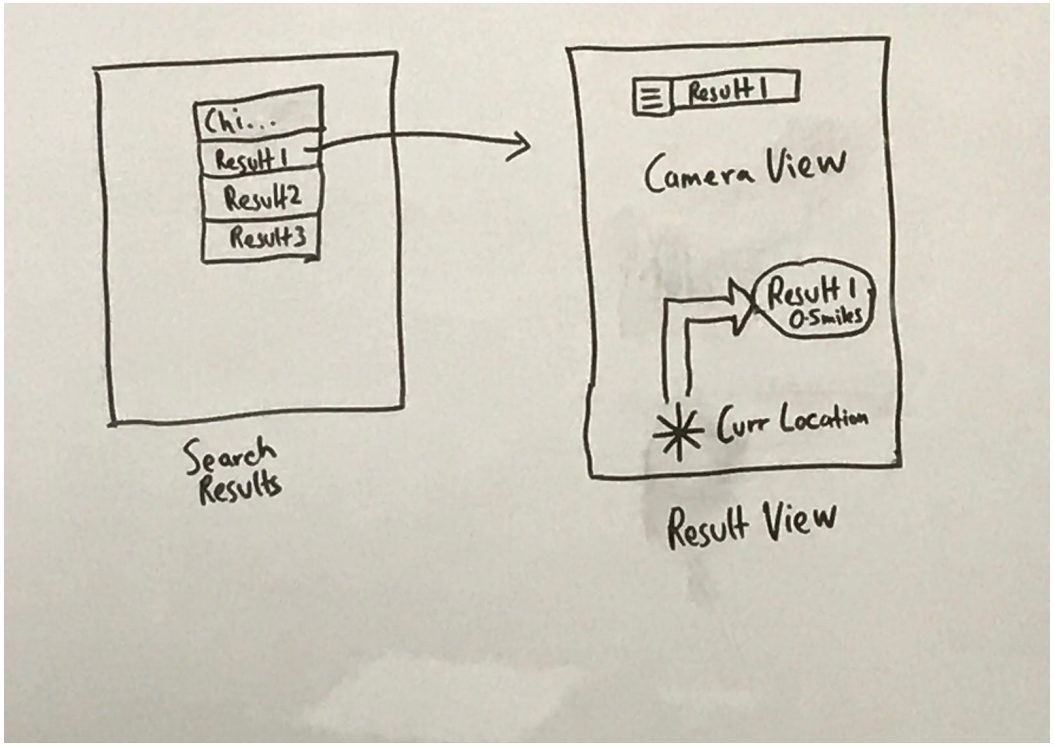
```
class Profile(models.Model):
     user = models.OneToOneField(User)
     scout = models.ManyToManyField(Profile)
     google_profile = models.OneToOneField(User)
     facebook_profile = models.OneToOneField(User)
     yelp_profile = models.OneToOneField(User)

class Review(models.Model):
     place = models.ForeignKey(Place)
     reviewer = models.ForeignKey(Profile)
     text = models.CharField(...)
     rated_pos = models.BooleanField(...)

class Place(models.Model):
     google_place_id = models.CharField(...)
     yelp_place_id = models.CharField(...)
     overall_rating = models.IntegerField(...)
```

Wireframe mockups:






Search
CameraView
Chipotle
0 Smiles
Chipotle
5 stars
+95 friends
View brief info
about place of interest
Photo
Name
Address
Distance
Menu
Reviews
Friends' Comments
Camera View
On-Click, will
go back to home
screen
Place of Interest Info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Result 1
Result 2
Result 3
Search
Results
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0 Smiles
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Result View