Selfie with Strangers

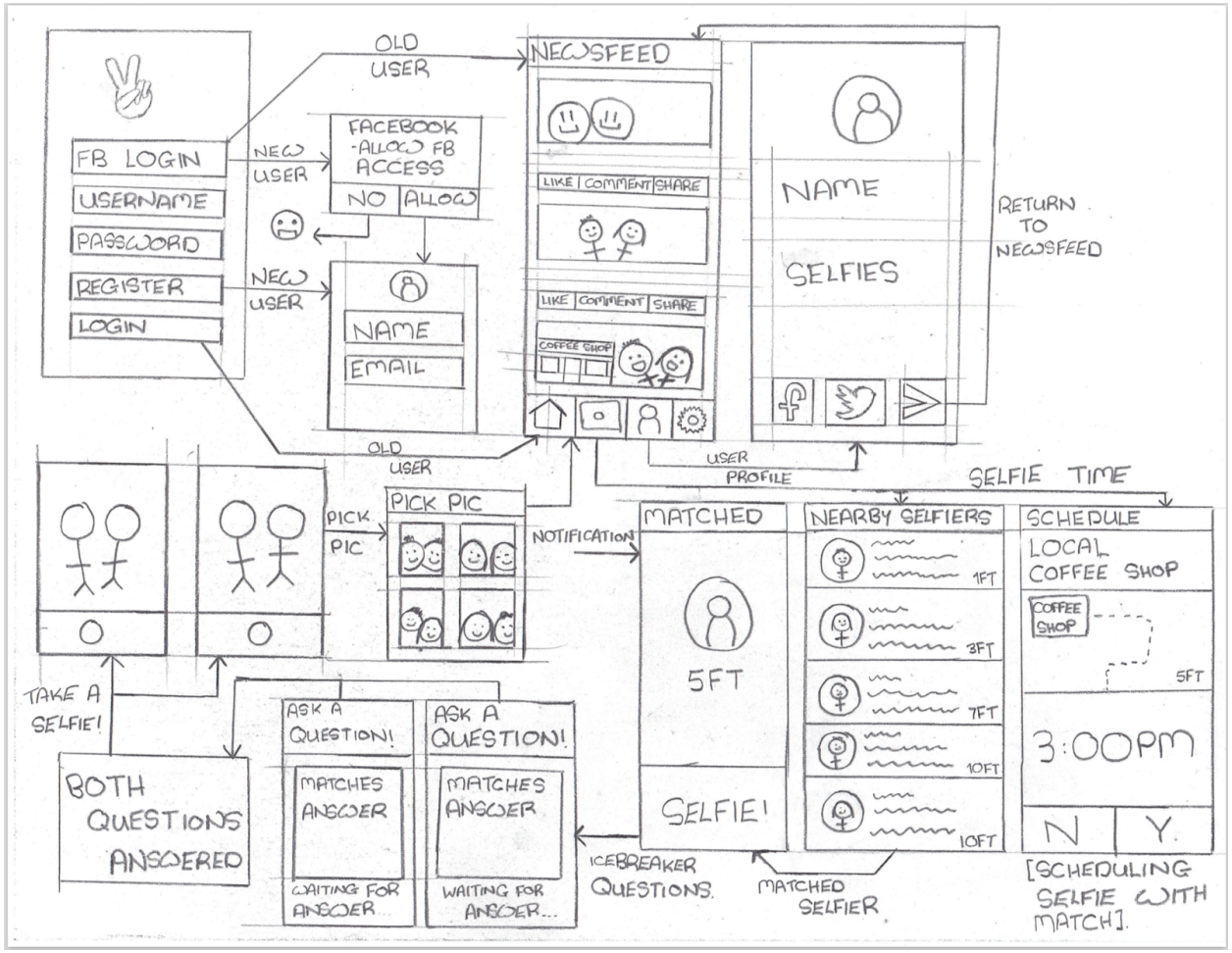
Design Specification

9 April 2015

Summary of the Project Idea

Selfie with Strangers is a low-pressure, low-risk way to meet people around you. Users find other users by being notified when they are close to each other, or by scheduling a meeting for a future time. Once users meet, they tell the other person about themselves and take an awesome selfie together.

Detailed Application Flow



Login:

- Receive information from form and query facebook for authorization
- If need to: Create a new user and save the user to the database
- Loads user session
- User is taken to Newsfeed

General Non-Login Views:

- Should have at least return to Newsfeed button

Newsfeed:

- Maintains a list of X most recent selfies taken in a region (or hold selfies from the previous week/day?)
- Can receive new Selfie to add to list
- Has buttons for View Profile, Search for Selfies, and Settings

User Profile:

- User is able to view all his/her selfies
- Contains basic user information

Search For Selfie:

- Gets location of user
- User gets option of taking a selfie with someone nearby, or someone at a future time and undetermined (but relatively nearby) location
    - Switch between Nearby or Future Views by swiping?
- Nearby:
    - App displays location and image of a nearby user.
    - Displays red border if that user is the one for Future Selfie ???
- Future:
    - Displays location near two people for Selfie and a time
    - Users must both agree for it to be scheduled
    - Decline by clicking NO or swiping?
- Receive decision and then either initiate nearby or future scheduling

Taking Selfie:

- Answer Question:
    - Display question from database to each user to answer
    - Save answer to database
- When Users Meet:

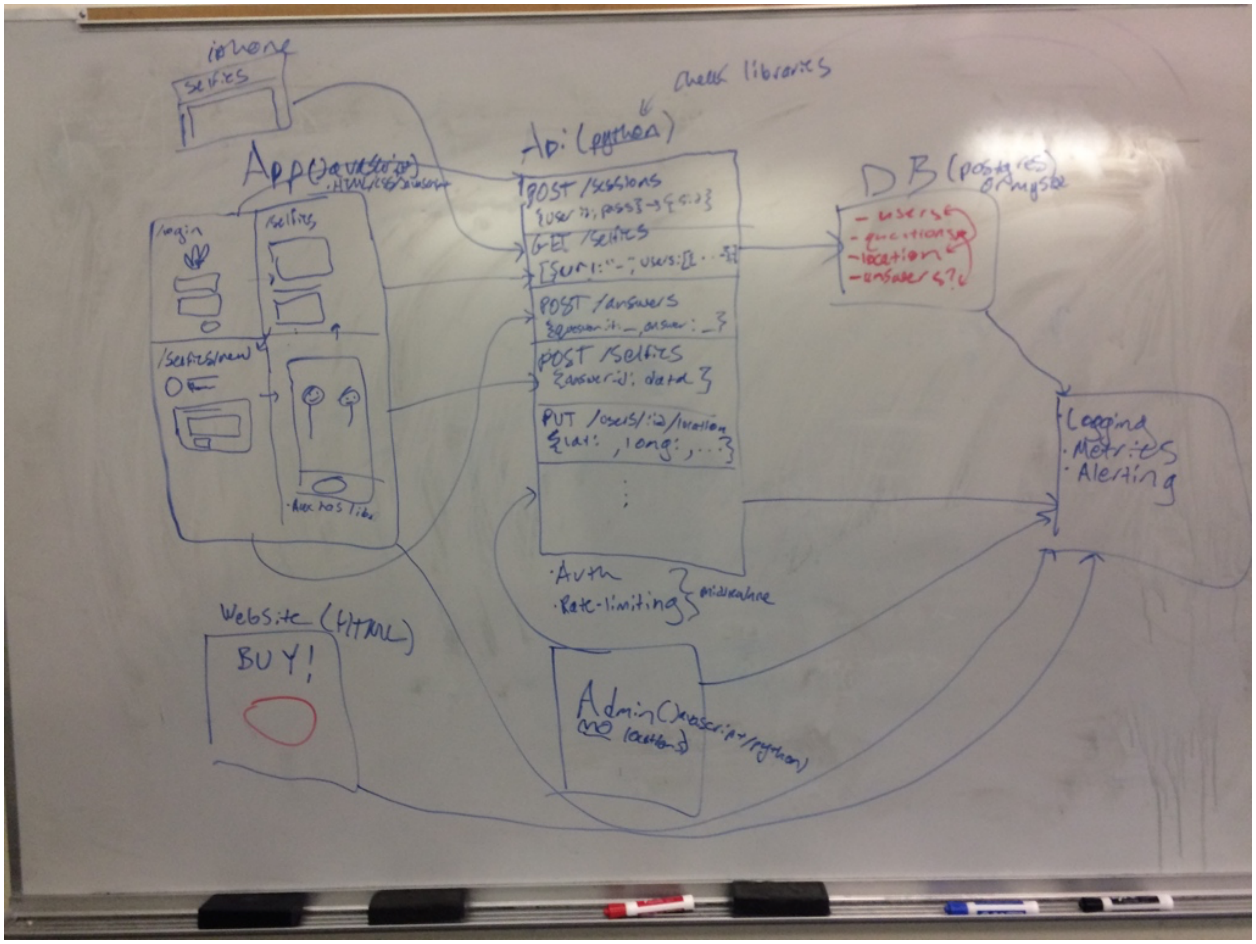
    - Generate meeting code for each user
    - Each user will be required to enter the code that the other person has, in order to verify that they have met the correct person
- Take Picture (s):
    - Pictures taken by either user are temporarily stored
- Pick Picture:
    - Display pictures taken by both users
    - If both users allow pictures to be posted to newsfeed, then the selected pictures is posted to the newsfeed
    - The answer to the question is associated with the picture, as well as an optional caption

Settings:

- User is able to update user information and update security preferences
- User is able to specify whether or not selfies will be posted to the newsfeed

Aleksandr Burkatovskiy - 3/27/15 and Caleb Larson - 3/29/15

Architecture Diagram



Bruce Spang - 4/9/2015

Software Components

(include the relevant libraries for each component description)

App service

- The app service will be responsible for rendering the app and interacting with backend systems on behalf of the user
- It will be written in express.js and will use ejs

Api service

- The api service will be responsible for accepting api requests and managing data
- The api service will be written in python and Flask

Login/Users component

- Facebook api/Javascript SDK to log-in with facebook
- Use oauthlib for authentication with the api
- Passport.js for authentication in the app

- Must use bcrypt for storing password hashes

Newsfeed

- The newsfeed will be a list of selfies from all users. This can be easily implemented with flask/express.js

Search for Selfies

- HTML5 geolocation library: http://www.w3schools.com/html/html5_geolocation.asp
- Geolocation via ip address: urlopen from urllib, this gives us the options of using something like http://freegeoip.net/json/<IP> to get a JSON object with the geolocation data of that IP
    - Example use here: http://stackoverflow.com/revisions/26165487/1
- Making a unique ID for this match in python (this makes it easy to assign a question to this match and for finding pictures)
    - UUID: https://docs.python.org/2/library/uuid.html

Taking a Selfie

- getUserMedia API for taking a picture
    - http://davidwalsh.name/browser-camera
- express has an api for uploading files
    - http://howtonode.org/really-simple-file-uploads
- Flask has an API for uploading files
    - Found here: http://flask.pocoo.org/docs/0.10/patterns/fileuploads/
- Upload to Facebook
    - Facebook Javascript SDK for posting a link: https://developers.facebook.com/docs/javascript/quickstart/v2.3#dialogs
    - Facebook Javascript SDK for actually uploading it to Facebook https://developers.facebook.com/docs/javascript/quickstart/v2.3#graphapi
    - Worth looking into if we are truly dedicated to Python:
        - https://github.com/pythonforfacebook/facebook-sdk
        - http://facebook-sdk.readthedocs.org/en/latest/api.html

Machine Learning

- Scikit-Learn/Scipy/Numpy - These libraries will be used to build statistical models for matching users to each other, suggesting ice-breaker questions, and possibly for suggesting times and locations.

Ops Details

- Vagrant for the dev environment
- Ansible for provisioning/deployment
- DigitalOcean for hosting
- Travis for CI
- Scales/graphite/nagios for metrics

Zac May - 3/31/15, Oskar Singer - 4/9/15, Wesley Fung - 4/1/15, Bruce Spang - 4/10/15

Database Schema

Please see the initial schema migration in *src/api/migrations/versions/32d34fe1baa0_.py*

Aleksandr Burkatovskiy - 3/27/15, Oskar Singer - 3/30/15, Bruce Spang - 3/30/15

Revision History