Fermi
COMPSCI 316 Final Project Report
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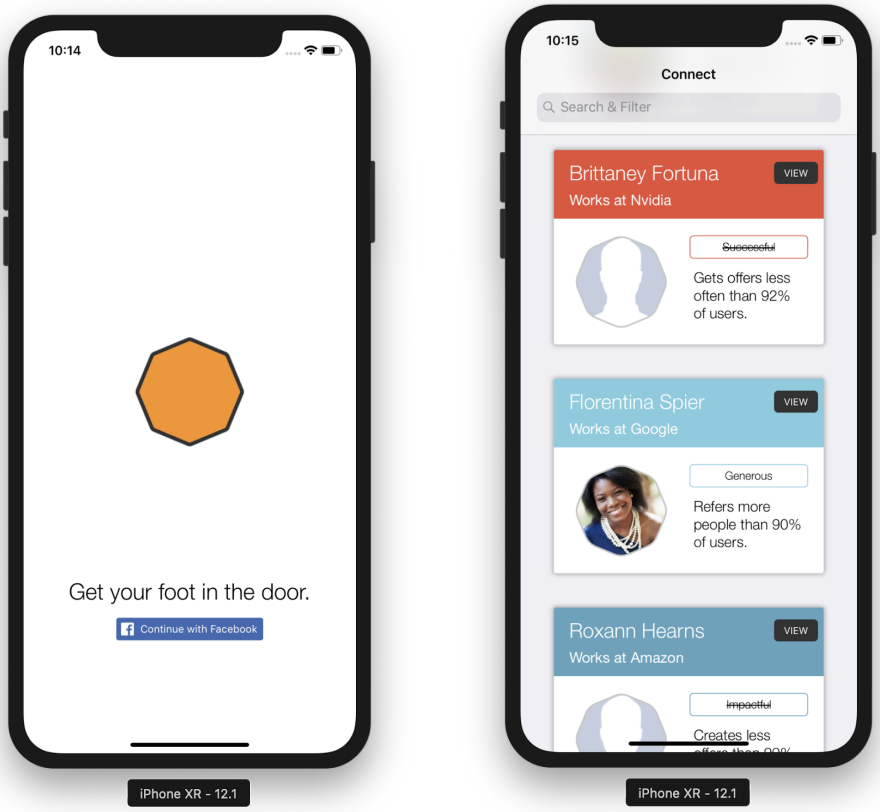


Note: the code for our project can be found in our GitHub repository.

Project Description

Fermi is an iOS app that provides a sleek, simple interface to easily connect users seeking referrals to companies to those who can refer them. All users can both request and give referrals, and each user has four key metrics associated with them:

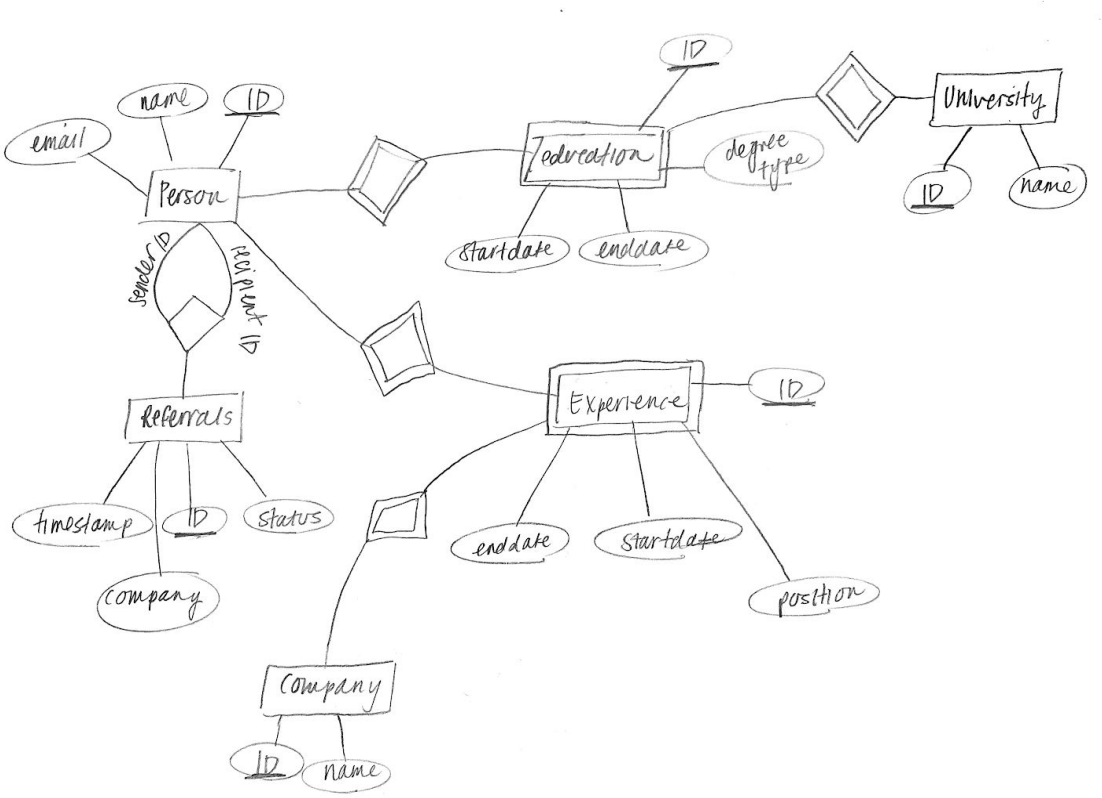
- Their **generosity**, based on the number of users they have referred;
- Their **impact**, based on the number of people that they referred who got offers;
- Their **popularity**, based on the number of times they have been referred;
- Their **success,** based on the number of times they get offers from referrals.

These qualities are computed as percentiles – i.e., a user A can be in the top 70% in generosity but in the bottom 40% in impact. As an app solely dedicated to the distribution of referrals,

Fermi streamlines the process, making it quicker, easier, and less awkward. Users input their educational and professional experiences and can search for other potential referees using these characteristics. Our home page also suggests users who have been most recently active on the app.

With the simple click of a “refer me” button, any user can request a referral from a peer. A referral’s status is initially set to “requested,” can be “granted” or “denied” based on the decision of the referrer, and will be set to “offered” or “rejected” by the referee depending on interview outcomes. Until the referral is registered as at least “granted”, the metrics for both users involved will not take into account the current referral connection.

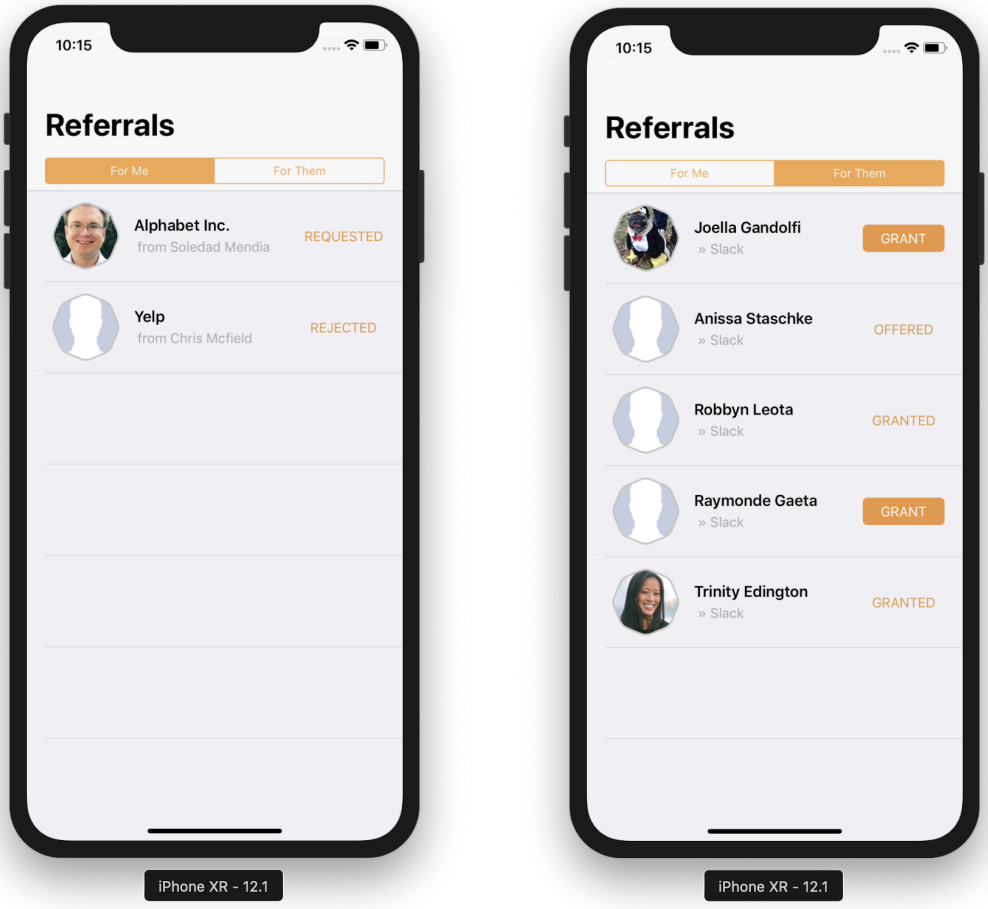
E/R Diagram



Assumptions

- People can only give referrals within the company they are currently working.
- It is acceptable for referral-giving to be streamlined in this manner in the real world.
- People seek referrals to the companies they are applying to work for.
- Working individuals are willing to give others referrals.
- People are incentivized to give more referrals because every time they do, it can improve their quality scores.

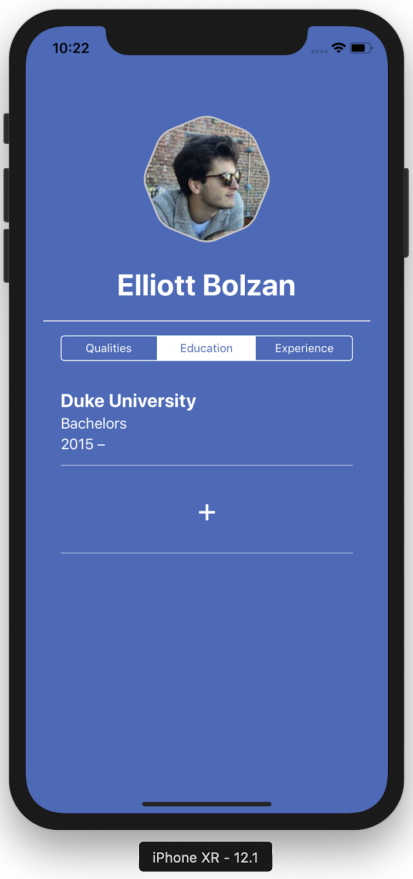
- The education and experience of a job-seeking individual will impact the decision of a working individual to refer them.
- Referrals positively impact recruitment process for a job-seeking individual.
- Referrers benefit, potentially monetarily, from the person they referred being hired.
- Users only have up to three educational experiences and a current company (listing previous companies would be irrelevant, as we have assumed users can only refer to their current firm).
- People who do not have work experience are unable to refer other users.



Database Tables

- Person(id, name, token, last_active)
    - Table of all users with their unique id, name, token obtained from the Facebook Login API (for authentication when making API calls to our server), timestamp of their latest activity (most recently active people appear on suggested list).

- Company(id, name)
    - Table of all companies with their unique id and company name.
- University(id, name)
    - Table of all universities with their unique id and university name.
- Education(id, person, university, degree_type, startdate, enddate)
    - Table of educational experiences.
    - Each educational experience has its own unique id and lists the user it concerns, the university, the degree obtained, and the start and end dates.
    - Users with multiple educational experiences will show up in multiple rows (one for each educational experience).
- Experience(id, person, company, position, startdate, enddate)
    - Table of work experiences.
    - Each work experience has its own unique id and lists the user it concerns, the company, the position, and the start and end dates.
- Referrals(id, sender, recipient, company, status, timestamp)
    - Table of representing referrals with their unique id, the referral sender, the referral recipient, the referral company, the referral status, and the timestamp of last status update.
    - The timestamp is updated whenever changes are made to the referral.



Views

The following are not tables per se, but are used as such in many of our SQL queries.

- Generosity(id, percentile)
    - The percentile field represents the percentage of users who are less **generous** than the user in question, where generosity is defined as the number of referrals made.
- Impact(id, percentile)
    - The percentile field represents the percentage of users who are less **impactful** than the user in question, where impact is defined as the fraction of referrals given that led to job offers.
- Popularity(id, percentile)
    - The percentile field represents the percentage of users who are less **popular** than the user in question, where popularity is defined as the number of referrals obtained.
- Success(id, percentile)
    - The percentile field represents the percentage of users who are less **successful** than the user in question, where success is defined as the fraction of referrals obtained that led to job offers.
- Qualities(id, generosity, impact, popularity, success)
    - A view listing each user's four qualities in one row.