

Prithvi Bellamkonda

IS-340

Final Paper

May 10, 2024

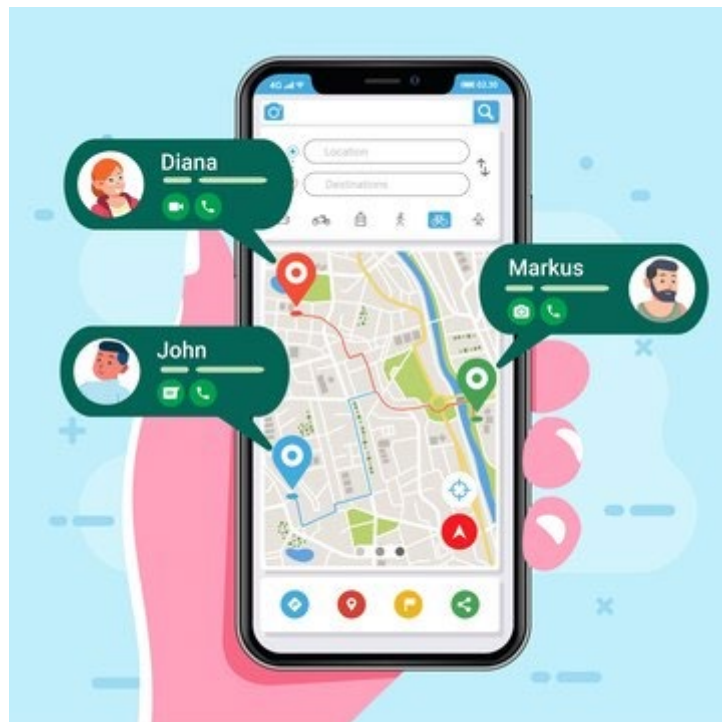
UIUC Connect



Have you ever wondered, if you are a new student at university, eager to explore campus life and make new friends? But as you navigate the bustling campus, you realize that building meaningful connections isn't as easy as it seems. Many students, especially freshmen and those from out-of-state or international backgrounds, struggle to find their place in the university community. Even though university life can be really exciting and life-changing, it also can feel too much, especially for new students on a big campus like UIUC. Also, it is hard for freshmen and those who are new to the area or country to make friends and feel like they don't belong. Research shows that many students struggle with feeling alone, experiencing cultural shock and not being sure of themselves as they are trying to fit in at university.



To help this, we introduce our new app called “UIUC Connect”. This app is specifically designed for students at the University of Illinois at Urbana-Champaign. With the help of this app, we want students to have the opportunity to know others on the campus without any possible discomfort. Along with it we also want them to explore places and be part of the campus community.



So, through this essay, I will share the process behind building the app. Example of why I chose to build this app. Then I will go in-depth about the user's pain points and discuss why and how this app can help students. Followed by that I will discuss the technical aspect of how the app is being made. For example, I will discuss how we planned this project, what factors we considered before working on the app, how we carry forward the inputs, and what level of security or trust it offers its users. Lastly, it mainly focuses on how it can help students feel like they belong and have a community at school.



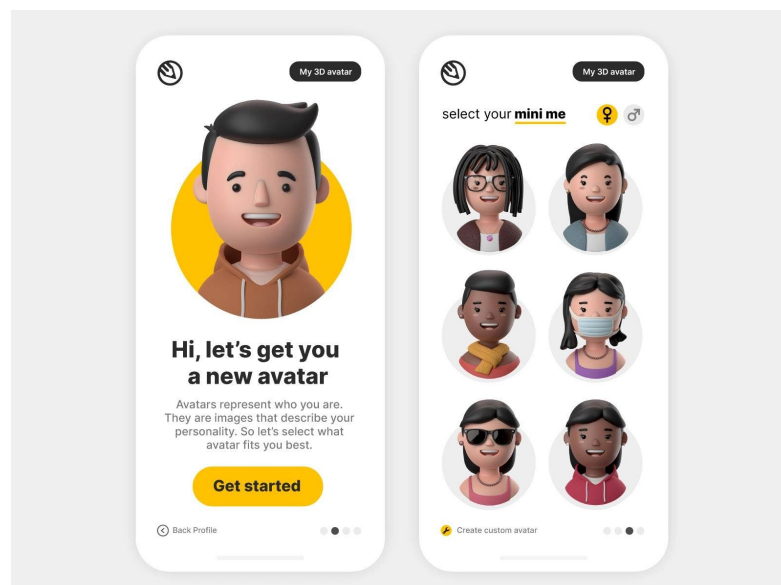
Since there are many apps out there someone might ask why they should choose this app over other apps for getting to know each other. So, the reason that makes this app unique is its focus on specific user groups, in this case, it is UIUC students.



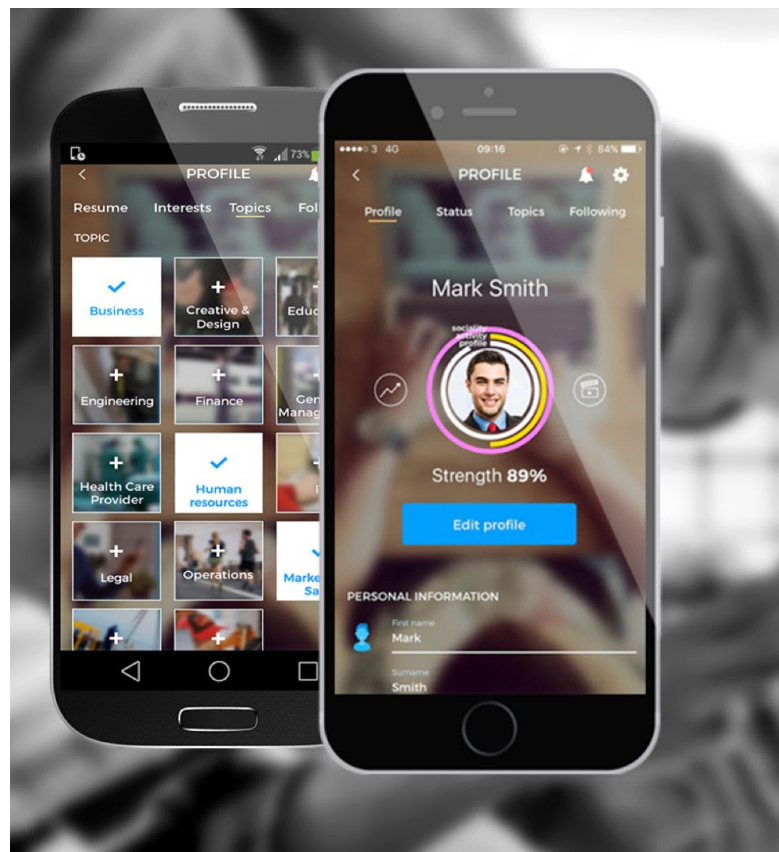
We are focusing on a specific problem. That is, designing an app specifically for students who feel excluded or are unable to get involved at university. This could be due to a change in environment, cultural shock, lack of friends, and insecurity among students which ultimately lead to not having a positive university experience.



We notice that many are aware of this situation, i.e., students struggling on campus to make friends. But no one seems to acknowledge and work towards it. Also, some on-campus clubs are trying to overcome this issue by creating an inclusive community. But at the same time, they are unknowingly creating an exclusive culture by setting up limitations if the club has grown popular or in demand, by setting up interviews or selection rounds for new people to be included in the club. Other than that, students have been observed to form into groups based on their country of origin as they find them more inclusive and accepting, leading to many divisions among students which is not good practice when one has the opportunity to study at a diverse university.



So, by creating UIUC Connect we are trying to address all these issues. We start by creating a credible application for university students, that will help them network, interact, and explore people of their interests. This aims to create an inclusive community. Next, students will have memorable and healthy lifestyles on campus helping them overcome homesickness and loneliness. Ultimately through this app we offer, students the opportunity to have no-barrier communication with other students. This can encourage students to find similar people of their interests or any interesting personalities that they never thought they would come across, which could also lead the way to some long-lasting friendships as well.

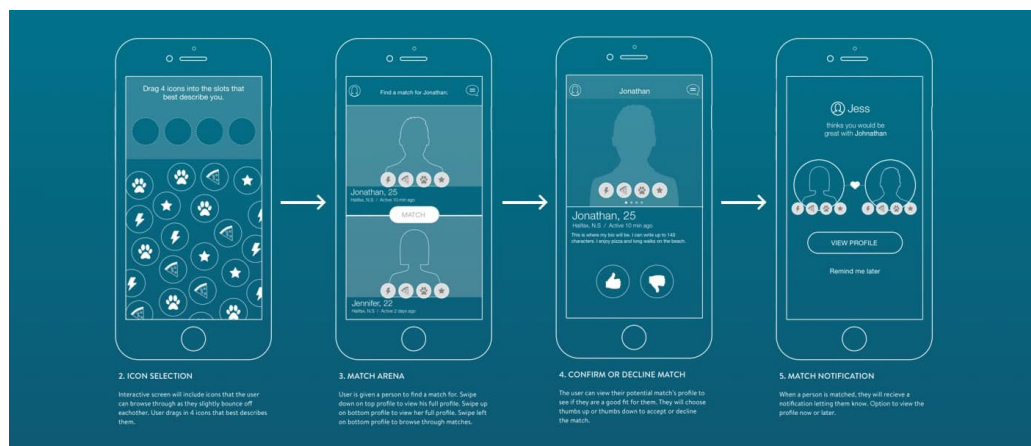


Coming to user profiles, our user focus is mostly on all university students. So, our app will help the students know who is Undergrad (freshmen, sophomores, juniors, seniors), Masters, or PhD students. It will help new and existing students plan and make their university experience better as they use this app. Through this app, I also want the students to have an idea about what they can find on campus. It could be for recreational purposes,

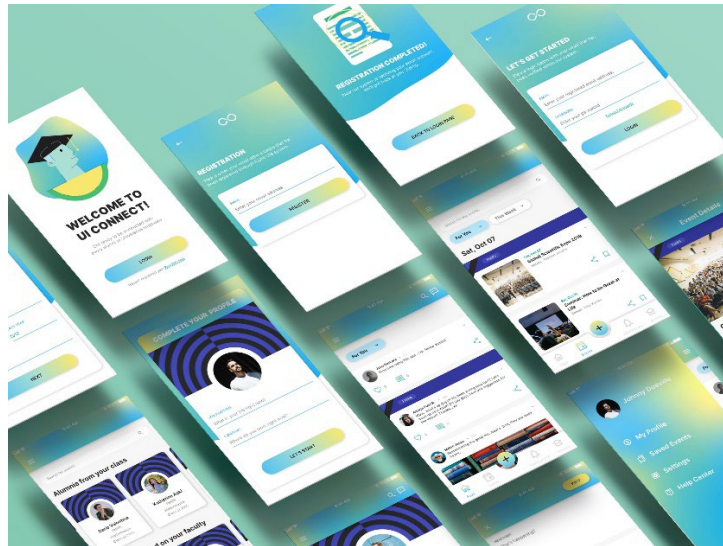
finding good restaurants, updates about weekly campus events (like festival celebrations and college sports), invites to Frat parties, and lots more. Being a new student at the university can make it hard to get to know people and get to know things around them. So, with the help of this app, we can help the students feel included and united making a strong community.

To run this project smoothly and efficiently, we begin the project by following the project development lifecycle approach. Firstly, we start with Project Planning, here we discuss what features the app should have, such as event listings, student group directories, and campus maps. They set goals for the app's launch and decide on a timeline for development. Secondly, we enter the design phase. Here, we create mockups and wireframes to visualize how the app will look and function. This could be the layout of the home screen, the placement of buttons, and the color scheme to ensure a user-friendly experience. Thirdly, we have the development phase. This is the phase where we might hit the rocks as not all designs can be put to life. Once the designs are approved, we then focus on writing the code for features like event calendars, group chat functionality, and a searchable campus directory. Based on that we would use APIs to integrate for accessing campus data and testing different functionalities as they go. Fourthly, once the app is developed, the team begins testing it to check for bugs and glitches and perform usability tests with students to gather feedback to understand user experience. Next based on testing feedback, the developer team will make further enhancements to the UIUC Connect app. They will do this by making sure to eliminate any bugs, glitches, and user interface if the interface is not flexible for users (students). Lastly, after the re-development process, the team actively seeks feedback from students using beta testing groups and surveys. They incorporate this feedback into the app's iterative design process, making changes to address user concerns and preferences. This continuous feedback loop ensures that UIUC Connect meets the needs of its users and provides a valuable resource for the university community.

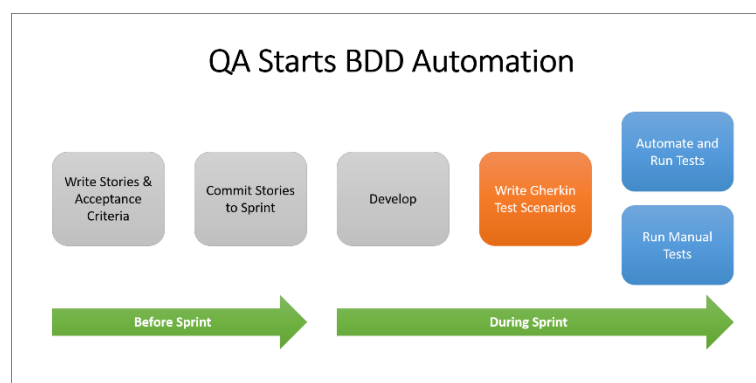
Coming to the project planning, we plan to begin this project by performing user research and using data analysis tools. By performing these experiments, we will be able to understand what the user group (students at UIUC) wants and their requirements. We plan to collect data from students with their consent by conducting interviews and providing them with questionnaires. Then based on that we plan to record all the inputs over a few successive months and observe the trend. We plan to observe the data trends by using data visualization tools. This will help us know how we should design and develop our application such that it meets the end user goals.



Once all planning is complete, we ask our designers to start building their design prototypes. This will be an iterative process. This is the time when designers will create numerous designs based on the user requirements provided to them in the planning phase. Based on review and feedback by the stakeholders and developers, designers will be given feedback. After numerous iterations of design prototypes, the final designs will be shared with our app developers. From there on designs will come to life.



Once the initial phase of design screens is ready, based on the stakeholder's review they will be sent to developers for app development. The developer will first start by building the user interface of the app based on the design provided by the designer. Then later they will design the backend functionality. Ex: What should happen when a user searches for interest-based matches through the app when they have listed their hobbies and interests? So here the backend developer will make sure, the inputs provided by the user are efficiently being analyzed or not. They will also make sure how the data is being stored, etc. In our app case, we will be using cloud services. This will help provide better scalability and security to user's data.



Once the initial part or functionality of the app is built, we will have our testers test the app. Here we will make sure that our testers are covering all use-case scenarios. They will

be using the BDD (Behavioral Driven Development) framework which helps them write their test cases in a certain way that is easily readable and understandable by stakeholders with no technical background. This acts as a good documentation technique as well, which can be used for later automation processes. So by maintaining documentation, we can have transparency between all stakeholders, designers, and developers. This will help us know what's currently happening or what has already happened earlier. This will help minimize any chance of acquiring any technical debt. Lastly, as testers test the app manually in the initial iterations of testing, they will parallelly also work on having automation scripts built. Because once the whole app is built, it would be impossible for them to test the whole application end-to-end. So having automation scripts written over time will help test the application effectively at the end.

After multiple iterations of development and testing, the app will go to the production phase. This is the phase where the app will go live to the users and real-time feedback will be achieved. Based on the production phase session, the team working on the app will get feedback about what went well and what could be done better next time. So, this process happens every time a major feature is added to the app and made available to the public.

Coming to essential features, our app comes equipped with essential features tailored to meet the unique needs of UIUC students. Some of the essential features are as follows. First, we have barrier-free communication, It aims to make communication simple by allowing both parties to feel safe as both are verified users and go to the same university. Second, we have an interest-based matching feature, that is our app uses efficient data analysis techniques that help provide accurate results. Third, we have profile customization. It provides more flexibility to users allowing them to modify their profile. Fourth, we have event planning. It aims to help students get quick updates on what is happening across the campus.

Coming to the scalability and security aspect of the app, this app will use AWS for using servers. We plan to use AWS servers because they provide cloud hosting services where the app's data and files can be stored securely on their servers. It also allows the app to scale its server resources up or down based on demand. So if the app suddenly becomes very popular, it will have increased traffic. In general case, if the app's server is unable to hold the traffic it will crash. But in the case of AWS servers, as the servers are scalable, it will help prevent any crash. Apart from that, we also plan to use it for content delivery, database management, and study analytics. AWS uses content delivery network (CDN) services, which help deliver content like images and videos to users in a faster manner. Coming to databases, as we will be working with lots of users, it will help us efficiently manage user's data and activity logs. Last but not least, we want to use AWS analytics, either Amazon Kinesis or Redshift, which will help our app gather better insights from user interactions and help improve existing features.

Coming to technical debt management, we plan to avoid approaches like rapid development, limited testing, over-scoping projects, and minimal data security options as they can accrue us of heavy technical debt in the long run. So instead, we plan to overcome these by prioritizing certain core features by spending more time refining them than adding additional components. Next, we focus on iterative development. This will help us make sure that we need to add features based on user feedback rather than dumping all features at once. As discussed previously, we want to automate our testing processes as manual testing can be very time-consuming. By automating we to make sure we don't miss testing any key functionalities. Next, most importantly we will follow collaborative decision-making, this will make the project planning simple and will help us avoid over-scoping. Last but not least, we will put heavy emphasis on technical documentation as we want to make sure everything is documented to avoid loss of information.

To sum it all up, UIUC Connect can be viewed as a guide tool that offers inclusivity and community-building space for students to involve themselves in university life. We recognize the challenges faced by many students, especially newcomers coming to campus with huge meaningful expectations. Our app's main focus is to bridge gaps by promoting a sense of belonging between students. We also focus on offering solutions to common hurdles like feeling excluded or disconnected by introducing features like barrier-free communication, interest-based matching, profile customization, and event planning. Coming to development, our app uses a user-centric approach and utilizes AWS for scalability and security. Ultimately by providing our users with all these features we make sure they have a memorable university experience that helps them engage, interact, and explore campus life in a safe and welcoming environment.

