6.170: Software Studio
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TIM in a SUIT: Problem Analysis
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Motivation

TIM in a SUIT is a Glassdoor, Wall Street of Oasis-like online web application to help build social jobs and career community for MIT and make the process of applying for jobs less stressful. In TIM in a SUIT, Students, faculty members, staffs or affiliates could share their own job search experiences with each other and provide general tips regarding technical interviews and preparations for specific positions.
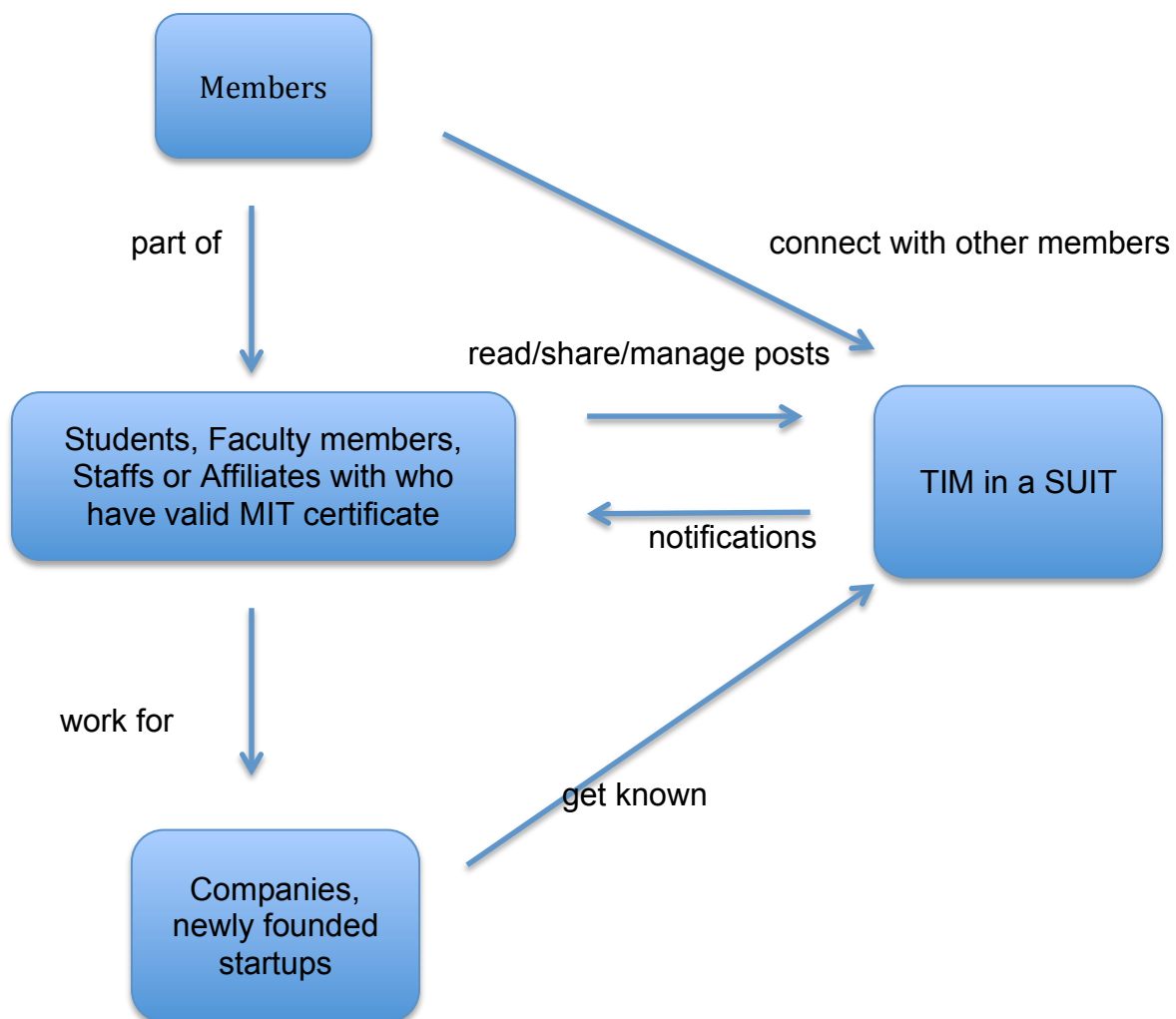
The purposes are:
- **Ease the job application and interview process.** TIM in a SUIT seeks to keep massive information involved in job search in one convenient place and provide a social environment where people can help each other through their own experiences. Before heading into a job interview, or submitting an application, people would have an extra tool to help in their preparation and decision-making. They could read other MIT members' experiences and get more detailed information regarding what to expect from particular companies' recruiting process and be provided with general guidance on preparations for specific positions, interview insights and useful courses or books.

- **Provide a reliable social platform**. By requiring valid credentials such as MIT certificate or Kerberos, TIM in a SUIT would restrict hiring managers, recruiters or outside unreliable source from giving biased and unreliable reviews. Thus, TIM in a SUIT aims to provide honest and reliable information from trustworthy MIT members and would be an ideal place for people who are currently searching for a job or in the middle of job search.

- **Improve networking connection between MIT members by becoming a bridge.** With the help of TIM in a SUIT, MIT members would extend their research and connection and would be able to make well-informed decisions on their choices. They can get a valuable, industry-wide view not just of their target company, but also of other companies in the same field or the work they want to do with the help of other users. By encouraging communication between members, TIM in a SUIT would also encourage mentorship between members.

- **Introduce newly founded startups and keep MIT members informed.** Members could make each other informed by sharing information about newly founded startups or other emerging companies and inspire entrepreneurship in MIT community. Users could provide more detailed

explanation about the companies that they founded or currently working for and advertise.

➢ **Make it easy for people to compare companies across several criteria including, overall rating or interview experience etc.** TIM in a SUIT would help MIT community members make the best decision they can by helping them weigh up the pros and cons of the different areas of the companies they're interested in based on other people's reviews.

Context Diagram

Members

part of

connect with other members

read/share/manage posts

Students, Faculty members, Staffs or Affiliates with who have valid MIT certificate

TIM in a SUIT

notifications

work for

get known

Companies, newly founded startups

Concepts

User: MIT community member with valid certificate and Kerberos. Could be either a student, faculty member, staff or affiliate. The user will have an access to the TIM in a SUIT web application and can read all existing posts/reviews or write a new one. The users could post anonymously or using their names or username of their membership account if they have one. To eliminate duplicate users, one person can have only one membership account.

Post: A comment that a user posted either as a general recommendation or question that could be either related to technical interviews, general job searching process or guides on preparations.

Liking: If the user finds a particular post very useful, he/she can show his/her preference by either liking or disliking a post. To account for mistaken circumstances, liking could be withdrawn. The user can like or dislike a particular post at most once.

Reporting: If a particular user thinks that the post is inappropriate or not legit, they could report it and send a request to get that particular post deleted. If the post gets reported multiple times, a formal action will be taken and the post will be deleted if necessary.

Data Model
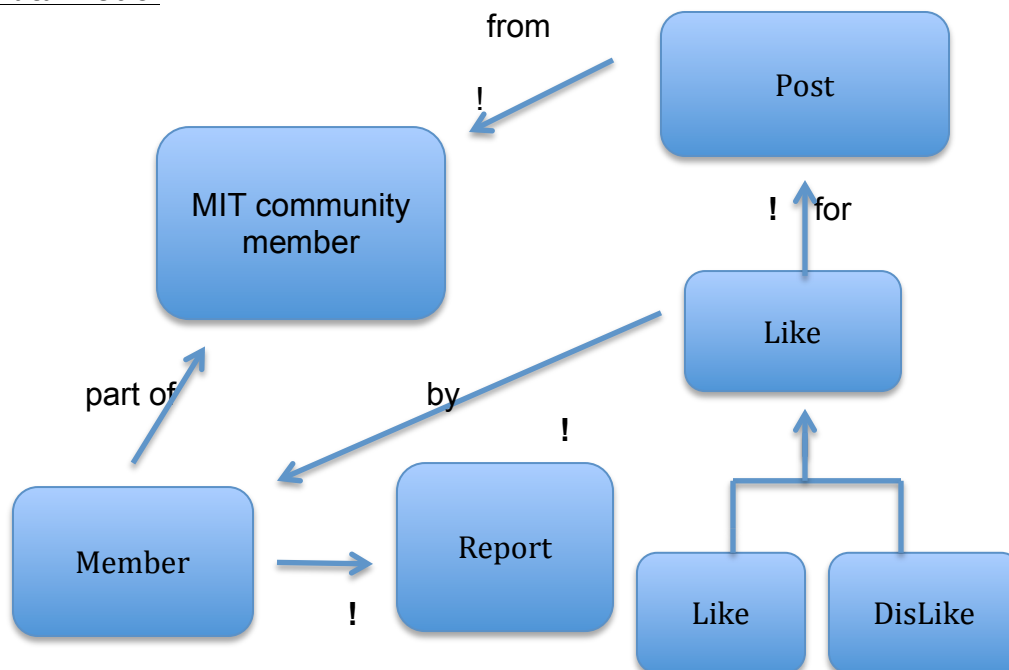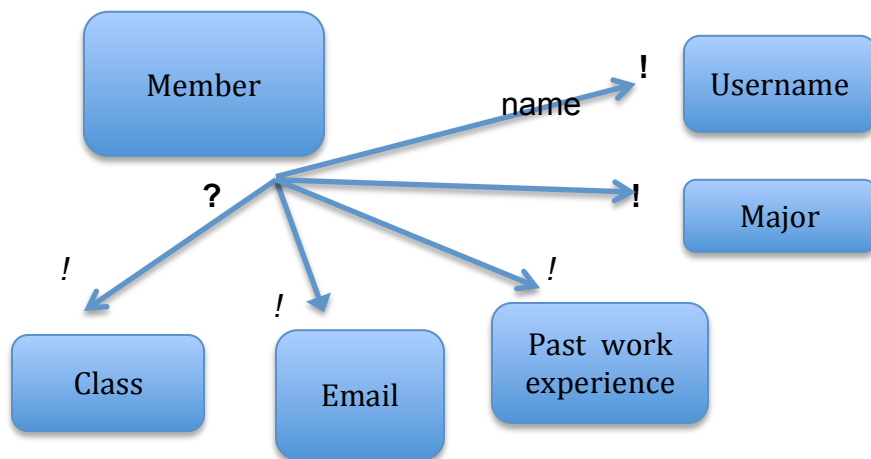
Additional constraints:
- At most one uplike/downlike per member/post pair
- At most one report per member/post pair

Design Challenges

How to differentiate the app from other job search web apps such as Glassdoor or Wall Street Oasis?

Potential Solutions:

- *Restrict the access to the app to only MIT community members* – this would prevent hiring managers, recruiters or outside unreliable source from posting biased and false reviews. Above websites are usually source of suspect since anyone can create an account without anything but an e-mail address. But our app would require true identity, thus insuring a more reliable and credible source and honest comments from our community. While the above websites might have ulterior revenue motives and act accordingly by removing bad reviews, our web's motive would be for the benefit and welfare of the MIT community.

- *Let companies have a limited access to the site.* – Let the companies have limited access for creating and updating their own profile and reporting biased posts. Allowing this could complicate the integrity of the web app if the companies have too much access into the system.

Should we allow users post anonymously or require true identity?

Potential Solutions:

- *Require true identity* – On most online web apps related to job search, people usually tend to post anonymously because of a fear of retaliation

that would come down of the particular company if the true author gets known. Similarly, though our access is limited, we have an immensely big community outside MIT as well. Thus, while requiring true identity would insure that the posts would have a real author and be reliable and honest, people might refrain from exposing themselves.

- *Allow anonymity of the users* – Allowing anonymity of the users would make people feel more secure and offer privacy. Furthermore, it would make using the app very convenient and would thereby, promote activity. Nevertheless, when people start using anonymity, points made in the post could be less effective and less personable.

How to improve the effectiveness and reliability of the app? This could be problematic if people start communicating anonymously. If people start posting anonymously, how do we insure that the posts are of reliable source?

- *Restrict each person to one account* – this would restrict people from creating many accounts and disrupting equality. It would make sure that each person likes or dislikes a particular post at most once. Posts would be more personal.

- *User can report a post if he/she thinks that the post is not valid* - We believe in the integrity of our MIT community and hope that people would not intentionally post totally biased or fallacious information. Nevertheless, if people lose their confidential information and such a situation occurs, other users could report particular post and request it to be deleted. If a post gets reported multiple times, admin will track the post and delete it if necessary.

- *Link a user's social network accounts to the website* – this would enrich the personal information of the users who would like to build a more comprehensive profile and networking and expand engagement opportunities. It would promote reliability of the users and make TIM in a SUIT more valuable and trustworthy source. Furthermore, it would build more incentives for people to engage with the site.

Security Model

The security requirements are that:
- Only members of MIT community: students, faculty members, staffs or affiliates can access the web application and read existing posts/reviews or write a new post anonymously or using their membership username.

Potential risks include:
- The members could lose their confidential information to outside source and the site could be prone to biased or prejudiced comments.

- Hackers could access the site and post comments using members' identity or delete existing posts.

Threat model
- Assume that users are not likely to expose their confidential information such as Kerberos or certificate, thus little risk of false identity.

Mitigations
- Prevent alterations of existing comment, or only with the original author approval or upon receipt of multiple deletion reports.
- Encourage communication between users as a means of informal authentication.