

# Taleem AI



**Group Number: 10**

**Group Name: 10tative**

**Group Representative: Syeda Mah Noor Asad**

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**Project Phase: Phase 2 - Design**

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## Contribution of Individuals

Name **Malak Hasan Khan**

1. Refined entire findings
2. Worked on Brainstorming and discussed ideas
3. Worked on the website alternative (proposed why we should use it)
4. Discussed various design alternative
5. Made the Lofi prototype flow video
6. Worked on lofi prototype screens.
7. Worked on the testing prototype section
8. Created 1 storyboard
9. Worked in the sketching part
10. Worked as a machine during testing. Sometimes as a greeter.
11. Worked on Community in Lofi Process and Final Design
12. Wrote the Lofi testing results



**Name** Muhammad Raahim Nadeem

1. Actively participated in the brainstorming sessions
2. Wrote the brainstorming sections
3. Made one storyboard and multiple sketches
4. Worked on the design alternative of WhatsApp Bot and Instructor Workshops as a solution
5. Made the screens for low-fi prototype and participated in the testing
6. Worked on the low-fidelity prototype flow
7. Contributed in determining the final design and aesthetic
8. Made the screens for the high fidelity
9. Worked on the Styleguide document
10. Contributed to the Results of the Prototype Testing section
11. Wrote the Scenarios
12. Worked on the homepage, AI chat, Login, and Registration sections of the final design and low-fidelity design.



**Name** Muhammad Zain Ul Abidin

1. Redefined the findings for the interviews done
2. Actively participated in the brainstorming sessions
3. Made one storyboard and multiple sketches
4. Brainstormed and worked on FigJam Board
5. Worked on the design alternative of the Game as a solution
6. Made the screens for low-fi prototype and participated in the testing
7. Worked on the ideation of the scholarship section of the solution
8. Wrote the Hifi flow, a part of final design, and low-fi flow



**Name** Muhammad Hasnain Mubeen

1. Worked on improved findings
2. Active Participation in brainstorming sessions
3. Made one storyboard and different sketches
4. Brainstormed and worked on FigJam Board
5. Proposed an animated Youtube channel amongst other possible design alternatives
6. Gave ideas about different lofi prototype screens possibilities and participated in two of the testing sessions.
7. Worked on App Support / Deadline Tracker / Deadline Tracker notification feature in both lofi and final design



8. Designed a deadline tracker sample notification screen  
in figma
9. Refined the final users selection/figjam brainstorming  
section

**Name** Syeda Mah Noor Asad

1. Brainstorming
2. Literature review
3. Worked on App in Design Alternatives
4. Storyboard
5. Sketches
6. University Search Tool in Final Design
7. Designed University + Community Low-Fi Screens
8. Testing of the prototypes
9. Formatting the document



## Honor Code:

As participants in the group project, we recognise the importance of integrity, originality, and ethical conduct in academic and creative pursuits. This honor code serves as a commitment to uphold these values throughout the project.

1. **Respect for Originality:** We will endeavor to create original work for all submissions related to the project. When inspiration is drawn from existing sources, appropriate recognition and citation will be given.
2. **Acknowledgment of External Assistance:** If we seek and receive help from external sources, including online resources, texts, experts, or artificial intelligence tools like ChatGPT, we will transparently acknowledge this assistance in our submissions.
3. **Collaborative Integrity:** As this project involves group work, we commit to contributing fairly and honestly to our team's efforts. We will openly communicate our ideas, respect the ideas of others, and ensure that all members' contributions are duly recognized in the contribution statement. In the case of unfair or unequal contributions by member(s), we will highlight this in the contribution statement section.
4. **Adherence to Guidelines:** We will adhere to all the guidelines and requirements set forth for the project, understanding that these are in place to ensure a fair and equitable experience for all participants.
5. **Consequences for Non-Compliance:**
  1. **First Violation:** Failure to adhere to any part of this honor code will result in an automatic failure for the project phase in which the violation occurred.
  2. **Repeat Violation:** A second violation will result in a failure for the entire project and a referral to the disciplinary committee for further action.

6. **Digital Signature Commitment:** By digitally signing this document, we individually affirm our commitment to these principles. We understand that failure to adhere to this honor code may result in consequences as determined by the teaching team and the university.

**Digital Signature:**

By typing our names below, we digitally sign and commit to the Honor Code of this course/project.

- **Member 1:** Muhammad Hasnain Mubeen (24-03-24)
- **Member 2:** Muhammad Zain Ul Abidin 24-03-2024
- **Member 3:** Muhammad Raahim Nadeem 24-03-2024
- **Member 4:** Malak Hasan Khan 24-03-24
- **Member 5:** Syeda Mah Noor Asad 24-03-2024

<Chat GPT 4.0 help was taken while generating the structure of above honour code.>

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## 1. Improved Findings

Our research has unveiled significant insights into the educational and counselling landscape, categorised into major and minor findings. The major findings shed light on foundational elements, highlighting critical gaps and challenges that influence students' educational journeys and career decisions. On the other hand, minor findings delve into nuanced areas, such as societal pressures and financial constraints, that also impact student experiences, albeit in a more subtle manner.

### 1. Role of Educational Institutions

#### a. Lack of Official Counsellors

Almost all of our participants emphasised the lack of counselling services available at the educational institutions. With no one to guide the students, students had no option but to follow either what their peers were saying or what their elders were saying. Participant 10C noted that throughout their life, they were told what to do, what college to attend, and how to join. However, as the pivotal moment came for college selection after their intermediate, the guidance was either reduced to hums of pre-engineering or pre-medical. Beyond that, there was no guidance that could be offered to them.

Such a lack of guidance can have a detrimental effect on the educational excellence of students. As participant 10D noted that

*“I have been a top-performing student throughout my academic career. My parents have lots of expectations from me. But now I am confused. What if I go into a career where my potential would not be realised? What will I do then?”*

This raises an interesting point. College counselling is not about how to gain admission into any college. The purpose of counselling is to help people identify their strengths and suggest a career so that they continue to excel in the field chosen.

Participant 10I narrated the following

*"I had no clue on where I should apply. A couple of seniors told me to apply to GCU. Once I completed the semester at GCU, I was not happy. The education was not upto standard, and expectations were completely shattered. Had there been a platform where I could research on how life in the actual institution is, which is something that is usually missing from College websites, I could make a more informed decision about where I ought to go"*

10I was a student of an elite institution in Kpk. The lack of counselling services is not limited to impoverished areas but rather it is a more prevalent ideological problem that stems from how the educational system and the societal structures are in place.

From the above, we can see the important role college counselors can play in helping people get a better sense of what colleges they should apply to.

#### **b. Educator-Student Relationship**

60% of the respondents pointed out their teachers' impact on their college choices. Many participants pointed out that in college, the main focus of the teachers is marked in the intermediate or A-level exams. Beyond that, the teachers don't pay much focus regardless of how capable the teachers themselves are. Teachers basically just stuck to the curriculum without focusing on the guidance essential for college admissions.

*"We did not know about anything. We just trusted our teachers and whatever they said. They told us that getting marks in the exam should be our priority. We trusted them and didn't seek any guidance ourselves. But after our exams, we found ourselves to be lost, and the teachers weren't there to help us."*

Participant 10K noted. Perhaps, the issue lies in the incentives the teachers, as well as the educational institutions, have. As such, the teachers themselves do not benefit if their students get into reputed colleges. They are under pressure from management to complete the curriculum and get a position in the intermediate/A level exams that would help in the marketing of that particular institution. However, we believe that through the overhaul of this fundamental relationship, many students can get access to guidance inadequately because of a lack of counselors.

## **2. Impact of Internet accessibility**

### **a. Was access to internet devices a problem?**

When asked about the devices, the students used to access the internet. An overwhelming majority of the participants noted that they used mobile phones to access the internet. However, the ownership of mobile phones was further segmented into two categories. Some participants had their own smartphone, while others relied on a shared device. Interestingly 20% of the participants, although owned a smartphone, did not have access to it owing to restrictions by their boarding school.

For people who owned a smartphone, their fundamental issue was the utilization of the device for the purpose of researching college admissions. For students who relied on a shared device such as 10F, who had to share the smartphone with their family.

*“Jub app smartphone share kar rhe hothe hou, apke pas koi control nahi hotha ke apke apps ya data koi remove na kardai. Kabhi kabhaar phone mai charge nahi hotha. Kabhi meri choti behn ke sath hotha. Kabhi space nahi hotha. Kabhi koi call kar rha hotha tha us par. Is tharah situaitons mai buht mushkil hojathi hai ke ap phone ko research keliye isthemal karain. Upar se ghar ke restrictions hothe hain, ke phone na isthemal karo, parhayi karo. Is time na isthemal karou waghera”*

#### Translation

*“When you share a smartphone, you have no control over the apps and data. Sometimes there is no charge in the phone; sometimes, it is out of space. Sometimes someone is using it for a call. It gets difficult in these types of situations to use the phone for research. Above that, there are restrictions (on the use of smartphones) in the home. Such as focusing on studying rather than using the phone. Or not using it at a certain time etc”*

The incident narrated by 10F is not isolated. Perhaps, there is a stigma attached to the use of smartphones. In elders' minds, it cannot be used for academic purposes but rather amounts to a substantial time waste. It, therefore, becomes a social issue rather than an issue with the ownership of the device in such cases. As 10G highlighted, “I was not allowed to use my smartphone during the exam days and was told to focus on my studies. However, because of that I missed two university admission deadlines”

#### b. Insufficiency of Internet access

Another significant issue reported by many participants was the subpar internet availability and speeds. Regardless of the device ownership, the internet's insufficiency hindered the participant's ability to research universities. In most cases, the speeds

were insufficient to play videos as 10J complained, “*Internet pe website nahi load ho the. Video nahi dekh sakte slow speeds ki wajah se. Aur jo videos available hothi hain, woh relevant nahi hothin*”

Couple the slow internet access with restrictions on the use of smartphones, and the effectiveness of smartphones systematically vanishes. However, it is prudent to point out that slow speeds were reported over Wi-Fi. 70% of students mentioned that they relied on mobile data to surf the web owing to dismal speeds over the wifi.

### **c. Third Level of Digital Divide**

Another important problem that we noted was that even though people had a device and a stable internet connection, neither of them contributed significantly to better college research. When asked about why, 10D reported “Even if we have the internet, the amount of information available is so enormous that we are immediately overwhelmed. We do not know where to start from and that paralyzes our ability to research colleges. We accept the choices that we have”

This points to a third level of digital divide, which means there is a clear distinction in the ability to search the internet for information regardless of availability and access to the internet. For people like 10D, a more focused approach is required where they receive constant guidance in their search to the point that they become comfortable with using the internet.

## **3. Role of Peer and Social Structures**

### **a. Alumni Networks and Social Media**

A common theme that emerged across the interviews was that most applicants relied on their seniors for guidance, people who have gone through the entire process. Participants recognized the interactions with their seniors as more useful than the prospectus or university website. Personal experiences from the students engaging with peers at their target universities helped demystify the application process and provided the students with much more realistic views of university life rather than the impression marketing material tends to create. Participant 10S noted

*“When I did not get any college admissions in medical, I took a gap year. I always knew I didn’t like medicine but was unaware of any other choices I might have because, according to the perception society has created, we often tend to think that other careers don’t have a scope. During the gap year, I got in touch with my seniors who were in different universities and they provided me guidance regarding courses and the college life itself”*

However, what about people who do not have access to such alumni networks? They remain at a disadvantage. They do not have access to formal counselling services, nor are they able to conduct their own research. 10F noted her frustration, “What do we do if do not have any seniors to help us nor our schools are helpful”

#### **b. What about First-Generation Students**

In our study, a small portion of the participants were first-generation students. First Generation students are those who are the first in their immediate family to attend university. In our small sample of first-generation students, we noted that first-generation students were the least informed about college choices. They had no one to guide them in their family, and the channel of formal counselling are not ideal.

*"We had no one to guide us. We were left on our own. Jo dil mai aya ya jis ka ksi ne bataya. Chacha ne kaha army mai jau but I did not want to. But apart from medical and engineering, there were no options," noted 10C.*

#### c. Social and Financial Pressure

Our female participants usually responded that societal expectations and pressures often have a negative affect on their college search. Such students are often subjected to statements from relatives such as "*kiun parh rahi hai*" noted 10E. In lieu of the societal pressures, the parents also pay no heed to providing guidance to such students. In impoverished from which 10E hails, there is a social stigma regarding female education. "*Ladkiyon ko parhna nahi chahiye. Unko ghar ke kaam ane chahiye*". Such statements are rather common in impoverished regions.

Second contributing factor leading to discouragement in the college admission process is financial pressures. College admissions usually have very high registration fees. Even if you get in, there is a lack of scholarships in general. Even if there are scholarships, most people do not know about it apart from the famous ones by LUMS and IBA. This eventually leads to a feeling of hopelessness in potential applicants.

*"Jo underprivileged areas se log hein na...unko aik kism ka fear hota hai na... ke aik hi university mein apply krna hai... kyunke aajkal university ki fees bhi high hein na. Mere kuch doston ne das das 7-8 universities mein apply kia hua tha. LUMS IBA HABIB main isliye apply kya kunke ye scholarships offer kar rhee thee... baqi mein nhi kia kyunke wahan scholarships thee hi nhi"* noted 10E

## 4. Gaps in the Admission Process

Furthermore, there was a clear knowledge gap in how to fill the university applications and all the respondents revealed that they could not find any guiding material on how the applications should be filled. “There is no clarity in the university process” noted 10B.

*“When I was applying to LUMS, I had no idea what a personal statement was and how to write it. I asked my seniors for help but the help I received was also limited. Also, different colleges had different formats of applications and it was overall very confusing”* noted 10F

Furthermore, some participants reported that they were surprised when they found out that the LCAT(LUMS Admission Test) section had maths in it. For students in the Pre-Medical stream, they had no means to prepare for the test. *“jin universities mein apply kr rha tha unmein kisi kism ka friend ya counsellor mere saath touch mein nhi thaa that's why Jaisi tayari ki thee waisaa bilkul LCAT nhi aaya tha,”* frowned 10A. This suggests a gap between the students' knowledge and expectations from them.

## 2. Problem statement

In Pakistan, only 26% of students make their way to higher education and “out of those who pursue their higher learning, a large number of students make wrong choices.” A significant contributing factor to this dilemma is the glaringly inequitable access to university counselling services; many schools, barring the posh institutions, often lack dedicated counselling resources. According to Muhammad Murtaza Noor, Director of Community Support Program Pakistan, a staggering “60 percent [of the schools] are public schools and unfortunately none of them are even aware of the term ‘career counselling’.” Unfortunately, little has been done to rectify this issue. Consequently, students face challenges in understanding and navigating the complex university application process.

During our research we were able to identify various factors that resulted in people being unable to access career or college counselling. Chief among them were the lack of any counselling facilities at their institutions, lack of finances to afford a private counsellor, lack of access to stable internet connection, social pressures that prevented female students from pursuing education, lack of access to devices to access the internet and inability to make sense of the deluge of information that is available on the internet.

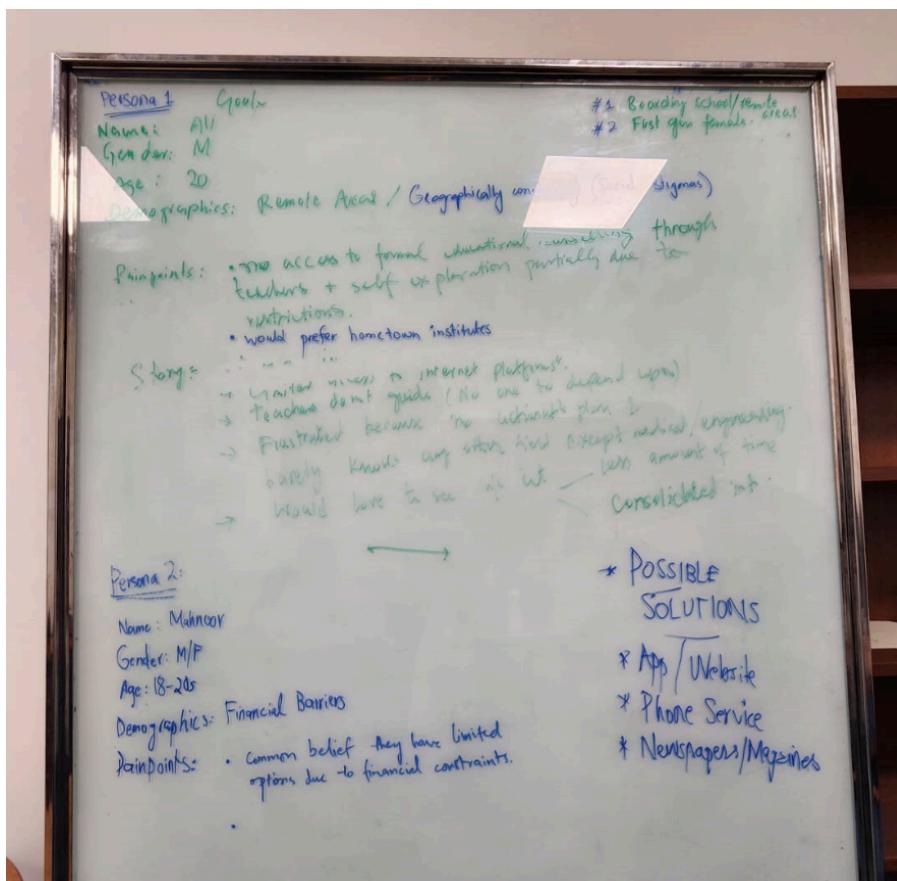
However, when we categorized the results while forming our target audience in the form of a persona, we realised there merely exists two groups. One who have limited access to the internet due to various reasons and others who have access to a device and a stable internet connection. Upon consideration, we realised that the majority of our target audience falls into the second category. Therefore, our final target audience are students who have a stable access to the internet however, they are unable to navigate the information available.

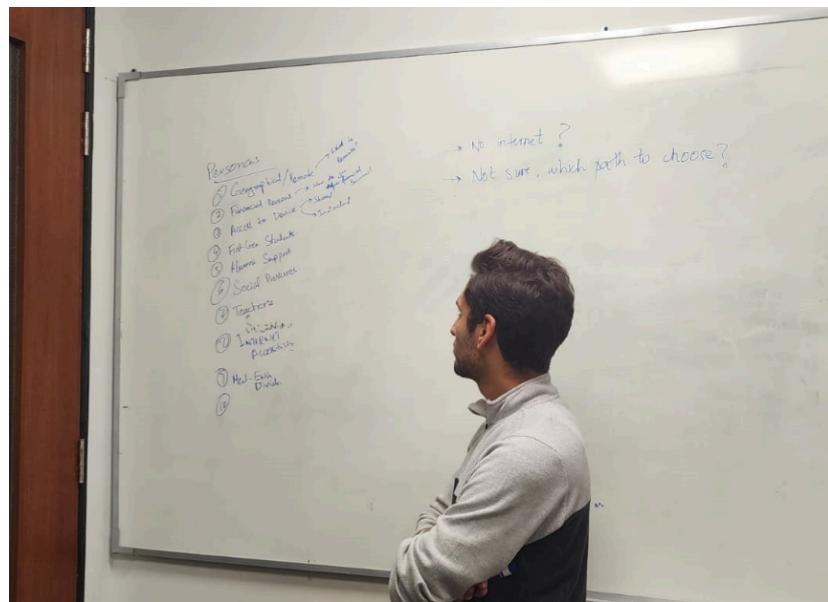
Therefore, our final problem statement is how can we make the university application and exploration process easier for students who have access to a device and a stable internet connection? Our sub research area would be to explore the viability and use of AI in the implementation of such a product.

### 3. Brainstorming

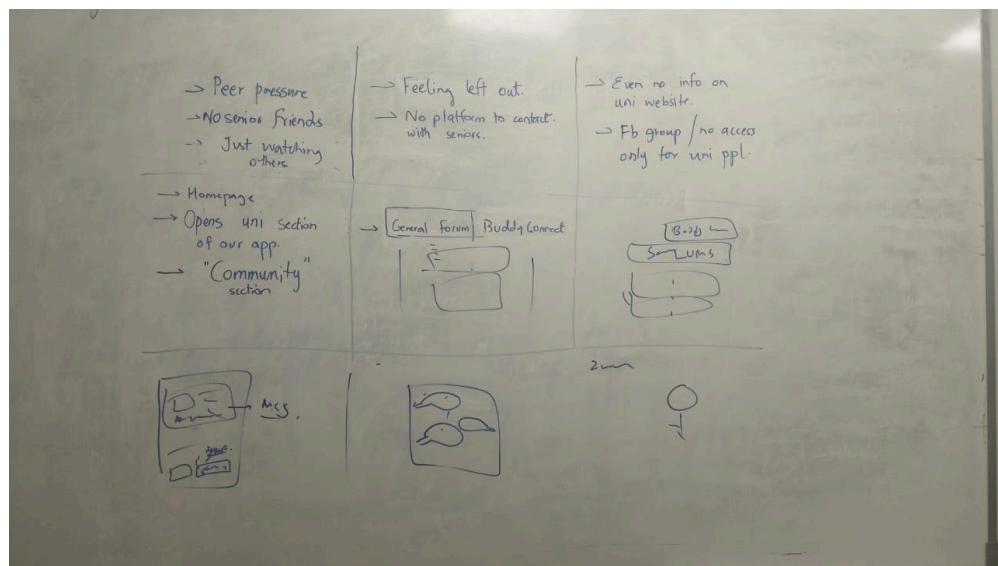
Our brainstorming session was conducted as a group, where we met on alternative days and reviewed our findings, needs, and desires from the initial phase to generate ideas. We explored various approaches and technologies that could help us realize these functionalities.

During our brainstorming sessions, we adopted a strategic approach by crafting different **personas** to gain a comprehensive understanding of the diverse user base that our product would cater to. This process helped us delve deeper into the specific needs, preferences, and pain points of each user group in our research and gain valuable insights into the multi-faceted nature of the educational landscape within Pakistan.



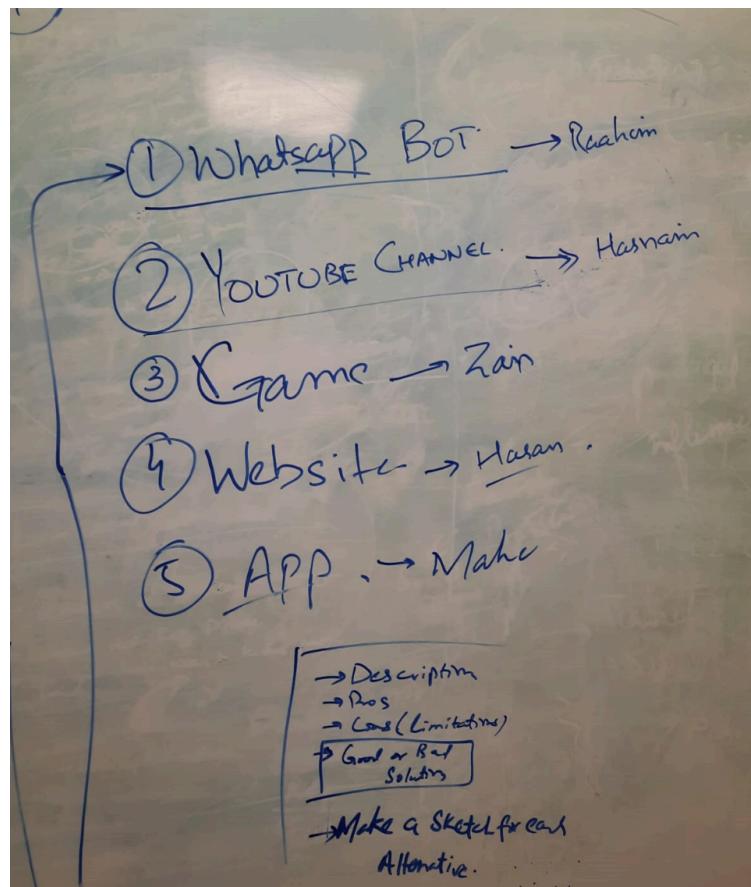


First, we identified the essential features that must be part of our design. These included an assistant to address general queries of the students, a feature to monitor and review the deadlines and requirements of the universities that the student is interested in applying to, a comprehensive list of scholarships and funding options to assist underprivileged students in applying to universities under financial and/or other aid programs, and a community forum mode which can allow the students to seek advice from the alumnus of their prospective universities.



After identifying the key features and functionalities that the design required, we delved into different design approaches to realise our vision. The central question we aimed to address was: How can we provide a comprehensive one-stop solution for overcoming admissions-related challenges To achieve this, we brainstormed different ideas to be integrated into our design. These included

- WhatsApp Bot for immediate information
- Mobile game for an interactive exchange of information
- YouTube channel for informative content
- Website that is accessible via smart devices
- Mobile application that consolidates all information into a single, accessible location.



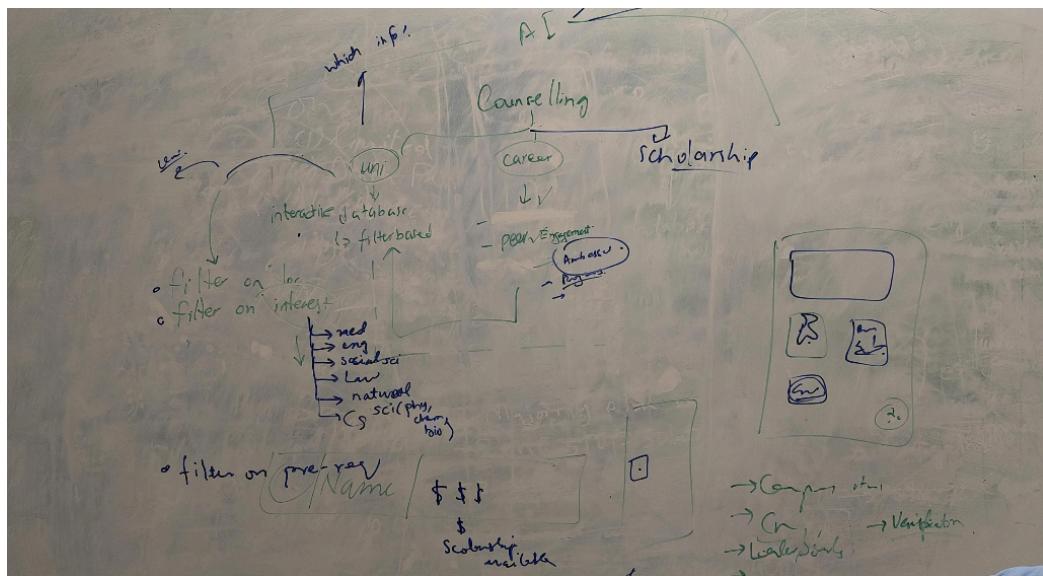
In our meetings, we also tried to shift our focus purely from a student-centric design solution to try and integrate an approach that may aim to facilitate the applicants by empowering their respective instructors with the resources they need for effective learning. This involved us brainstorming in different ways, the most prominent of which was **equipping the instructors with the tools and methodologies via workshops and university sessions**. These workshops would ensure that the instructors are fully versed in the latest career trends as well as the university options available so they could counsel their students.

Another significant conversation that drove our brainstorming sessions was the idea of integrating a mentor/facilitator feature into the product architecture. During our user research, an overwhelming majority of users, when sharing their experiences, informed us how student alumni networks played a large role in helping them attain higher education. So, our brainstorming for this stemmed from our recognition of the vital role that mentors, often university alumni, can play in guiding the applicants through their application journey(s).

To effectively implement a design that facilitates this exchange of students, we proposed introducing a dual user mode: Buddy and Applicant. For the Buddy mode, current university students would be able to leverage their first-hand experience, personal knowledge, and academic insights to assist the applicants in answering any queries that the latter user base may have in regards to the university that the **Buddy** is part of or any general question. Conversely, in the Applicant mode, university applicants would be provided with an intuitive UI for getting access to essential university information, keeping track of the deadlines, and having their queries answered by the Buddies or other applicants.

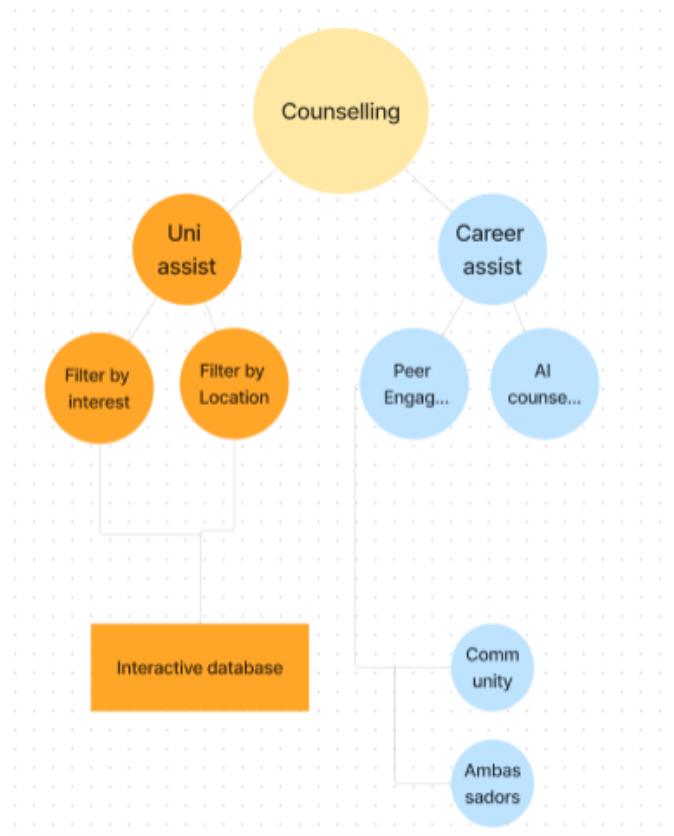
Furthermore, in our interviews, we recognized that **financial barriers** played a significant role in shaping the educational avenues for many users. With the mission to help democratize the educational landscape within the nation and creating a design that reflects our commitment to

fostering inclusivity and equity, we made a joint effort to address this crucial aspect of finance by deciding to incorporate a feature within the design that can contain a comprehensive database of available scholarships, grants, financial assistance programs, and other possible fundings, serving a centralized platform for students to explore and filter based on their preferences and eligibility criteria. By integrating this feature, we hope to ensure that all individuals have access to the opportunities they need to thrive academically.



## 4. Figjam

In our brainstorming session for our counselling app, we made use of Figma Jam Board to delve into various aspects of our TaleemAI app. We tried to explore both the horizontal and vertical features of our app to ensure a comprehensive and user-friendly platform for students seeking guidance in their academic and career pursuits. FigJam can be viewed [here](#).



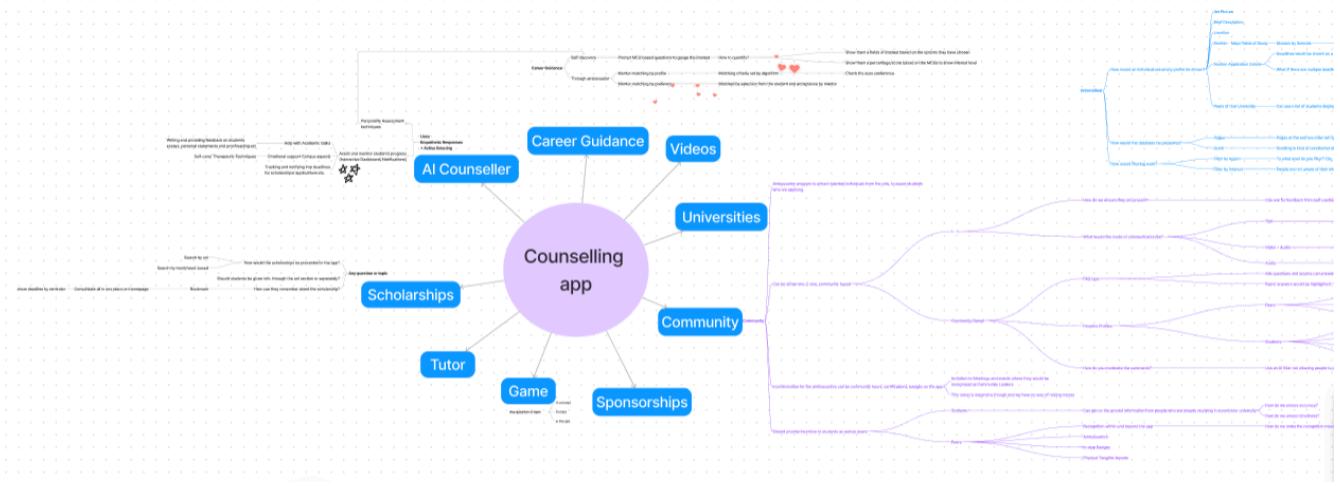
*Fig: Initial map*

**Description:** In our beginning and initial stages, we focused on establishing fundamental functionalities our app will provide considering the main problems we came across in the user research phase. Over here, we mostly focused on horizontal features instead of going in depth of every functionality. In fact, we broke down the working mechanism of our app to two main parts:

- **Uni Assist:** This element will provide essential details about universities and programs to aid students in their decision-making process.
- **Career Assist:** Another major task identified was to offer resources for career exploration, including guidance about career paths based upon student's self-interest or suggesting possible potential future pathways.

We further divided those two major categories into different sub-category in order to simplify the whole process:

- **Filtering Options:** Enabling users to filter by interest and location, ensuring relevance and alignment with their interest/ geographical preferences of choosing university.
- **Peer Engagement:** Facilitating community interactions for sharing experiences and seeking advice among peers.
- **AI Integration:** Implementing AI-driven toolkit for immediate support and guidance.
- **Interactive Database:** Developing a user-friendly database with detailed profiles of universities, career paths, and counselling resources.
- **Community Platform:** Creating a space for users to participate in discussions, ask questions, and share insights.
- **Ambassador Program:** Recruiting university ambassadors to offer firsthand insights and help to students seeking guidance.



*Fig: Detailed Map*

**Description:** Building upon our previous first rough conceptual model, we aimed to make further improvements to it by incorporating more features into it. This time, our aim was to explore even more widely and on a broader scale of functionalities, while also touching upon the possibility of implementing those features in depth. Three of the most important perspectives we explored in detail are “Career Guidance”, “Universities” and “Community”. As per the insights we have received, most of the students required 1-on-1 consultation about the admissions and the university structure.

So, we explored them as two main categories in our solution. We explored whether it is suitable to add a community based solution that answers queries like Reddit or the one that is tailored for one on one communication. In University, we brainstormed ideas about representing and communicating the information about a university, its specific details about the programs and admissions and how a student will be able to connect and communicate with the peers of that university if they want to explore that institution.

We also tried to explore how career guidance can be incorporated either through the channel of an Ambassador from a certain university or through Self Discovery, which helps the students to explore on their own. We found out that AI counselling and Gamification of this option could help the students. Furthermore, we explored some Videos, Tutors, Sponsorships and Games as an option for the counselling. Scholarships was also one of the perspectives we brainstormed because most of the respondents cared about if the certain university offers a scholarship or not and that directly influences their decision to apply for that university. We explored this option as to how we can democratize this, which further doesn't hinder students' decisions about not exploring opportunities. The FigJam session helped us to explore fine grained functionalities and problems that are related to the execution of certain features.

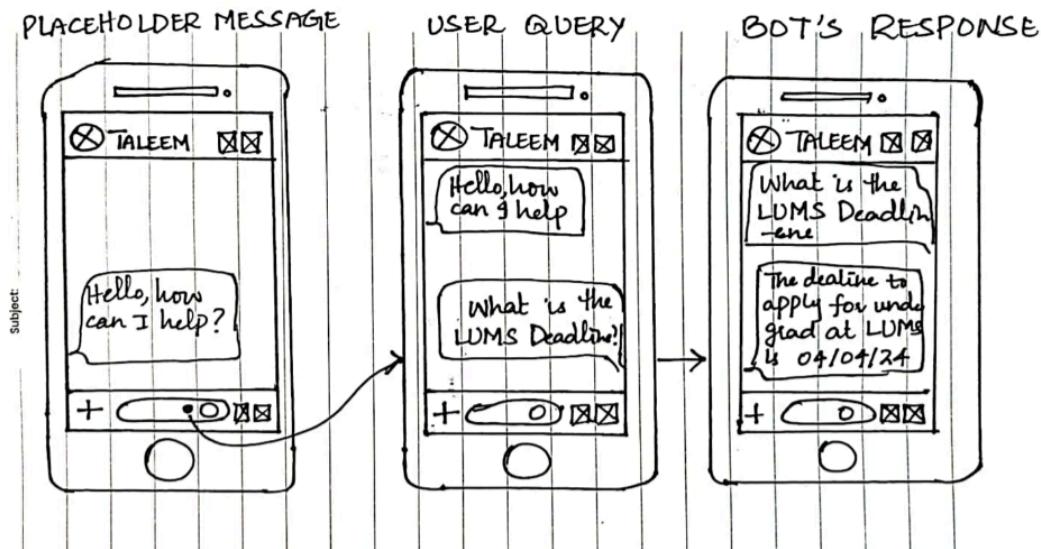
## 5. Design Alternatives

During our brainstorming session, we developed four design alternatives by merging various ideas. Based on our previous phase's findings, we determined that a one-stop solution, intuitive and accessible to individuals with varying levels of tech proficiency, is an effective method for assisting applicants in applying to their desired universities smoothly. We've incorporated these aspects into our design ideas to varying degrees, considering the constraints of each approach. Additionally, there are several commonalities across the designs.

Below is a general overview of the design alternatives:

### WhatsApp Bot

The WhatsApp Bot design utilises a combination of familiar interface with real-time instantaneous communication and accessibility with no need for additional downloads. The bot will be AI-driven, relying on the WhatsApp API to receive user messages and reply, in text, to the aforementioned messages.



## Pros

**Little Learning Curve:** With 52.32 million WhatsApp users across the country, the simple interface of the Bot will be familiar to many, offering a seamless user experience with little to no learning curve for a majority percentage of the user base. The users will be able to locate the Bot in their inbox and upon opening the chat, will be greeted with a friendly welcome message and a suite of available, most common questions. The users then have the option to either choose from the options or type in their own query using their keypads.

**Conversational:** These queries or messages can range from one-line sentences to conversations where they can seek recommendations or ask the bot to perform tasks such as providing relevant contact information for a particular university or the required list of documents, etcetera.

**Instantaneous:** Whether they're exploring potential study programs, looking for financing options, or inquiring about the requirements of every program, the Bot will promptly offer accurate and helpful responses instantaneously.

**Storage Efficient:** Since most mobile phones do have WhatsApp pre-installed, users would not need to download any additional application.

## Cons

**Not User-Friendly:** The UI, while familiar, may not be the most user-friendly experience. University application process can stretch over months and with the UI of WhatsApp chats, the users will be forced to scroll all the way up to find previous queries.

**Does not consolidate deadlines:** While the bot may help in returning specific deadlines in response to queries made for them, the users will still be unable to have all the deadlines visible in one place without manual labour.

**No Alerts:** WhatsApp bots can not initiate conversations on their own and only reply when messaged hence with a WhatsApp bot, it would not be possible to implement a function of routinely reminders and alerts.

## Mobile Game

The concept of a game-based mobile counselling application offers a unique blend of entertainment and educational guidance, utilising multiple-choice questions (MCQs) to engage users in exploring their educational and career interests. This innovative approach aims to make the process of career counselling more interactive and personalised, potentially transforming how students and young adults make crucial decisions about their futures.



## Pros

**Adaptive Learning Through Interaction and Engagement:** The app can adapt to users' responses just like a mechanism from games, hence asking questions and giving options in a way it feels more interesting and suitable based on the educational background of the user. This dynamic interaction would have kept the interest of the user intact and this would be an interactive learning process. Therefore, engagement of a user would lead to learning.

**Personalization According to Selected Options:** The algorithm of the app can analyse the choices that have been made by users to show customised suggestions and recommendations. This high personalization level will assure the relevance and close relation of the advice given, which the user would want and prosper in, thus making it effective and implementable. It will allow a user to view the personalized options based on their preferences.

**Engagement Over Conventional counselling:** Traditional counselling methods, often perceived as non-interactive and overwhelming, can deter individuals from fully engaging in the counselling process. The approach based on games would bring in an element of engagement and competitiveness towards a more reasonable alternative designed to trigger willingness and attention.

## Cons:

**Difficulty in Quantifying Interest:** To measure user interest and their ability, MCQs only can be answered, and this is actually the biggest problem with this app-based game counseling approach. Without such direct and qualitative feedback from the

users, the app is, in fact, to a certain extent dependent on its apperception of the quantitative data, which cannot reflect all the fine nuances in the user's aspirations or goals.

**Balancing Educational Content with Gaming Elements:** The right balance between the two extremes—one that is predominantly educational in nature and the other just being another game—can be a difficult task. The drawback here is when an app becomes too entertaining to the extent that the educational value of the app is lost, or too didactic to the extent that it misses out on the inherent engagement and motivational benefits of gamification.

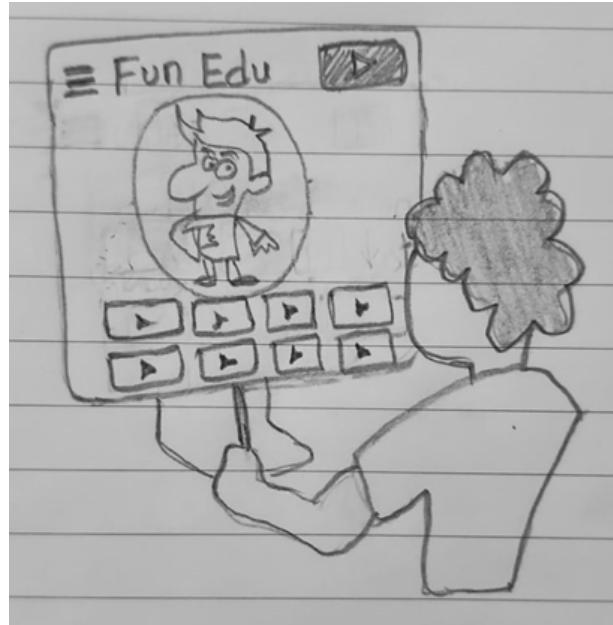
**Providing Only a High-Level Overview:** Given the nature of MCQs and the gamification process, there's a limit to how in-depth the app can go into any given field of study. The users will need to receive comprehensive knowledge in the areas of interest , moreover, that more detailed information needs to be provided for making informed decisions about the educational areas and career paths.

**Challenges with Shared Mobile Devices:** This sets in the issue of privacy and keeping progress private and uninterrupted where several individuals get to use a mobile device or within a same family setting. It may result in reduced usability of the app and hence the goal might not be achieved by a user.

## **YouTube Channel**

One fun way to promote learning and education could be an animated Youtube channel: a personalized career counseling platform for college students featuring cartoons and other

animations. By creating imaginative and creative story plots and scenarios (similar to hand drawn storyboards), several situations could be presented on screen which can give users valuable insights to different universities, their scholarships, programs, and application filling guidelines. In our series of educational videos, we will also address typical issues students face like writing personal statements and managing application deadlines through entertaining and captivating cartoons.



### Pros:

**Animated content:** Our videos make difficult subjects approachable and visually engaging, which keeps viewers interested and motivated to study.

**No Live Presenters needed:** We will have more space to create videos freely since we do not require live presenters when cartoons and animated characters can help our way.

**Accessible Guidance:** A variety of college students from diverse backgrounds may watch our videos and receive helpful advice and insights at their fingertips, hence increased accessibility.

**Unlimited Creativity:** Animation easily creates a great space for creativity in our approach. As the possibilities are endless, we can mimic many real-life situations and characters to give suggestions and ideas on how to solve everyday problems.

### **Cons:**

**Production Time:** A biggest drawback for such a platform would be the time consumption that comes with producing high-quality animations. In fact, since the story plot involves careful planning, writing, and animation work, hence longer production times for videos.

**Audience attention:** Although we have eliminated the need for live presentations, keeping audience attention over longer videos can be difficult with animations, despite their visual attractiveness.

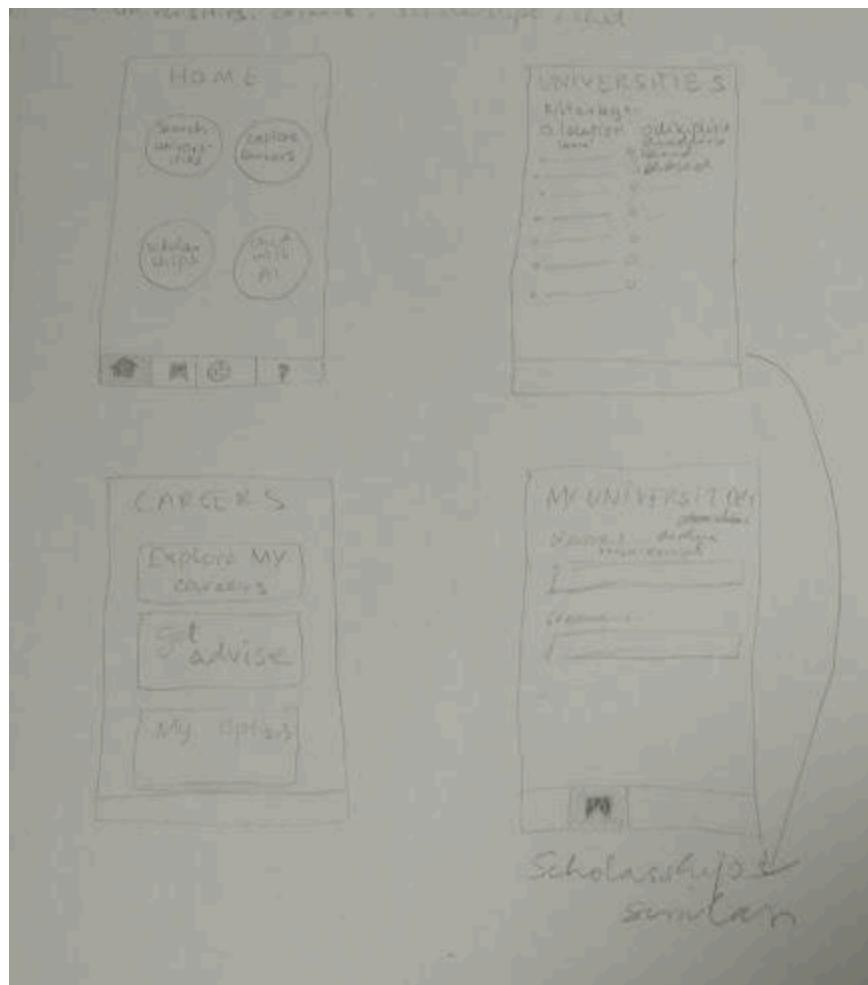
**Limited Personalisation:** Since every student's circumstances are uniquely different, it would be difficult to answer personalised questions in our videos, especially when it's urgent from the student's end.

**Content Navigation:** Another limitation of our video playlist, students may find it time-consuming to search through our channel's expanding library of videos for the answers to their particular queries or issues.

**Competition:** As briefly explored, we came across the fact that there are already a lot of well-known career counselling channels on YouTube, which makes it difficult for us to get distinguished from others and get viewers while constantly evolving our channel.

## Mobile Application

A low-bandwidth mobile application (app) designed as a multifaceted portal and database through which users can access information regarding career prospects, universities, application processes, and scholarships and connect with other users, attendees, and alumni of different educational institutes. The mobile application will also allow users to select universities, and scholarships they wish to receive tailored updates on.



### Pros

**Widespread access to phones:** As per our user research phase findings, 70% of participants had access to a working cell phone and an internet connection during their

secondary education. This means that a majority of the impacted group can download and use a mobile app.

**Compact solution:** The app will be a one-stop solution to get the most updated information on the application process for a large number of universities and scholarships, which addresses the issue of fragmented and outdated information available on the internet.

**Ability to track universities in an organised manner:** By allowing users to track specific universities through personalised updates, we address the issue of students having difficulty staying organized and feeling overwhelmed during the atypical application process.

**Alumni support:** During our user research phase, we found that our targeted group would frequently seek help from alumni and enrolled students of universities they were interested in. Therefore, the application will provide its users a platform to connect with each other, preserving and implementing an essential aspect of our targeted group's post-secondary preparation process: alumni relations and peer interaction.

**Lightweight and can work in poor connectivity:** The application is designed to be lightweight, addressing the issue of limited access to internet data and limited internet services due to the area you are located in.

## **Cons**

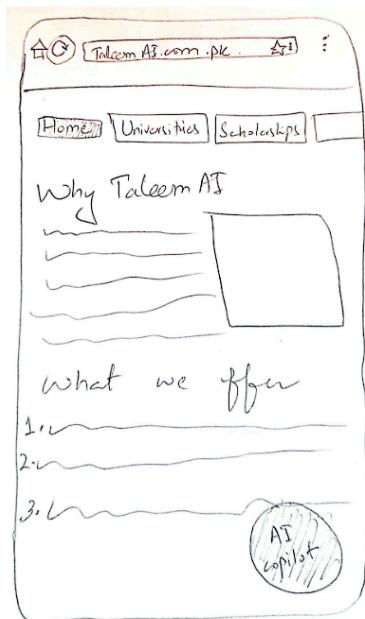
**Active internet to access updated database:** The application will need an active internet connection to give the most recent updates. The user will only be able to access the uncached database when the phone is connected to the internet.

**Struggle in navigation due to unfamiliarity with apps:** Users may have difficulty navigating the app during their initial interactions, depending on their comfort level when interacting with mobile apps.

## Website

One way of extending counselling to such students is through a website. Websites offer the same functionalities as apps and are sometimes even more maneuverable.

In our design, we will have a tab for a counselling AI bot, a tab for reaching out to the community and joining in the discussions. On another tab, you will be able to view the upcoming deadlines for universities, and you will be able to search for the university of your choice as well. In front of every university deadline, you would be able to get information on what is required in the application and if there is a test, it will prompt you to the test preparation segment on the website. Furthermore, an AI bot will always be active on the screen, helping you out whenever it is clicked.



## Pros

**Versatility:** A website is customizable and can support a myriad of customizability, able to adapt to various screen sizes hence making it a versatile option.

**Easy to develop and host:** The website can be built in a common stack such as MERN or MEAN and the database can be hosted on Firebase or Mongodb.

**APIs:** The website can easily integrate other APIs that can keep enhancing the website's functionality over time.

**No installation required:** Unlike other alternatives, a website does not need to be installed on the mobile phone hence being a space-efficient solution.

**No specification limitations:** The website can run on any phone regardless of specifications

## Cons

**Inaccessible:** The website is not as accessible as an app since it requires a laptop or a computer setup unlike the latter which requires only a mobile phone i.e., a device that is always in the pocket

**Navigation:** The website might be slightly harder to navigate than an app especially since computers and laptops are not as prevalent in underprivileged areas as mobile phones are, hence the users might not be as proficient in navigating browser websites.

**Experience Issues:** A website might not have the best experience on a phone as a website design might not translate to a smaller mobile screen most efficiently.

## Workshops for Instructors

One way of extending counselling is to conduct workshops to train the instructor on how they can provide counselling to their students. These workshops can be conducted across the cities

and the instructors can be incentivized to attend it by providing certifications for all the attendees.

## Pros

**Informed Guidance:** Instructors often know the strengths and weaknesses of their students better than most. Equipped with adequate training, they can provide more personalised and informed guidance.

**Increased Engagement:** Having career counselling discussions in class as a routine thing may increase the engagement of the students and involve even the students who otherwise may not have researched much on their own outside schools.

**Saving resources:** Utilising already employed instructors to provide career guidance can be a cost and resource-effective solution.

## Cons

**Training Cost:** Booking venues and accommodations for instructors from all over the region for in-house training may be a financially heavy solution.

**Time Consuming:** Training the instructors to be well-equipped enough to advise others is a time-consuming procedure.

**Bias:** Instructors might consciously and unconsciously be more biased towards their favoured students or the students whose inclinations align with their own.

## 6. Literature Review

The exploration of challenges within the educational landscape, particularly in the context of counselling, has long been a focal point of academic discussions. Consequently, there has been notable work done in this domain.

"FindMyself," a self-reflection application, takes a step towards merging technology and career counselling by emphasising the often-overlooked emotional and human aspect of job decision-making. Hahner and her team argue that the majority of career guidance systems often overlook students' non-cognitive side (emotional, personal) of decision-making, potentially leading them to make imposed choices which do not truly align with their actual desires/preferences. Since mobile phone usage is more frequent in adults, mobile apps could offer a promising solution. In a field study of 46 participants, the application was found to be easy, flexible, and supportive of self-reflection. "FindMyself" contributes to enhancing career guidance resources, emphasising personalised exploration and decision-making empowerment. It demonstrates the potential of platforms where students can engage in self-discovery and learn to make informed career decisions. Moreover, it also suggests that such self-assessment and schedule-friendly mobile apps offer a positive step towards bridging career counselling gaps.

A study at Universitas Sebelas Maret on online counseling showed the potential of using pre-existing online platforms for remote career counselling. In the analysis of their own implementation, Purwaningrum identified that online counselling can be effective depending on the fact that there are no technical errors and the counsellor has the necessary skills for effective counselling. He identified that effective counselling is dependent on the suitability of the platform for the client. Rapport can be built with the client pre counselling through

whatsapp bots or chat. The study used the Whatsapp chat option, which proved to be a successful framework for counselor-client interactions. Regardless, using pre-existing platforms and integrating with a new concept which the user is not accustomed to can be challenging. Furthermore, ensuring that the current UI adequately addresses and maps to the needs of the targeted group would be difficult. A better approach perhaps would be to integrate pre-existing design into new tools, such that users can map their pre-existing knowledge and get familiar with the new tool rather easily.

Career counselling can present further challenges depending on the level of competitiveness of an education system, and the apparent scope of the careers. In the high school competitive exam environment of Taiwan, Lin and his team identified the need for the provision of resources and support to help students find the right college major. The paper talks about the feature of “Academic Profiling” to help the students understand the viable options and to navigate through them. In order to incur the lack of diversity of opinions, in the proposed system of UniCompass, insights from personal experiences are shared by university students to peers and facilitating connections help them understand the ground reality and the correct expectations from the university system. This situation can be seen in parallel to the state of the Pakistani education system where students often struggle choosing the right career and get caught in a rat race.

With the increasing stronghold of AI in all aspects of daily life, researchers and educators around the globe are experimenting with its utility in education. Majjate et al argue that while many areas in education have been modernised, career counselling is still approached the same traditional way which does not provide exclusive and personalised attention to students. In order to combat this, Majjate has proposed a solution in the form of a model that takes into account a student's past history, as well as preference to predict the likelihood of admission in

a university and to recommend similar universities based on the model results. As AI integration has become easier than ever, it can benefit the Pakistani students, who are already under great pressure during their intermediate years, to receive personalized and methodical counselling on the options that can suit them the best.

On the subject of career counselling in Pakistan, Minhas et al emphasize the gaps in career and educational counselling that exist in the Pakistani context. They argue that students usually rely on other resources such as friends and teachers for guidance. They recommend that there needs to exist career counselling at the college level to enable students make better decisions about their future. However they stop short of proposing any tangible solution that can be deployed and tested.

The assessment of existing tools suggests an urgent need for a counselling solution that is specifically catering to the Pakistani context. A solution of this sort must overcome barriers of internet access and literacy, consider cultural norms, and give students an array of meaningful, immediate remedies. It should leverage technology to improve accessibility and engagement while being adaptive to the diverse needs and realities of Pakistani students. Ideally, this tool would not only assist students in making academic selections, but also empower them with the skills and self-awareness needed for long-term professional development. Consequently, our work is new because unlike the previously done work which either emphasises too much on policy-making, an often long and tedious process, or focuses on non-Pakistani contexts, our work is tailored specifically to the needs of a Pakistani intermediate student and aims to offer a more immediate solution to this grave issue so that the students no longer have to wait years for the changes to take effect.

**(Used GPT to organize the pointers)**

## 7. The final design - TaleemAI

### Who are the Users?

Reflecting upon the experiences of interviewing individuals from diverse backgrounds in our user research phase, we were exposed to a variety of problems and hence a vast problem space. Amongst all the interviews we conducted were a few students from **cadet/boarding** colleges, which presented another unique set of challenges such as limited/no mobile phone usage, lack of internet availability, and device limitations within these institutions. After careful consideration and discussions, we eventually decided to eliminate this specific user group from our target audience as it itself was another challenge at a huge scale: it was merely *a matter at administrative level which could be resolved majorly with the intervention of higher authorities* and governmental steps. While we definitely valued inclusivity and diversity in our research, practical considerations such as administrative limitations and accessibility constraints led us to narrow down our user group and hence our problem space.

***The final users that we have decided to target are users who have access to a relatively stable internet as well as a device with which they can access the internet.*** The device in our case is a smartphone. This persona represents **70%** of our research participants. Their pain point is the inability to find all the information in one comprehensive place, which leads to confusion and inaction.

### Why not the Alternatives?

Based on discussions of various alternatives, we have decided to go ahead with developing an app based on the problems we can solve through our designs. Below is a rundown of why the different alternatives do not fit our specific purposes.

## 1. WhatsApp Bot

The Whatsapp bot is a versatile alternative that is cheaper to deploy and even cheaper to employ. The bot would have been easily accessed through a **phone number**. The bot would have been capable of answering basic queries regarding admissions and deadlines. However, we realised that the bot does not solve our main digital divide issue since it is a bit difficult to track information. Also, the bot does not allow the user to explore different options and rather relies on specific inputs from the user.

Furthermore, during our research, we found that most people found it helpful when they received direct guidance from alumni or specific students of a particular university. But, a Whatsapp bot does not connect people and hence does not serve the purpose of a community. For these reasons, we believe a WhatsApp bot cannot serve as a viable design alternative for our problem.

## 2. Animated Youtube Channel

The YouTube channel powered with animation sounds like a favourable option because the information can be presented visually and compellingly. However, a YouTube channel inherits the same problems that are present in our research sample: a YouTube channel is not easy to navigate and keep track of. There are numerous distractions that can affect the concentration of individuals. It is difficult to follow since videos may not be properly organised and students may have to navigate through dozens of videos to find an appropriate and convincing one. Furthermore, it still does not allow the community to interact with each other which remains one of the biggest challenges that many students face.

### 3. Gamified App

A game based design seems like a viable option but we have explored all the functionalities related to it. Initially, the idea of developing a game-based mobile counselling application appeared to be a simple solution to making career and educational counselling more engaging. As we delved deeper into the concept, it became evident that while such an application has its merits, it also comes with significant challenges. The game-based approach inherently offers a dynamic and interactive way to capture users' interests and tailor the counselling experience to their preferences. This method allows for a level of personalization and adaptability that traditional counselling methods struggle to match, potentially transforming a mundane task into an enjoyable journey of self-discovery.

However, after brainstorming, we identified several drawbacks that made us reconsider our approach. The nature of a game-based application, which relies heavily on **MCQs for interaction**, presents a challenge in accurately quantifying and understanding the goals and interests of the user. The risk of oversimplifying the complex decisions becomes a challenge. Also, maintaining a difference between the learning perspective from a game and its gamification nature would hinder the successful communication of the relevant information. It also brought in the issue of access, especially where the mobile device is shared by the family members, hence the user could find it difficult to access and use the application uniformly and in a private manner.

Given these considerations, the decision was made to explore alternatives to the game-based mobile counselling application. While the concept had promise, the

practical challenges and limitations we uncovered led us to conclude that it might not be the most effective solution for our intended goals.

#### **4. Website**

A website may seem like a straightforward option at first but after thorough discussions, we discussed it. First of all, websites are easier to manage and deploy. They allow for personalization and flexibility. You can incorporate all the features of an app into a website.

However, for our intent and purposes, we found that a website is not easy to navigate. It is a big clutter owing to the browser buttons and the stat bar underneath. Furthermore, most of our sample users relied on smartphones to access the internet. Websites are more suited for desktops. We also realised that accessing a website involves more steps than opening an app since you have to open the browser, type the address and then navigate the website. There is a lot of room for distractions in between.

Hence, in view of the above shortcoming, we decided against the use of websites.

#### **5. Instructor workshops**

Conducting workshops and ensuring the instructors are well-equipped to counsel others is a time-taking process as well as costly. Moreover, the instructors may be more prone to bias either consciously or unconsciously. Furthermore, adding career counselling responsibilities to instructors' already demanding roles can lead to burnout and further increase job dissatisfaction.

## Our Final Design

In light of the above arguments, we have opted for the development of a mobile application as a design decision for the problem we have identified. We will be naming this application "TaleemAI."

### Why the name “TaleemAI”?

We have decided to name the application TaleemAI because it incorporates two important aspects of our platform - first “Taleem”, meaning “Education” in Urdu, and second “AI,” representing “Artificial Intelligence.”

1. **Cultural Significance:** Since the application is primarily focused for Pakistan, the inclusion of “Taleem,” a word from Urdu resonates with the target audience.
2. **Educational Focus:** The word “Taleem” directly communicates the primary purpose of our application: to provide educational guidance and support. By naming our application after “Education,” we make it clear to the audience that our platform is dedicated to helping students in their educational endeavours.
3. **Innovation:** The inclusion of the word “AI” highlights our commitment to technology and forward-thinking in our approach. Artificial Intelligence powers our platform, particularly through our chatbot feature (explained in detail in later pages).

In summary, the name TaleemAI not only reflects the core objectives and functionality of our application but also resonates with users by emphasising cultural relevance, educational focus, innovation.

## Essential Features

There are essential elements of our design that we wanted to have that were aimed at the problems that we have identified in our sample users.

### 1. Splash Screen

Upon the initial startup of the application, users will be greeted by an engaging splash screen designed to captivate their interest and keep them occupied while the application loads its database and launches. The splash screen will prominently feature the application's logo and tagline, providing users with a succinct overview of the application's identity and purpose.

### 2. Account Setup

To use the application, users will need to either log in or register and set up their account if they are using the application for the first time. For logging in, they can choose between the traditional method, where they input the username and password they selected during account setup, or they can opt for logging in via their Google accounts. To register, they can enter their email address, username, and password to set up the account as either a Buddy or an Applicant (the distinction between these two modes has been elaborated in the Brainstorming section).

We've implemented the Account Setup feature to enhance the user experience by personalising it. This allows each user to receive customised recommendations, save preferences, and enjoy a tailored experience. Additionally, requiring users to set up accounts and log in enhances security measures. We believe that university applications are a private matter, and thus, we are committed to maintaining the privacy and integrity of user information. Furthermore, individual accounts facilitate

communication within the application, particularly via the Community feature (explained later). This fosters a sense of community and engagement among users.

### 3. Homepage

Based on our findings and user research, we discovered that the users demand an intuitive, easy-to-understand navigation system. Hence, the application's homepage adopts a card-based design, presenting information in bite-sized chunks for easier digestion. This modular approach enables users to swiftly scan for relevant information. Each module features an intuitive icon with accompanying text to clarify its function.

The purpose of this screen is to provide the users with a centralised hub from which they can view the key features and navigate to the different sections of the application.

The homepage features the following:

1. **DEADLINE VIEWER:** This viewer is essential for helping students offer a streamlined view of the deadlines for the universities that the user has saved. The viewer features five most imminent deadlines and an option to expand this view to view the deadlines for all the saved universities. The aim for this is to help the users prioritise tasks and manage their time for the applications accordingly.
2. **UNIVERSITIES:** This button is enhanced with an animated image of buildings, aiding users in identifying its purpose without the need to read the text. It's designed for users looking for information on various universities. The purpose for this button is to help the users explore their higher education options, simplifying the search for information on various institutions
3. **SCHOLARSHIPS:** Supplemented with a currency icon to help the users better understand its purpose, this button leads users to information about available

scholarships, financial aid, and other funding opportunities that can be searched and filtered according to user preferences and eligibility criteria.

4. **COMMUNITY:** The "COMMUNITY" button fosters a sense of community, connecting users to forums, and social features where they can engage with peers, share experiences, and seek advice.
5. **HELP:** Marked with a big, easy-to-spot Question Mark (?) above to title "HELP," this button provides users with access to support resources, FAQs, and contact information for further assistance.

Each of these elements plays a vital role in creating a user-centred, navigable, and supportive digital environment

#### 4. Sticky Navigation Bar

The application incorporates a sticky navigation bar at the bottom of every screen, which consists of three distinct buttons:

1. **Home Button:** This button is adorned with a home icon, immediately conveying its purpose to users, allowing for quick return to the homepage.
2. **AI Assistant Chatbot Button:** Featuring a friendly, animated avatar of a robot, this button clearly signifies access to the application's in-house AI assistant chatbot, providing an interactive help resource.
3. **Settings Button:** Utilising the universally recognized 'gear' icon, this button is instantly identifiable, offering users a straightforward path to adjusting application settings.

The persistent visibility of this navigation bar greatly enhances user convenience, enabling direct navigation to specific application sections without the need to scroll. This

contributes to a smoother and more efficient browsing experience. Moreover, the navigation bar is designed to be compact and unobtrusive, thus offering essential functionality without occupying excessive screen space.

## 5. University Search Tool

During the user research phase, many participants indicated that searching for universities was a tedious and time-consuming task given their already packed daily schedule. Moreover, keeping track of universities, their requirements, and deadlines can be an overwhelming task, this has appeared to be a shared sentiment among the interviewees. This feedback made it abundantly clear to us that we need to incorporate the functionality to filter out and track universities in a manner that is simple and intuitive. Therefore, we propose to allocate a separate section for university search functionality, while ensuring that the design follows good design principles.

The ‘Universities’ button on the homepage leads the user to a series of screens that help filter out the university results as per his/her preference. The ‘Universities’ button features a building and easy-to-read text. The icon is large and covers 1/8th of the screen so that the user can easily identify the purpose of the button, and what to expect.

We propose the flow to be the following:

- **Homescreen:** The home screen will serve as the starting point for users, with a clearly indicated icon for university searches. This design approach guarantees that customers may start their search quickly and efficiently, without having to travel through complicated menus. The goal is to provide a simple and intuitive user experience from the start.

- **Location Filter:** The location filter screen allows users to narrow their university search depending on their selected geographical locations in Pakistan. This feature will be critical since students frequently have site preferences for reasons such as closeness to family, climate, or cultural concerns. This filter will incentivize the users to reduce their search results to schools in their preferred locations, saving both their time and effort, which otherwise takes a substantial time if one were to manually shortlist universities.
- **Search Results:** Upon selecting the locations, users will see a filtered list of institutions. We will be limiting the number of cards featuring universities displayed on the screen to three at a time, which will prevent the screen from cluttering. The users will be able to scroll through the options easily. Important details like the name, location, deadline, and photo on every card would combine the information in one place so that the user can quickly decide if they want to further explore the option.
- **University Page:** Once the user selects a university from the search results, they are sent to the university page on the app. This page will have all additional information organized in a drop down menu, ensuring that the user does not have to sift through blocks of texts and fish for information. There will be drop-down tabs for application requirements, schools/programs, scholarships, and alumni. There will also be an apply button on the page which will lead to the

## 6. EduMind - AI Assistant Chatbot

The application features an AI assistant named EduMind, which is designed to make the university application process smoother for applicants. This chatbot is capable of answering general queries or fetching information as required, aimed at helping

applicants find the information they might be unsure of or cannot locate within the mobile application.

EduMind is not just any chatbot; it has been personified with a distinct personality and an animated, friendly-looking avatar to create a welcoming and engaging user experience.

One of EduMind's standout features is a specialised questionnaire that evaluates users' proficiencies, skills, aspirations, and interests. This thoughtful approach helps in suggesting majors or degrees that resonate with their career goals and personal inclinations.

The interface for the chat with EduMind is inspired by the chat interface of popular chat applications such as WhatsApp to make the user feel instantly at home.

EduMind is a versatile chatbot that can handle an array of tasks with ease. Some of the many tasks that it can perform are:

1. Providing deadlines for specific universities.
2. Offering constructive feedback on statement of purpose (SOP) and/or letters of motivation.
3. Explaining what a specific degree or major entails.
4. Helping users understand how to navigate the mobile application.
5. Assisting users in fetching contact details of specified universities.
6. Conducting a tailored major recommendation questionnaire, followed by personalised advice and suggestions.

Through these capabilities, EduMind aims to be an invaluable companion on the journey to higher education, simplifying the application process and helping students make informed decisions about their academic futures.

## 7. Scholarships Section

One of the most crucial insights we have got from the students is that they are unable to keep a track of the scholarships and thus it becomes difficult for them to apply for that within a certain deadline. Since most of the students we interviewed were first generation students, we came to the conclusion that most of them only apply to those universities which offer them scholarships. This shows that access to the relevant scholarships and keeping a track of the necessary ones is important.

Our final design choice involves a separate section for the reason that students will be directly able to look for the desired option through the database of the scholarships. Scholarship section is not just capable of handling the databases but it also offers the basic and smart options to navigate through that. It shows the following options to the users upon clicking the scholarship button on the homescreen:

- 1. Scholarship Deadlines:** We found out from the research that students find it difficult to keep a track of the deadlines and most of them don't even apply to the desired university if they miss the scholarship deadlines. We have also concluded from the findings that timely application submission is one of the crucial problems for the students. For this purpose, we have incorporated the user insights and developed a deadline dedicated section that reminds the user about all the upcoming deadlines that a user has bookmarked. So in case they

forget about the timelines, it will be shown to them in the order of the priority of the coming deadline.

**2. Search Bar:** We have dedicated a search bar for the ease of the user to let them search about the scholarships known to them. This will help them to find the requirements of the scholarships in an easier manner. Since one insight was that users want to know about different kinds of the scholarships, that's why we have dedicated a sort and a filter option with the search bar that gives them the relevant option to optimise the search in one go.

**3. Explore by Section:** This section will show a list of the scholarships to the students as an exploratory process. Students will be able to see the name of the scholarship along with the amount of it. One of the user insights was that most of the scholarships have a long list of details that don't help them in any way, so they can now look at the summarised details of the scholarships and bookmark it for further use or apply it right away. There is also a bookmark option available at the end of every section of the details of the scholarship that helps the student to keep a track of the deadline.

## **8. Deadline Tracker**

Throughout our user research, we came across a common pain point expressed by majority of our participants, i.e., lack of a concise and centralised way to track university application deadlines. Participants shared a common sentiment of frustration about having to navigate to multiple university websites including other sources and platforms to stay updated on deadlines for different universities. Especially during the times of applying, many users felt overwhelmed by the sheer volume of deadlines they needed to keep track of and hinted towards a solution that would simplify the process and

provide a clear, centralised, easily accessible, and user-friendly deadline tracking solution.

With our Deadline Tracker feature, we tried to address the challenges identified in the user research phase through following ways.

1. **Centralised deadline tracking:** To address the main concern of tracking deadlines, we have created a whole dedicated section at the very beginning of our homepage consisting of all upcoming important deadlines of universities. So, users can easily view and track deadlines for all universities they might be interested in, initially seeing brief details for 3-4 universities.
2. **Concise Overview:** Instead of displaying excessive information, we have concisely put the most important details of the universities including their names, location, and deadlines only. Thus, we have reduced the overall journey the user might have taken originally while exploring online platforms, another pain point of our users.
3. **Applied Status Tracking:** According to our users, the secondary problem they faced after acknowledging deadlines was to keep track of application status. To streamline the application process, a checkmark option was integrated intentionally in an attempt to solve this problem. The feature helps users to easily track which applications they have already submitted, and which are yet incomplete, hence providing reassurance and eliminating the risk of missing deadlines.

## 9. Deadline Tracker Notifications

Extending upon the previous issue of missing important dates amongst several university deadlines, we decided to go a bit further to address this critical issue that the majority of our users faced. Apart from building a deadline tracker section (listed above), we decided to incorporate a deadline tracker notification feature, a beneficial step which offers users a further convenient and efficient way to stay updated on upcoming deadlines.

As we discussed with our users during the user research phase, mostly had a common challenge of forgetting or overlooking critical dates amidst their busy schedules. In some cases, users couldn't even apply to their desired universities due to getting late for filling applications despite approximating that the deadlines were roughly near (the risks are always higher in such cases). Hence, a primary benefit of including such deadline tracker notifications is to timely remind the users of upcoming deadlines. By receiving notifications directly on their mobile phones in a convenient and efficient manner, users are less likely to miss important deadlines. This also helps in diminishing the stress and anxiety students mostly face during that phase out of fear of missing application deadlines. In addition to that, timely notifications encourage active engagement from the user's end as well, a crucial step for developing interactivity. As implied indirectly by the users, gathering such important data is not the absolute primary issue: rather it's the proper usage of it such that it holds the user accountable in a positive manner. Similarly, building upon the interactivity aspect, the notification feature also adds positively to the user experience as the timely reminders might also eliminate the need for manual navigation within the app. Therefore, such a streamlined process of keeping deadlines track will also allow users to focus their time and energy on other tasks. Users can rely

on the app to keep them informed about upcoming critical dates, freeing them from the burden of constantly checking for updates manually.

## 10. Community

Based on our findings in the user research phase, we identified that people found it helpful if they received guidance from other people rather than a wall of text or even an AI. Perhaps there is more trust when you know that the person giving you the advice has been through the same situation. Therefore, in our final design, we have decided that we are going to include some sort of a community feature that will enable people to connect with other people who are going through the same situation as well as connect them to relevant students who are studying in their prospective universities.

The community will provide two basic functionalities

1. **General Forum:** General Forum is our public discussion forum where anyone can post their questions. They can be answered by the general public or a dedicated buddy, our university ambassadors. Whenever a buddy answers a question, the question will be highlighted. The purpose of highlighting is to ensure that the most authentic and correct information is presented to the user.

Through the general forums, you will have three functionalities

- a. Post a question
- b. Reply to a question
- c. View replies to other questions

2. **Buddy Connect:** The buddy connect is our go-to place for connecting with dedicated and authenticated students of a university the user is interested in. The Buddy Connect page will contain the profiles of individuals from various

universities. You can also search for friends from a particular university using the search tab.

- a. Buddy Profiles: Upon clicking the profile of a buddy. Their profile would open with information regarding their names, university, reviews and a paragraph about who they are. There the user would have 2 options :
  - i. Send Request: This will allow the user to connect with the particular buddy
  - ii. Send a message: This message will allow the user to send a direct message to a buddy. However, a user can only send a message if the buddy accepts the request. Even then messages will be limited to 5 per day to avoid spam and ensure the buddies are not being exploited.

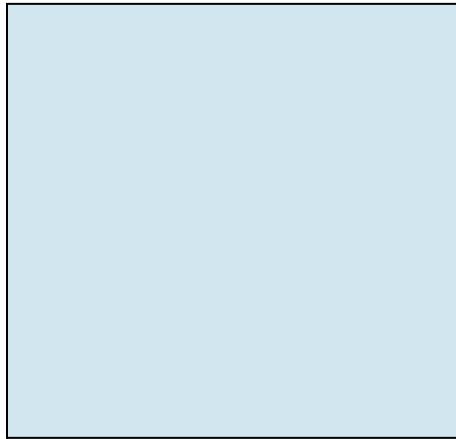
**Buddy incentives:** While discussing the buddy program, we did consider why a buddy would even want to use our app. To tackle that, we are offering two types of incentives.

1. In-app - In the form of badges and highlights
2. Outside-app - In the form of community awards at get-togethers or seminars.

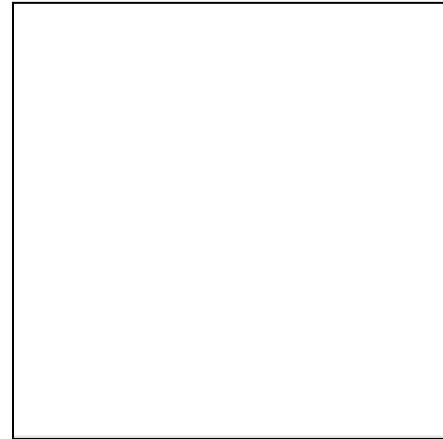
## Colour Scheme

The colour scheme of classic pastel blue and white underlines trust, reliability, and clarity. Pastel blue, associated with knowledge and serenity, offers a friendly, modern aesthetic that renders the content more accessible and inviting. Additionally, with only 0.02 percent of the population affected by tritanomaly (blue colour blindness), this choice underscores our

commitment to accessibility and inclusivity. The use of white further ensures a clean, uncluttered appearance, aligning with our design ethos.



Hex Code: #D5E9



Hex Code: #FFFFFF

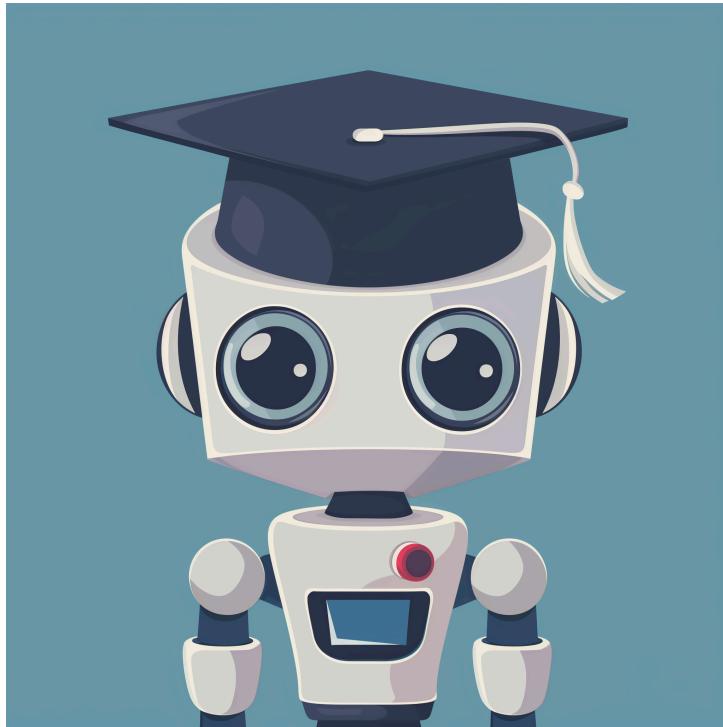
## Fonts Used

The fonts we're using are Poppins, Inter, and Grandstander.

- **Poppins:** Poppins is a geometric sans-serif font that is known for its modern and clean appearance. We've used this font for our headings because it strikes a perfect balance between professional and inviting. This makes it perfectly suited for our educational application aimed at students.
- **Inter:** We use this font on the main pages, primarily for the body texts. This is because the font's letter shapes are highly eligible which makes it an excellent choice for small texts, thus being able to cater to all sizes of mobile screens. This selection hence ensures high readability.
- **Grandstander:** We've chosen Grandstander for the AI Chatbot's introduction. Characterised by its playful and expressive style, Grandstander adds a unique personality to our AI chatbot, enhancing its appeal and bringing character to the application.

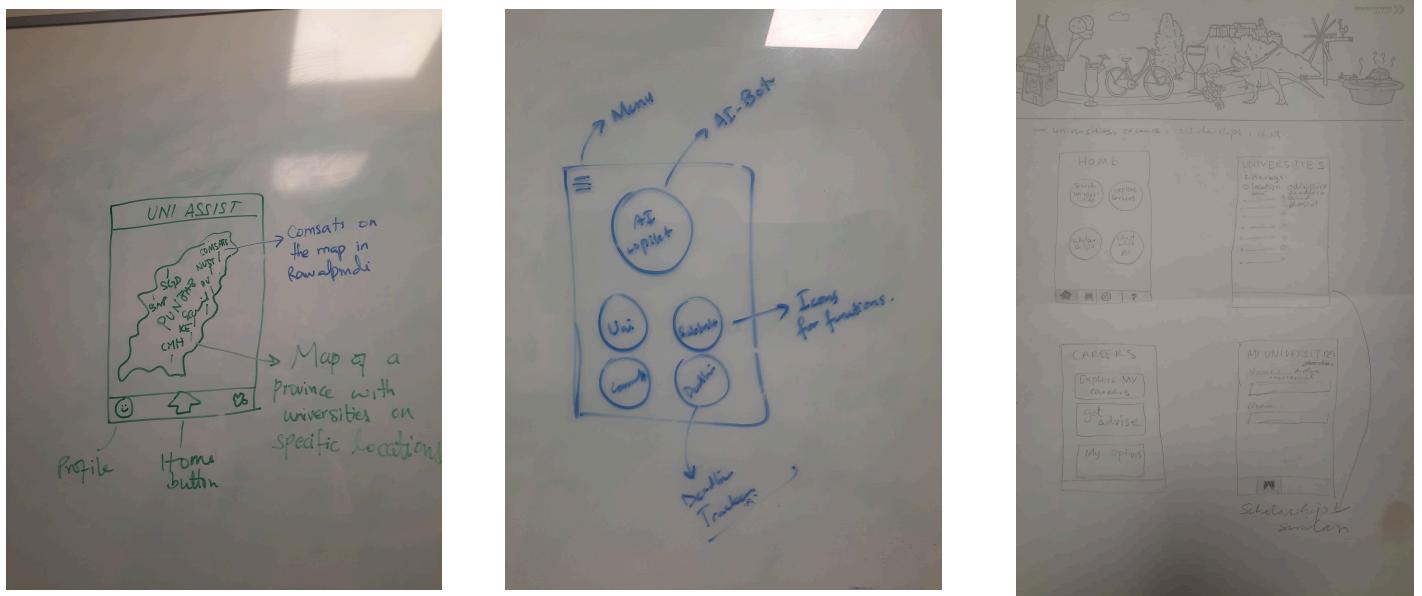
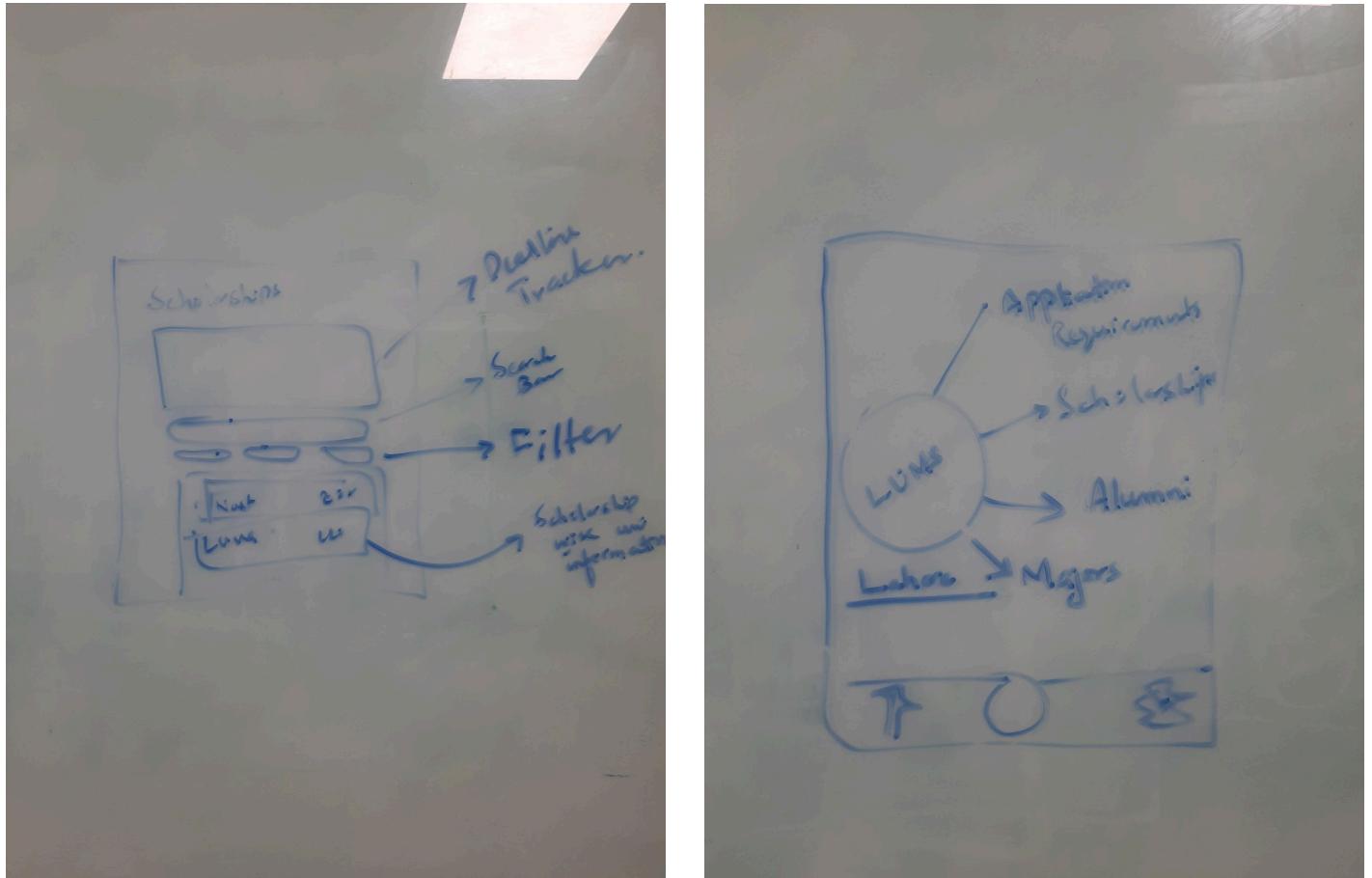
## EduMind Avatar

For the avatar of EduMind, our in-house AI-driven chatbot assistant, we went with the following design.



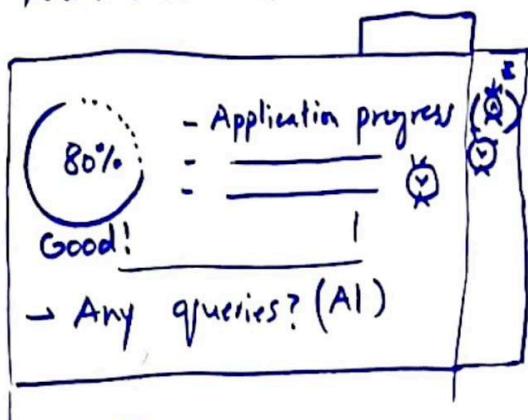
The rationale behind choosing this specific avatar is that it not only conveys the idea of AI and tech advancement within the application but also playfully underscores the application's mission of democratising educational landscape via the addition of making the robot wear a graduation cap hence adding a unique quirk to the robot. The decision to make the avatar animated/cartoon was rooted in the mission to make it appear more inviting, friendly, and approachable. Therefore, this design choice ensures that students can easily infer the bot's functionality and feel more at ease interacting with it, thanks to its cute, quirky appearance.

## 8. Sketches

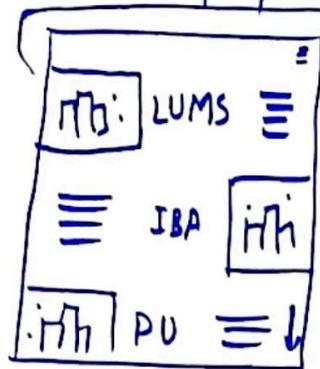


## Uni App

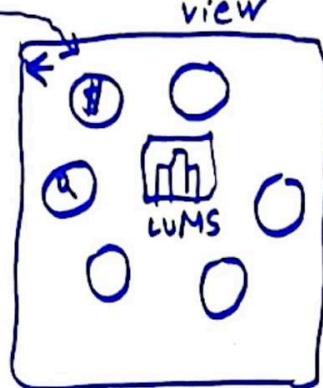
### Personal Dashboard



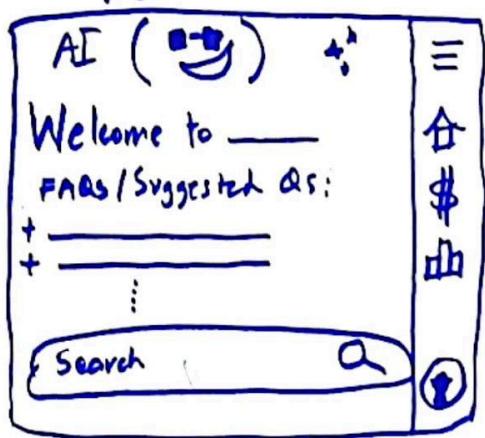
### Unis Display



### One Uni view



### AI

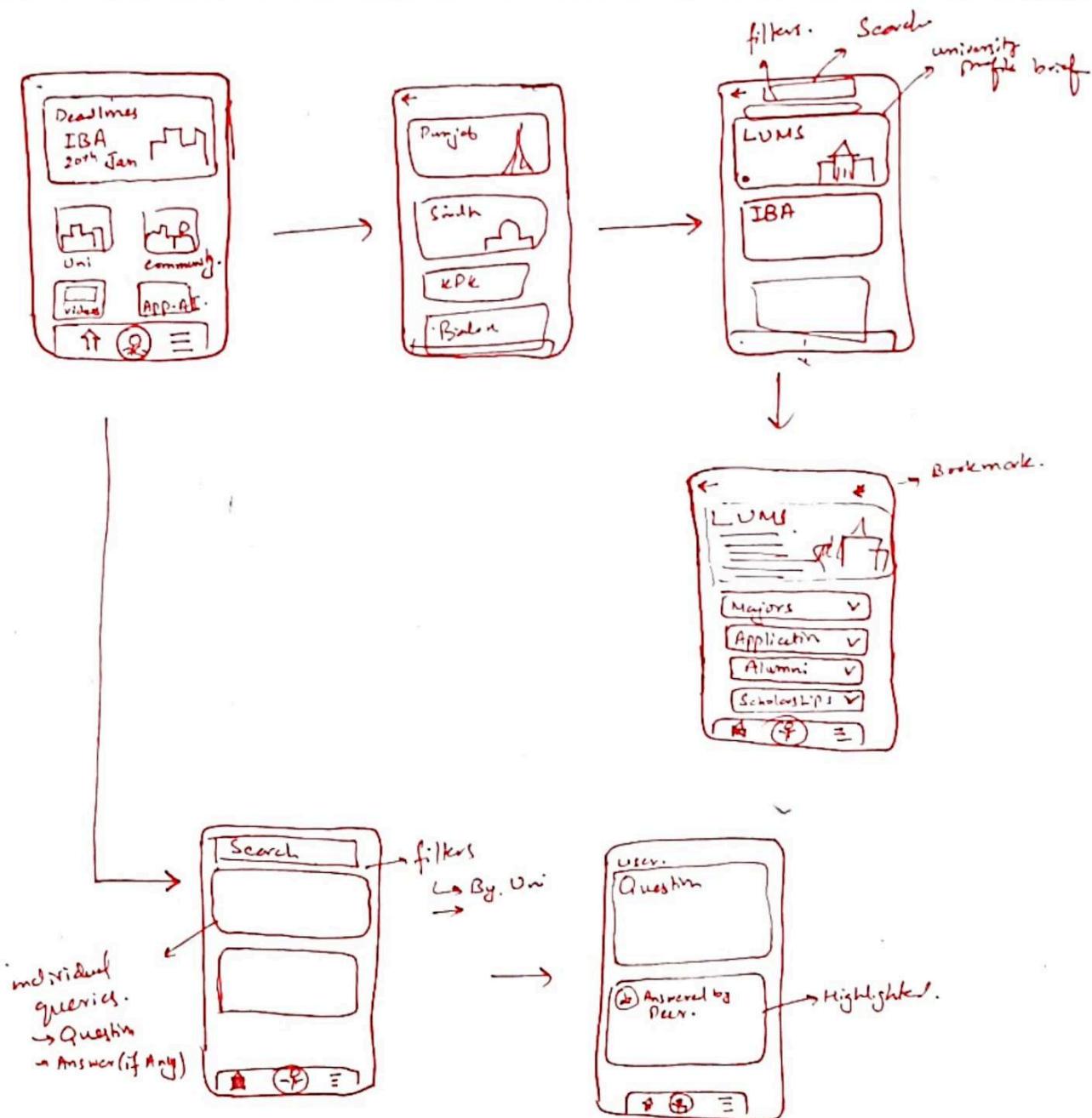


☰ → Homepage

\$ → Financial Aid

📊 → Universities

👤 → User Profile (Dashboard)



## 9. Scenarios

### Scenario 1: Personalized Career and Major Suggestions through Initial Assessment

***Goal: To offer personalised career and major suggestions based on the user's interests and proficiencies.***

Hamza is a driven, young FSc student who is unsure of what career path he wants to adopt.

Upon signing up for TaleemAI, the application's AI chatbot, EduMind, offers him the option to attempt a questionnaire to determine the best fit majors and career options for him.

Upon Hamza's agreement, the questionnaire is promptly started by EduMind. The questions within the questionnaire are designed to gauge different skills of Hamza from creativity to critical thinking and problem solving. Throughout the questionnaire, Hamza is provided encouraging feedback to keep the entire process enjoyable for him.

With progress, the questions shift from objective questions to more reflective questions ranging from asking what his ideal work environment may be to what he wishes for from his career.

Upon the completion of the questionnaire, EduMind processes Hamza's recorded responses. It identifies patterns and correlations that may exist and then compiles the results into a comprehensive report that highlights Hamza's personality traits, the careers that may be the best for him, what each of these careers involves, and what are the majors he needs to pursue for each respective career.

As a result, the application is not only able to transform a traditionally daunting task into a fun, enjoyable experience but is also able to help Hamza learn more about himself and assist him in shortlisting possible career paths.

## **Scenario 2: Community Support Features**

***Goal: Use of community support forum for a collaborative environment where alumni from the students' prospective universities upload guidance material for applications into their universities and are available for Q&A***

Ayesha, an intelligent student, has some queries about a university she wants to apply to. She wants to know about the university's engineering program's most valued extracurricular activities. However, the university administration is proving to be rather unhelpful, and she does not know any student currently studying at that university. She discovers the Community feature in the TaleemAI application and, intrigued, taps in to explore this feature.

Ayesha is welcomed by a network of both fellow applicants and university students i.e., Buddies—acting as mentors and guides—from various universities across Pakistan, including the one she wishes to apply to and has questions about. The forum is neatly organised, and Ayesha has the ability to post her question on it.

She is pleasantly surprised when within a few hours, she receives detailed responses from several alumni. One alum even shares her personal experience of leading a student project team and how it significantly bolstered her application.

Throughout her journey, Ayesha feels a sense of belonging within this community feature. She is able to help other fellow applicants and get first-hand information about the university

experience from the students who study at those universities, offering a much more holistic view than the university prospectus could. The Buddies also prove invaluable support to her as they are able to offer constructive feedback and supportive feedback. As a result, Ayesha is not only able to shortlist her list of universities but also receives invaluable guidance on how to apply, how to stand out among her peers, how to highlight her achievements, and other information or advice from the students of those universities to help strengthen her profile.

### **Scenario 3: Streamlined University Discovery and Deadline Management**

***Goal: Simplify the search and application process by enabling students to effortlessly explore universities and manage application deadlines through a centralised, intuitive platform.***

Hiba, an FSc student from KPK aiming to study computer science, is initially overwhelmed by the sheer volume of universities to consider and their varying application deadlines. She decides to download TaleemAI after hearing about it from her friend.

Upon discovering the application's advanced university search feature, she finds a way to efficiently navigate through her options. As she opens the screen, she is greeted with a modern, sleek user interface which feels much easier to navigate than the databases on the websites she previously browsed.

She starts by filtering universities geographically, aiming to study within the KPK region. The list updates instantly, showing her choices in the province. Interested in exploring further, she sorts the universities alphabetically, making note of institutions she hadn't previously considered but now finds interesting.

Curious about whether the applications for the universities are still open or not, she changes her view to sort the results from the earliest to the latest deadlines. This allows her to prioritise which universities she should apply to first and which ones to worry about later.

Once Hiba has found a university she is interested in, she taps on the title card to go to that university's page within the app and bookmarks it. This way, the university is saved within her account's database and the application is able to provide personalised reminders about the university without her having to search for it again.

## **Scenario 4: In-house Essay Writing Assistance**

***Goal: Simplify the search and application process by enabling students to effortlessly explore universities and manage application deadlines through a centralised, intuitive platform.***

Kabir is a motivated student aspiring to pursue higher education at the Lahore University of Management Sciences. Despite the limited resources of his secondary education alma mater, he has excelled academically. When applying to the university, Kabir realizes he must submit an essay. Understanding the need for a strong and convincing essay to stand out, Kabir is concerned about his writing skills.

A beacon of hope shines when a friend informs him that TaleemAI's in-house AI assistant, EduMind, can provide feedback on his essay. Kabir immediately downloads the app and uploads the first draft of his essay into the chat. EduMind springs into action, scanning the text and providing Kabir with feedback and suggestions to correct grammatical errors, spelling mistakes, and punctuation issues.

The bot suggests spelling correction, grammar correction, recommends alternate synonyms to avoid repetition in the essay and also offers suggestions to enhance the overall flow and cohesion of the essay. The tool's aim is not just to improve the text, but in the process improve Kabir's writing skills as well and make this a learning experience. Hence, with every suggestion it provides, it also attaches a detail of why this suggestion is being given so that Kabir may better understand the 'why' behind the changes he makes and learns to avoid the errors the next time around.

Following the bot's suggestions and advice, Kabir's rough draft is transformed into a polished, final version with a compelling narrative and cohesive flow. Kabir feels proud of his essay, confident that it accurately articulates the ideas he wished to communicate, and submits it confidently.

## **Scenario 5: AI-Driven Navigation**

***Goal: Simplify the Navigation for the new users by offering AI-assisted guidance and navigation.***

Kashaf is a new user of TaleemAI and is still learning her way around. She is in an urgency and needs to know what the deadline for a specific university that she forgot to add to her list is. Instead of navigating through the list again, she remembers that the application's AI chatbot, EduMind, has been trained on the application's database and is capable of answering any questions that Kashaf may have regarding the universities.

Kashaf opens up the AI chatbot screen and types in her query "What is the deadline for LUMS University?" Immediately, the AI chatbot looks through its database and as soon as it finds the

deadline for LUMS University, it composes a message, balancing a blend of friendliness, straight-forwardness, and conversational tone: “Sure, the deadline for LUMS is 12-04-2024. Hope that helps!”

As a result, Kashaf is able to get the information she needs within seconds and is not only able to remain informed but is also able to save time.

## **Scenario 6: Get Community Awards with Ease**

***Goal: Get the opportunity to earn badges and community service honors from the comfort of your home.***

Adil is a Computer Science senior who has found some free time on his hand this semester. With the graduating semester blues kicking in, he remembers how helpful his seniors were, back when he was applying for the university program.

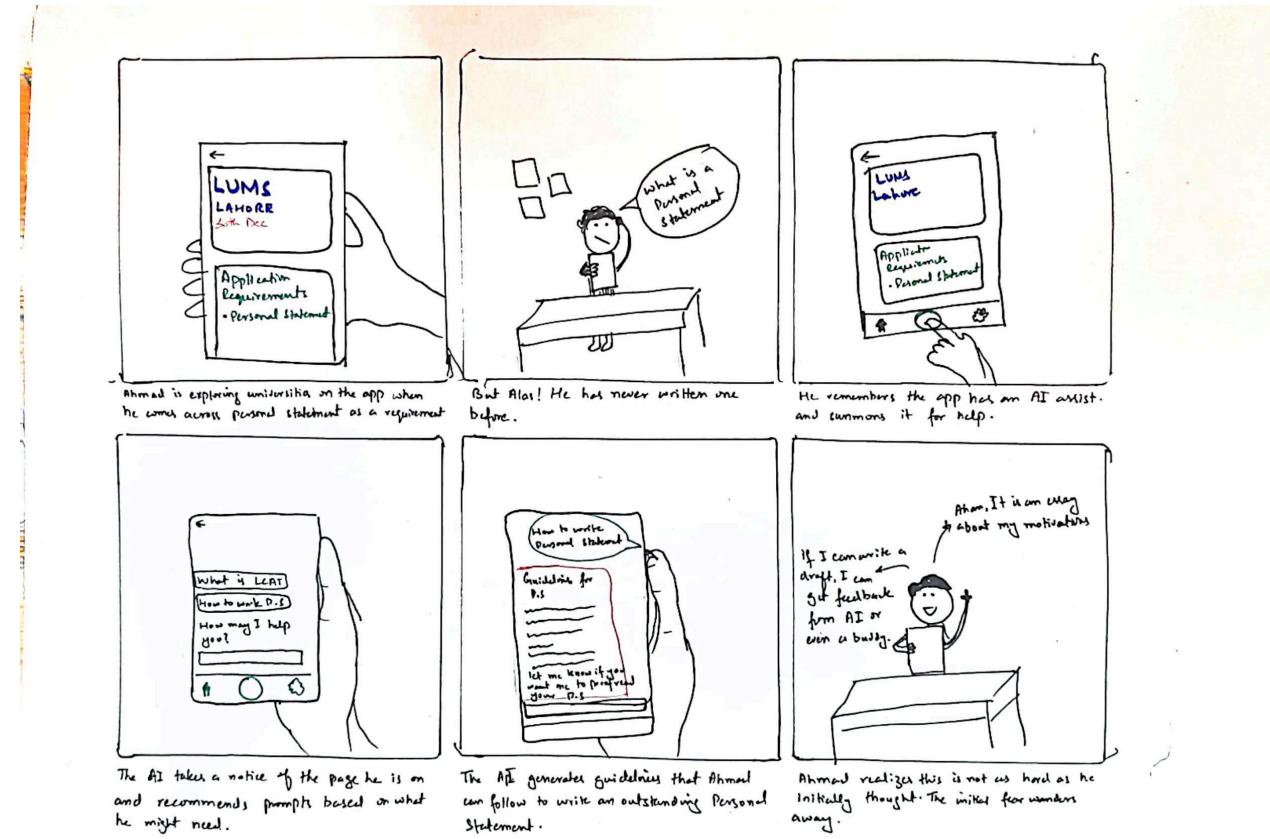
Motivated, he wishes to keep the cycle going and help the next batch of applicants. He downloads the TaleemAI application and signs up as a Buddy.

In his role, Adil is able to answer queries and be a helpful mentor to a large number of students, making a much larger impact than he may have made in-person or university-exclusive forums.

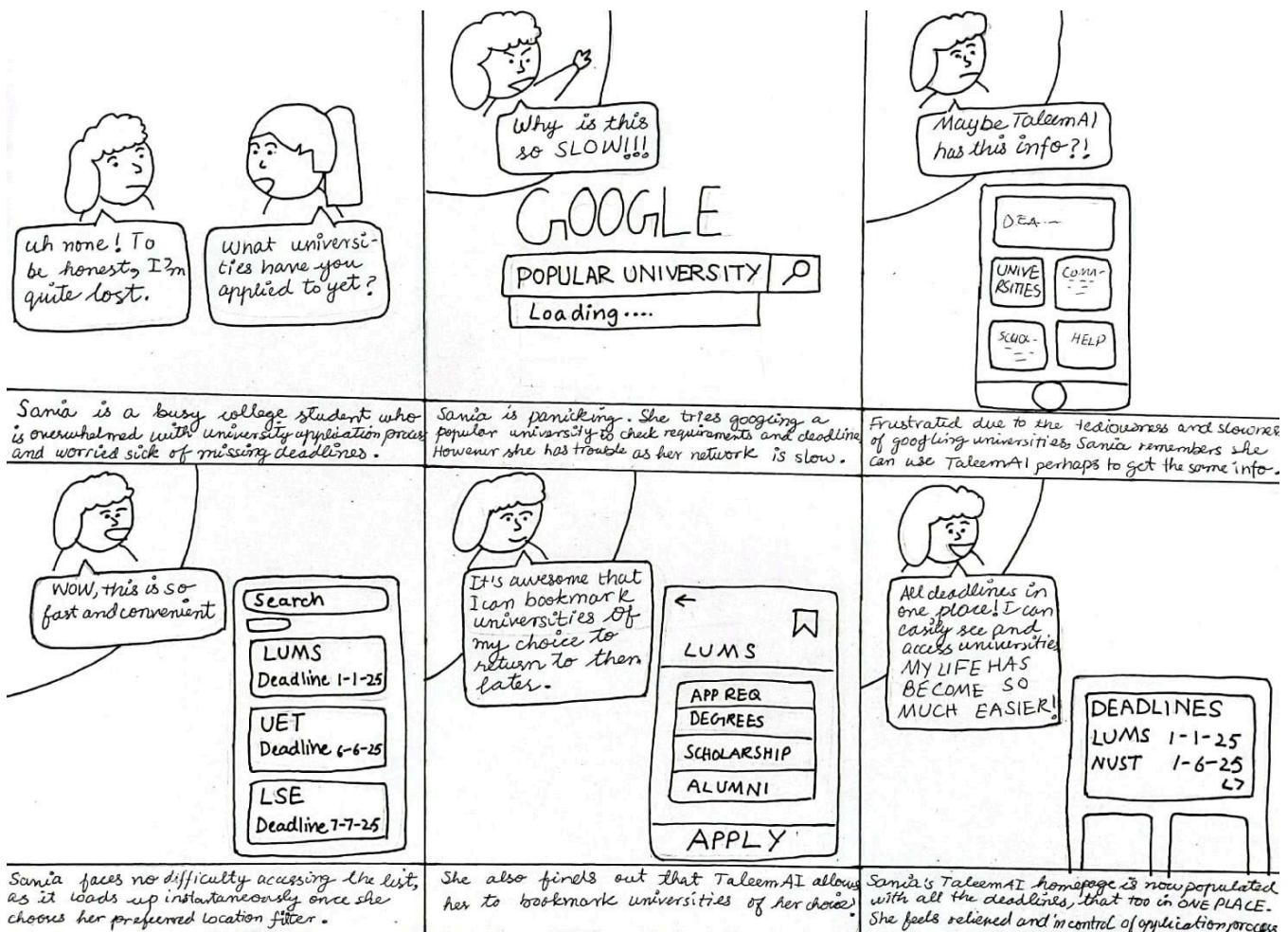
Not only that, for his helpfulness and willingness to communicate with the students who wish to reach out to him, Adil is regularly awarded community awards, badges, and honours, all of which enhance his MSc applications, particularly when listing his community service section. As a result, the application is able to facilitate a relationship where both parties are able to benefit by fostering a sense of community and collaboration.

## 10. Storyboards

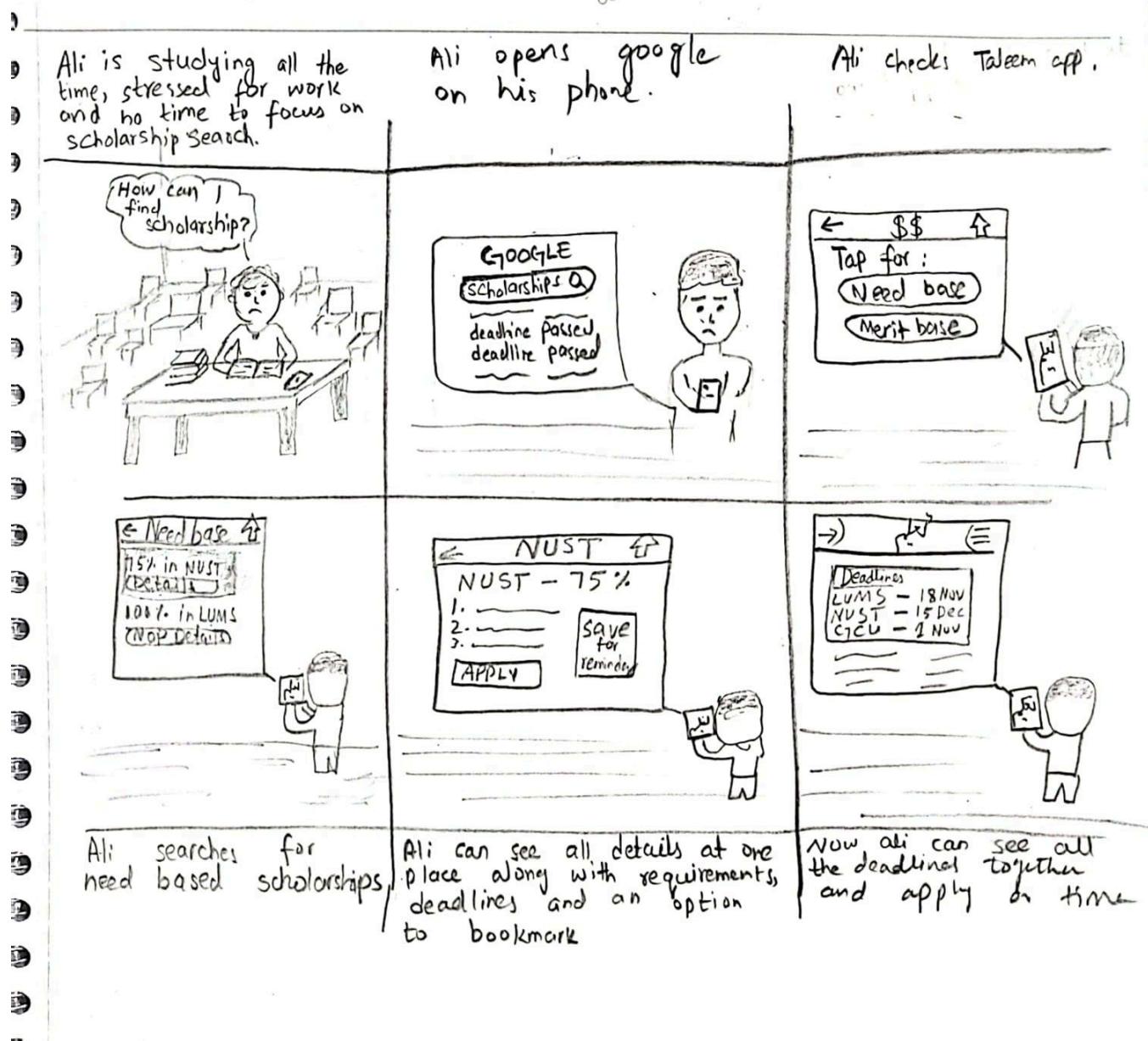
### Storyboard 1



## Storyboard 2



## Storyboard 3



## Storyboard 4



## Storyboard 5

<p>Anas recently downloaded Taleemor but still new to the app, he can't find a feature.</p>	<p>He remembers the app has an AI bot that can answer your queries.</p>	<p>He is easily able to locate the bot thanks to the unique, inviting avatar.</p>
<p>Anas is met with an intuitive UI, resembling UI of the common chat apps. He feels right at home.</p>	<p>Anas effectively types in the query he had.</p>	<p>The Chatbot is easily able to answer Anas's query accurately making Anas feel relieved.</p>

## 11. Low-fi prototyping



After a thorough investigation into our findings and design alternatives, we arrived at a preliminary set of use cases that we believe our application should be capable of performing. Our team sat together and designed paper-based, low-fidelity prototypes of the use cases and corresponding screens and flow. The following are the major preliminary sections of our application:

- Registering and Signing Up
- Homepage
- AI tool
- University Search Tool
- Scholarship Search Tool
- Deadline Tracker
- Deadline Tracker Notifications
- Community
- Settings and Profile
- App Support

The low-fidelity prototypes can be found [here](#). The sections' description, screens, and flow are detailed in the following sections.

## 1. Login/Register

Upon opening the mobile app, users are given the option to either Log In or Register, if they are accessing the application for the first time. This showcases the horizontal aspect of the application's entry point

**Log In Process:** Users have the option to log in either through

1. A Username and Password
2. Or via their Google accounts

**Registration Process:** When clicking on 'Register', the application prompts them to choose whether they wish to register as a Buddy or an Applicant, emphasising the horizontal design.

- **For Applicants:** The app vertically directs them to a new screen where users can type in their email address, password, username, and click on 'Register'.
- **For Buddies:** The process is similar, but to ensure that the Buddies are vetted (thereby guaranteeing that the information delivered to our applicants is accurate), Buddies can only register using their university-provided .edu email accounts.

After registering, users receive an email containing a one-time authentication code sent to the email address they provided. This step helps authenticate the user's identity, ensuring that the user is who they claim to be.

This vetting process, especially for Buddies, ensures that the application maintains a network of genuine mentors.

## 2. Homepage

Upon logging in, users are welcomed by an intuitive and easy-to-read homepage. The top of the homepage contains a mini view of the five most imminent upcoming deadlines, assisting users in prioritising their university applications. This deadline view is expandable via a maximise button located at its bottom right corner. Beneath this, four buttons are arranged in a matrix, enhancing navigability.

- **UNIVERSITIES:** This button is located on the upper left of the lower half of the screen, right below the deadline viewer. When tapped, the user is redirected to the “Search Universities” screen where the users can search and add the universities they wish to keep track of.
- **SCHOLARSHIPS:** This button is to the right of the “UNIVERSITIES” button i.e., upper right of the lower half of the screen, right below the deadline viewer. This button, when tapped, redirects the users to the page where they can search for scholarships and funding opportunities.
- **COMMUNITY:** The "COMMUNITY" button is located right below the “UNIVERSITIES” button and redirects the users to the forums where they can post their queries or responses to others' queries.
- **HELP:** This button is to the right of the “COMMUNITY” button and takes the users to the screen where they can view the Frequently-Answered-Questions and get tutorials on how to navigate the application.

A sticky navbar below hosts three buttons:

- **Home Icon:** This button, to the leftmost side offers users quick and effortless access back to the homepage, ensuring that navigation within the app remains smooth and intuitive.
- **AI Bot Avatar:** More prominent in size, this button is in the middle of the navigation bar and signals to users that they can tap here for AI-powered functionality and to pose any inquiries they might have.
- **Settings Icon:** The settings icon on the leftmost redirects the users to the settings page where they can adjust both application settings and their personal profile preferences with ease.

### 3. AI Assistant

The application incorporates an AI assistant chatbot named EduMind, aimed at streamlining the university application process for applicants. EduMind is capable of addressing general inquiries users may have or retrieving necessary information.

Horizontally, the AI assistant bot is easily accessible from any screen within the application. Positioned centrally in the sticky navigation bar at the bottom, users can interact with EduMind seamlessly without navigating away from their current screen.

Vertically, EduMind's depth of capabilities significantly enhances the user experience. Upon tapping the bot's avatar, users are directed to a chat interface resembling popular messaging platforms like WhatsApp and Messenger. This familiar layout minimizes the learning curve for users. The chat screen welcomes users with a selection of commonly asked questions, providing a convenient starting point for inquiries. Below this, a typing bar allows users to input their queries manually or attach files and images using the addition icon on the left. Once composed, users can send their queries to the bot by tapping the send icon on the right.

This cohesive flow ensures that users can easily access the AI assistant's capabilities and seek assistance or information effectively throughout their interaction with the application.

## 4. University Search Tool

On the home screen, the university icon is placed on the middle right, denoted by the symbol of a building. Selecting the university icon initiates a series of screens that help you filter and navigate the list of universities. The flow is described below:

1. **Homescreen:** The home screen has an icon specified for the university search. Selecting the icon will initiate the university search tool.
2. **Location Filter:** This screen displays icons corresponding to each of the six major regions of Pakistan. The purpose of this feature is to give users the option to apply a location filter on the university list based on their preferences and reduce the search results. This feature corresponds to the idea that students may prefer to base their university options in certain locations for a variety of reasons. This will eliminate the need for them to shortlist. The screen also displays the option to view the complete list of universities without any filtering.
3. **Search Results:** The filtered list of universities is displayed on the screen. There are three cards displayed on the screen to avoid clutter. The user can also search for a specific university using the search option. The universities are displayed as cards featuring their name, location, deadline and photograph. The user will be able to scroll the screen to look at the rest of the universities. The university cards are clickable. The user can select the university of their choice and proceed to the next screen.

4. **University Page:** Once the user has selected the university of their choice on the search results screen, the university-specific page opens. This page is designed to have the most essential information in one compact location without the tedious details. The page features five drop-down options listed:

- **Application Requirements:** This drop-down section contains the essential requirements of the application listed in it. It would also contain the eligibility criteria so that students can quickly look at the criteria and check whether the university is a viable option. It also saves the trouble of searching the university on a search engine and tracking the eligibility criteria page, which can sometimes be quite outdated. The section will also have a link to the official university website.
- **Schools/Programs:** This section displays the list of programs/degrees offered at a particular university with brief descriptions and links attached to the university's official website page for the program. The students can, therefore, easily redirect to the program page for further details.
- **Scholarships:** This section will list the types of scholarships and aid the university offers and the criteria for eligibility. The students will be able to check whether the university would be suitable for them by checking whether the university would be affordable.
- **Alumni:** This section will list alumni from that particular university. These would be recruited alumni by TaleemAI. The Alumni will have their name, degree displayed. The students will have the option to contact these alumni through the application.

## 5. Scholarships Section

On the homescreen there is an option that leads the user to the scholarships section. It is one of the most crucial features of our app and the essence of it. A user after clicking on this option will be able to see a comprehensive screen with three main components over the screen. The first component over the screen will show them the deadlines section, secondly a search bar to explore scholarships with an option to sort and lastly an option to explore all the scholarships based on three sections. Let's look into three of these components by detail:

### 1. Scholarship Deadlines:

This section shows all the scholarships that have been bookmarked by a user from any section, being displayed based upon the upcoming deadlines. The first two will be shown on the priority basis in “Red” that attracts the user’s attention towards the deadlines. A user will be able to access those applications and details of the respective scholarship from there. In this way, a user will be able to track the records of the upcoming deadlines and submit the scholarship applications on time.

### 2. Search Bar:

A search bar is displayed right below the deadline component on the Scholarship Screen. This will allow the user to search for any scholarship. A user will be able to search for a scholarship by the respective university/authority name or the name of the scholarship itself. This will enable the user to search for the scholarships which they already know and apply directly from there. A user can also sort the searches that will appear as the result of the query inserted by them. It will help them to separate the scholarships related to them instead of getting overwhelmed by the search query. They will be able to sort over the search by *Due Date* mainly.

### **3. Explore by Section:**

This will give an option to the user to explore scholarships mainly through three given options.

- Need Based
- Merit Based
- Quota Based

These options will help the user to explore the scholarships that align with their criteria. Need based will show all the scholarships that are need based whereas merit corresponds to all the ones available on merit and lastly, quota will cover the special quota scholarships available for the specific audience. Let's explore the Need Based section, all the other sections will follow the similar pattern by design. If a user clicks on the respective option, they will be shown a Screen with the title of the *Need Based Scholarships*.

The **Need Based Scholarships** screen follows the following flow:

A **Search Bar** that will allow the user to search all the scholarships in the database of the Need Based Scholarship. Apart from that, a user would be able to see all the scholarships in the **tiles**. A percentage will also be shown along with the name of the scholarship that will allow the user to select the ones that are most suitable for them. That shows the amount of the scholarship that is being awarded by the selected scholarship option. After clicking on that, they will be able to explore the respective scholarships.

After clicking on a certain scholarship, a user will be taken to a specific screen where they will be shown the **requirements** along with the **apply** and **save** options.

**Requirements** will include all the prior and concise requirements for the selected scholarships. This will help the user to look at all the requirements at one place instead of separately looking

for them at multiple places. This gives rise to a smoother navigation through the available information for the students to understand and remember.

**Apply** option will take them to the application portal where they can apply. **Save** option enables them to save a respective scholarship and that will be added to the scholarships deadline section on the very first page of the scholarship. This will enable them to keep a track of the scholarships they want to apply for.

## **6. Deadline Tracker**

The very first section the user will see on top of our homepage screen is the “Deadline Tracker” section. It’s one of the core features of our app as it helps the users keep track and stay updated about the upcoming critical deadlines of the universities. Since displaying all the university deadlines at one place wouldn’t be suitable as other features would get hidden, initially a small section is displayed on the homepage with brief details of 3-4 universities along with their locations and deadlines. Within this section on the homepage, there is a clickable button on the bottom right for maximising the section. As the user clicks it, the screen expands fully to show all the universities’ approaching deadlines in a row-wise manner, along with their names and locations.

To further streamline the user experience about the application process, a checkmark option has been incorporated; this checkmark option will be displayed alongside every university indicating the “applied status”. This intentionally added feature helps the user keep track of not only the deadlines but also remind them if they have filled/submitted that university application yet or not.

## **7. Deadline Tracker Notifications:**

Once the user has logged in as an applicant aiming to apply for universities, automatically this push notification feature gets into action. As users give permission to our app for sending push notifications while installation, our scope of drawing more attention from their end broadens. Just like how push notifications come up and show on mobile screens, the feature will adopt a similar pattern where users will receive timely updates about important deadlines. Each notification will include the “TaleemAI” name and logo at the top while the main text would contain essential details such as a warning reminder message to alert the users that some important date is approaching.

Secondly, there will be a sub-heading which will display the name of the university and number of days remaining till a particular university closes its applications. Other than that, users can interact directly with notifications, tapping to access the app for more details or to take individual actions upon seeing such reminder messages. For further convenience, users have an option of customising their notification preferences in the “Other Settings” section of the app (Settings Icon at bottom right corner -> “Other Settings”). Hence, they can easily set the frequency of reminders and their timings strategically to prioritise their overall process.

## **8. Community**

On the home screen is an icon for community, denoted by icons of people hanging out. As you click it, it will take you to a section consisting of two sub-sections.

### **1. General Forums**

The general forum includes all the questions that members of the app have posted. Anyone on the app can ask a question from the general community. By clicking a

question, a pop-up will open where you can see other people's replies to that question as well. However, it will be highlighted if a buddy has answered a question. There is also a text box to allow you to post your query. At the moment, it will only be text-based queries.

## 2. Buddy Connect

- On top of the general forum, you can switch to another tab called the buddy connect. The Buddy Connect tab will connect you directly to designated alumni of various universities.
- You will be able to see a list of buddies from various universities. You can even search buddies by typing the university name through the search option. The Buddies will be sorted based on their reviews.
- Clicking on a buddy will open up their profile. Their profile will contain their profile picture if they have allowed. Their university and the location of their university. The review ratings. A short paragraph describing who they are. And the ability to add a buddy to your network to send a message directly to the buddy. Initially, the send message option would be grayed out until the buddy has accepted your request. After which, you would be able to send them 5 messages per day.

## 9. Settings and Profile

On the Navigation Bar (located on the bottom), there are three buttons. One for the home screen. One for the AI copilot. Another is for the settings tab. Once you click on the settings tab, you will have two tabs open in front of you.

### 1. Your Profile

The profile page will have two main things. One is details about the user, such as their name and ability to personalise their avatar. It will also display the user's profile picture or avatar, depending on their choice.

You can also get an overview of your progression on the Profile page. How many applications have you submitted, and how many remain from the one you have bookmarked? The progression will be shown in a straight line where the green colour represents the submitted applications, and Red denote the remaining ones.

Underneath the line would be a box, which would contain two tabs. One tab would give you an overview of the remaining applications. It would provide you with the university's name, the city where it is located and the deadline for the application.

On the submitted tab, you can get an overview of all the applications you have submitted with information similar to that displayed in the Remaining tab.

## 2. Application Settings

The other settings tab includes options like dark mode or light mode for the app. Ability to change the AI copilot avatar You will also be able to change the language of the app choosing between either Urdu or English with support for other languages planned in the future. You will also be able to personalise the type and frequency of notifications.

## 10. App Support:

On the homepage screen, there is an icon of "HELP" at bottom right, above the navigation bar. Its essential purpose is to provide guidance to users about all the features our app provides and collecting their valuable feedback. Upon clicking the icon, users will be presented with a layout similar to the home screen.

### Screen Breakdown:

**Upper Section:** The upper section will display the users five identical sections/buttons - *Deadlines, Universities, Scholarships, Community, and TaleemAI Bot*. This layout mirrors the home screen, ensuring familiarity and ease of navigation.

As the user clicks on one of the five buttons in this section, a small pop-up will be displayed mentioning the brief description of how that specific feature works. For example, clicking the *Community* button will tell the users that this button will be helpful in case the user has some queries related to a university admission process/ or wants to connect with someone from the university community if there's a more specific question. A more concise and descriptive form of each of the features mentioned here can be placed into each of the button's pop-up.

**Lower Section:** Below the feature buttons, the lower half of the screen features a blank section where users can write feedback and give reviews about their experience using our app. This section is typically essential for gathering insights from users to improve and enhance their experience. Right next to the section is an arrow-shaped button which users can click to submit their written feedback.

## 12. Results of paper prototype testing

Upon testing our paper prototype with a subset of users, we gained valuable feedback that we decided to incorporate into our final design.

### 1. Confusing the AI assistant button's functionality

While using the application, several testers expressed confusion regarding the function of the AI assistant's avatar located in the middle of the navigation bar. This avatar is meant to open up the chat with the AI assistant so that users can ask their queries from it.

To enhance clarity and usability, within the navigation bar, we can implement the following improvements:

- **Increased Visibility:** Increase the size of this button more than the other buttons on the navigation bar, ensuring the avatar is more prominent and easily identifiable.
- **High Contrast Background:** Change the background colour of this specific button to make it stand out further.

Additionally, we will introduce a couple of new features to further bridge the understanding gap and familiarise users with both the button's and the bot's functionalities:

- **Introductory Pop-Up:** Upon their first login, users will be greeted with a pop-up message from the bot on the homepage, detailing its functionality. This will clarify the button's purpose from the start.

- **Proactive Call-to-Action:** Each time the screen for the chat with the bot opens (upon tapping the button), it will display a short, inviting message such as “How Can I Help?” before the user types any query.

These modifications aim to emphasize the AI assistant's accessibility and encourage users to engage with it for assistance.

## 2. Deadline Tracking

In our prototype, while all the deadlines were displayed on a single page, there was no distinct feature separating imminent deadlines from those further away. Consequently, the application failed to instill a sense of urgency among the testers for approaching deadlines. Without actively reading each deadline, it was challenging to discern whether time was running short. This oversight could easily lead to users who aren't consistently vigilant missing critical deadlines for their university applications. To address these issues, we introduce two key features in our final design.

- **Different Color and an Icon:** Deadlines occurring within the next week will now be highlighted in red (Hex Code #B11717) and marked with an exclamation mark icon. This visual differentiation aims to draw the user's attention to these deadlines immediately, ensuring they are noticeable even without detailed reading.
- **Push Notifications:** We will incorporate push notifications within the application, which serve to keep users informed by sending regular reminders directly to their mobile phones, even when the application is not actively in use.

These additions to the final design aim to make the deadlines more conspicuous and ensure the users are well-informed so that they do not miss any deadline and are able to utilize the application just as it was intended.

### **3. Applicant-to-Applicant Interactions**

In our initial application design, we planned for the commenting feature within forums to be exclusively available to Buddies. However, feedback from several testers highlighted the importance of engaging with other applicants and assisting each other as a crucial aspect of enhancing their application process. To address this, we have decided to modify our final design to allow applicants to comment on other applicants' posts. Nonetheless, to ensure that a Buddy's comment stands out among those from applicants, we will differentiate Buddies' comments with a distinct background colour. This distinction will enable the original poster to easily distinguish between responses from a Buddy and those from fellow applicants.

Furthermore, we will maintain the limitation of direct communication to Applicant-to-Buddy interactions, opting not to enable Applicant-to-Applicant direct messaging. This decision is based on feedback from our testers, who indicated that comments are generally sufficient for their needs. Additionally, we aim to maintain the application's strict educational focus. Introducing a chat feature among applicants, who have not undergone the same vetting process as mentors, could raise safety and privacy concerns.

### **4. Icon Clickability**

Since most of the icons are text based, it confuses the users whether they are clickable or not or if they lead to the further options/page. A lot of deadlines are written in the list format where they can be viewed but can not be accessed. It should be made clear if a user can access the application from the deadline list or if they have to go to the university section to apply for admission and scholarships. To mitigate this issue, the final design will incorporate effects such as drop shadow or inner shadow to make the clickable buttons more visible.

## 5. Deadline Tab Heading

One complaint that we got from the testing was the deadline tracker section was very unclear. Even though through an icon we did show that it expands upon clicking, people were still not very clear what it represented especially in the low-fi model.

To fix this, we will add a saved deadlines heading to the section to make it more legible and more intuitive

## 6. Prominency of Apply Button

One thing that we noticed was that the application for universities was not very prominent and most people missed it. Furthermore, there was confusion about what the apply button was going to do. Since the university applications are featured on the website, the button redirects the user to the relevant website.

In order to make the button more prominent, we have decided to make the colour bold so that there is a clear contrast with the rest of the screen and so that people do not miss it.

## 7. User Profile Settings

At first, many users didn't properly identify the purpose of the "settings" icon in the bottom right hand corner of the screen. Initially, when we provided them with the next screen flow, it merely showed the current status of the applicant in terms of percentage - including the current percentages of work he has completed for filling admission/scholarship/financial aid applications. However, some users complained that it was confusing to work with such percentages as it would be harder for the user itself to determine the 'how much actually' the percentages would represent. Secondly, they expressed another concern for keeping track of

which universities they have applied to/ still have to apply as a part of determining their current status. As an improvement to this, we removed our idea of percentages and decided to prefer fractional numbers, while also dedicating a different section for both “Remaining” and “Submitted” applications to universities for users’ ease.

Secondly, the test users were expecting to see other settings (as normally in other apps) like personalising avatar, changing theme and choosing language etc. So, in order to address that, we divided our settings into two further sections - “Your Profile” and “Other Settings”. “Your Profile” would cater to the primary concern of the user’s status, while “Other Settings” would be the secondary settings users would be interested in for personalization of the app. This two-way grouping also ensures users stay organised and systematic in their overall approach.

## **8. Login Screen for Buddys**

During the testing we observed that while we did create a login screen for the user, the interface for the buddy section was missing. If someone wanted to sign up as a buddy, they would have no guidance on how to sign up and they might accidentally sign up as a user. To tackle this, we have incorporated a highlighted button that will take you to a separate registration screen for buddy. For their login, the main screen would be the same but an extra button would be added that would say sign in as buddy.

## **9. Deadline Tracker Action Buttons**

One user reported that the deadline tracker only displays information. It should rather allow the user to view the page of the university or apply to that university directly from the deadline tracking app.

To correct this, we will add an apply now action button the corresponding university name allowing people to directly access the application rather than going to any other screen. By

clicking the deadline other than the apply now button, you will be redirected to the university profile page that is part of our “universities” flow.

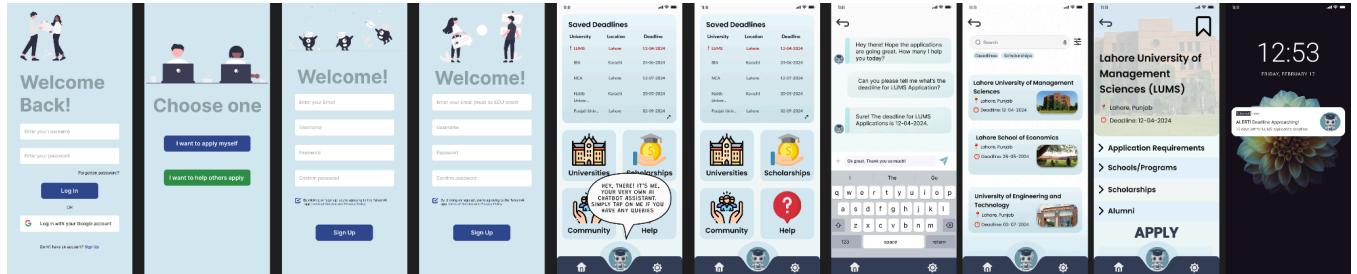
## **10. University Homepage Action Buttons**

On the University homepage, there are dropdown menus that give various informations regarding scholarships, majors, alumni etc. Some testers were confused whether the buttons were clickable or not.

We have decided to make the buttons clickable and to link different screens to that section. For example, if someone clicks on a profile on the Alumni tab in the university profile, the respective alumni or buddy profile will open. Similarly for scholarships etc. To make it more obvious, the clickable links would be a different colour in the hifi model.

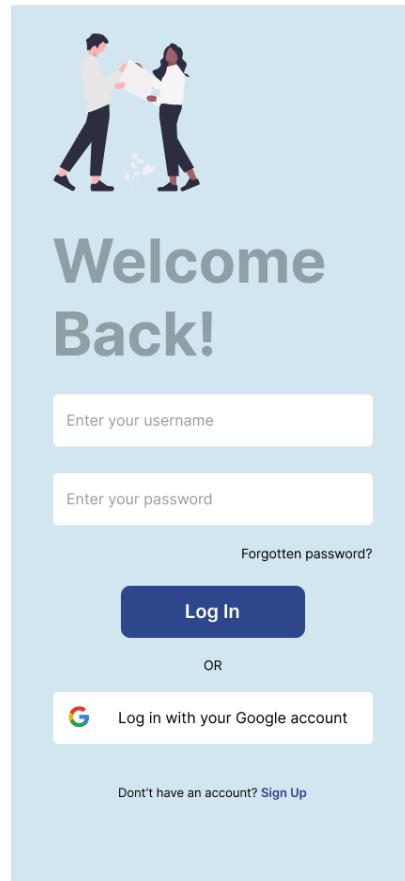
## 13. First draft of the final (hi-fidelity) Interface

Below is the first draft of our final hi-fidelity interface.



### Login

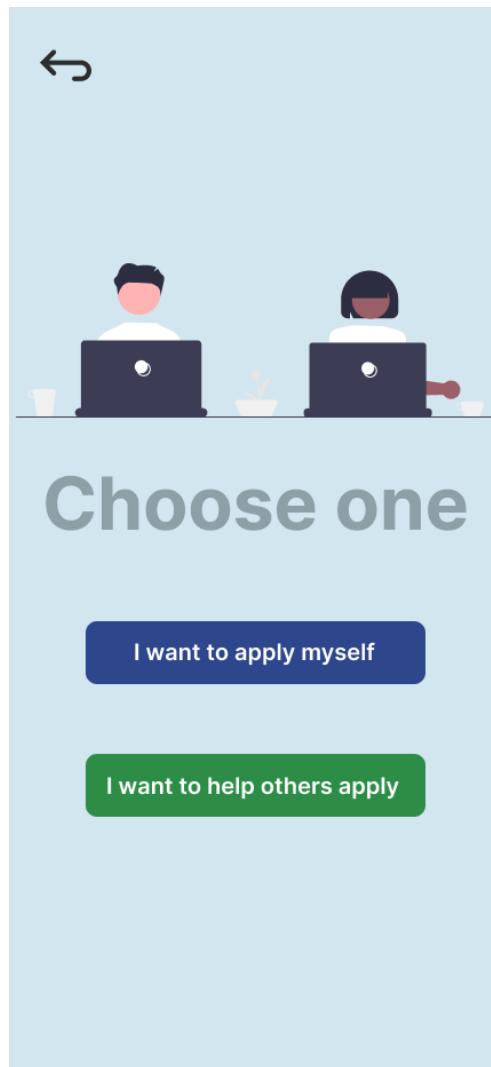
On the first landing page, a user will have to login, by adding their email and password. If their account doesn't exist already, they will need to sign up first.



## Choose Account (Account Registration)

If the user has decided to "Sign Up" in the previous screen, then this screen prompts us, allowing a user to choose whether they want to sign up as a "Student" or a "Buddy." Recognizing that a new user might not understand what each of these two terms means, we decided to label the buttons based on the motivation behind each user's visit.

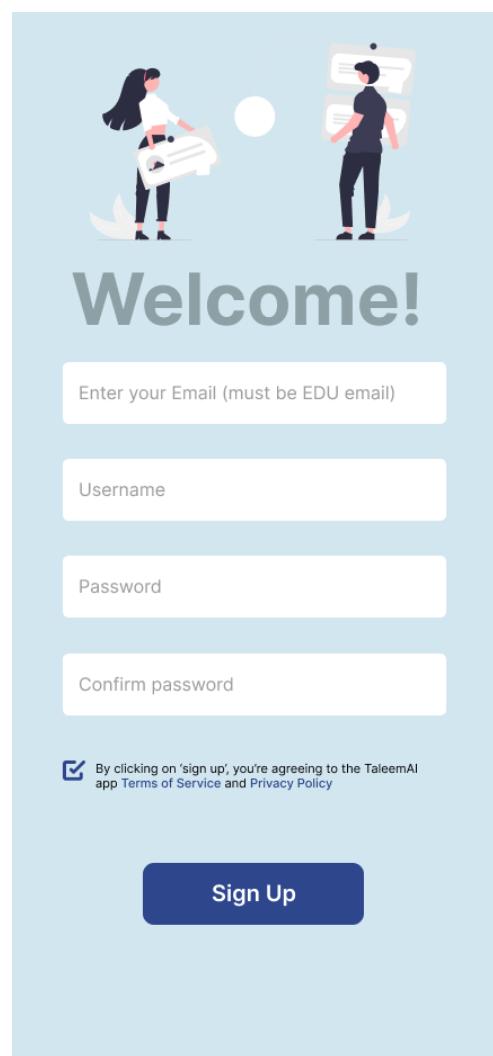
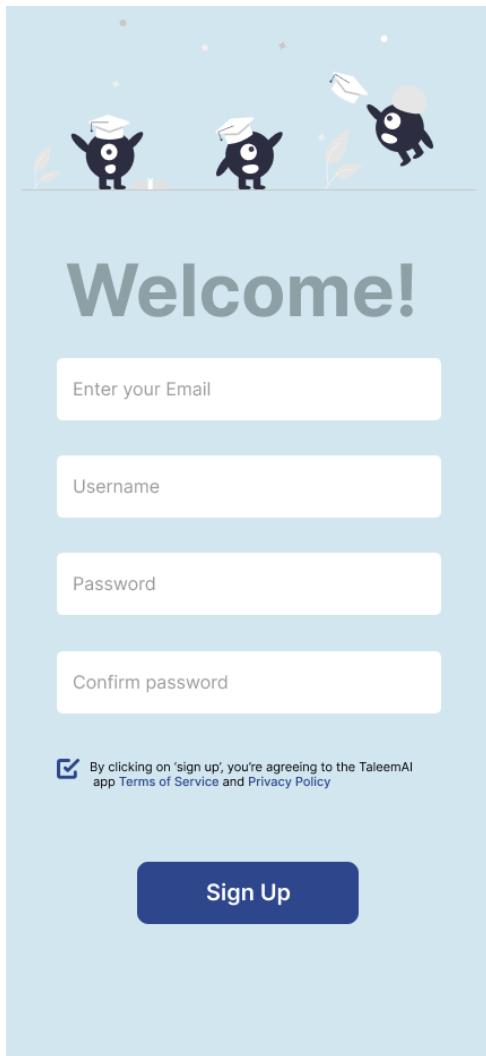
1. Clicking on "I want to apply myself" will redirect you to the Student Registration Page.
2. Clicking on "I want to help others apply" will redirect you to the Buddy Registration Page.



## Sign Up

Based on the choice made on the previous screen, you will be directed to one of two screens. If you choose to apply as a student, you will see the first screen, and if you choose to apply as a Buddy, you will see the second screen.

In order to ensure that students receive the most reliable information possible, Buddies can only sign up using their university-provided email addresses.



## Homepage

The left screen is shown the first time a user logs into the application, while the right screen will be displayed routinely. Based on testers' feedback from the paper prototype testing—where users were unsure of the AI button's functionality—we redesigned the final application. Now, users are informed at the start about the button's purpose, and the button has been made more prominent.

The main homepage displays the deadlines of the universities bookmarked by the user. It also highlights the most upcoming deadline in red to draw the user's attention. By clicking the expand button at the bottom right of the box, a user can view a list of all deadlines.

**Saved Deadlines**

University	Location	Deadline
LUMS	Lahore	<b>12-04-2024</b>
IBA	Karachi	24-06-2024
NCA	Lahore	12-07-2024
Habib Univer...	Karachi	20-05-2024
Punjab Univ...	Lahore	02-09-2024

HEY, THERE! IT'S ME,  
YOUR VERY OWN AI  
CHATBOT ASSISTANT.  
SIMPLY TAP ON ME IF YOU  
HAVE ANY QUERIES

**Community**      **Help**

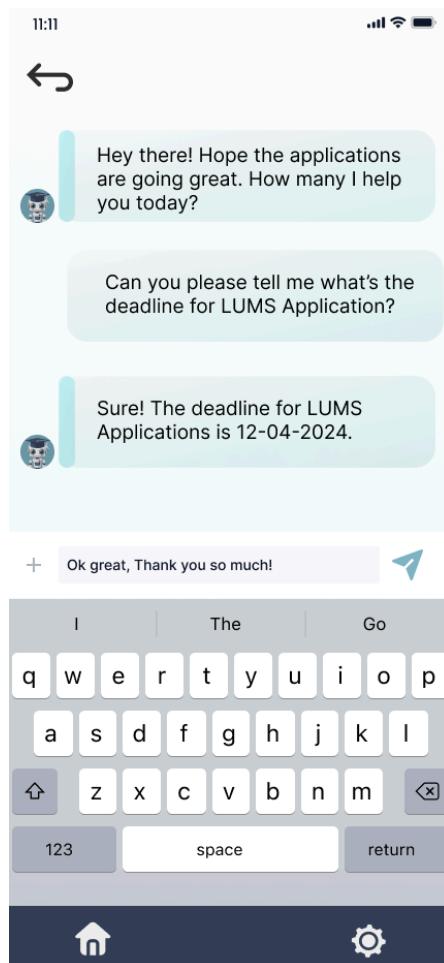
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Habib Univer...	Karachi	20-05-2024
Punjab Univ...	Lahore	02-09-2024

Clicking on the universities, scholarships, community, or help buttons will take the user to the respective pages where they can explore relevant information. A home button, along with the AI avatar "EduMid" and a settings option, will always remain on the screen.

## EduMind - AI Chat

Upon clicking the AI avatar, a user can chat with the AI bot that either suggests questions to brainstorm together or allows a user to ask questions. A user can ask for help with the SOPs, admissions and scholarship details or general counselling questions. For going back to the homescreen, a user can click the home button or a back button will take the user to the most recent page the user has just visited.



## Search University

This page is one of the essential pages in our solution that allows a user to search universities with filters such as deadlines and scholarships. A user can search for a university through the text or a voice command. A user can also sort the query based on the filters available. Some of the universities with the upcoming deadlines will be shown to the user along with their location and the date. Upon clicking, a user can see all the details for that university on the next page of the university profile.



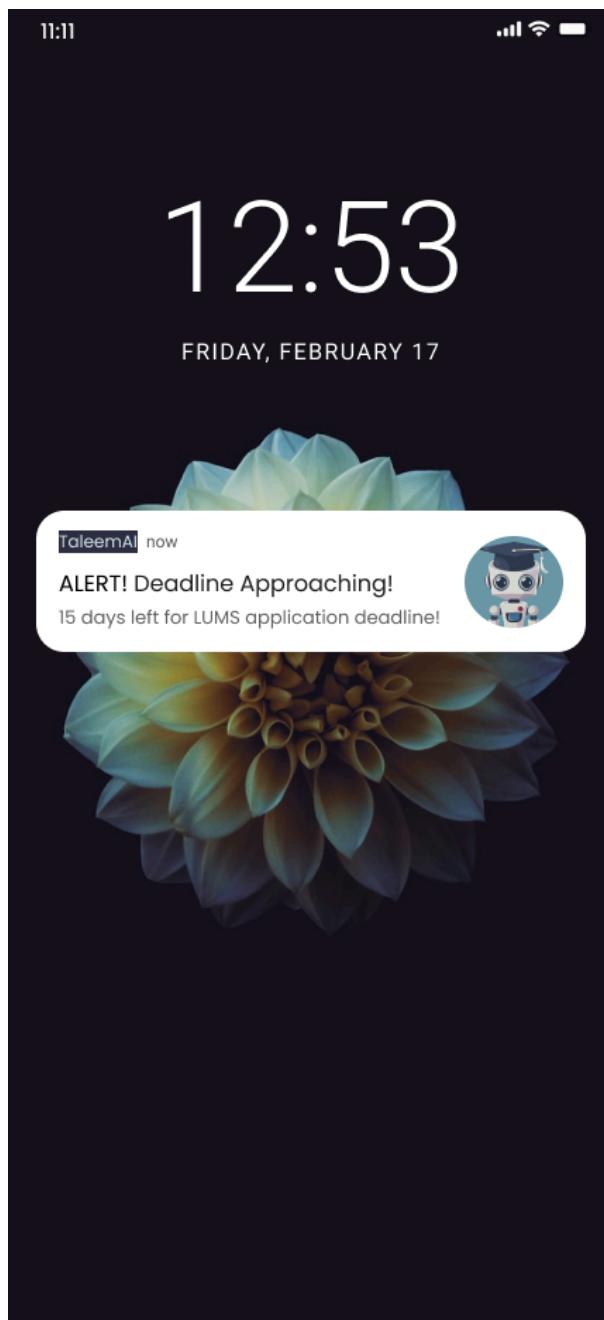
## University Title Card

This shows the title of the university along with its location and the upcoming deadline about the admissions. A user can bookmark the university to add the deadline for reminder and tracking. A user will be able to see four main options such as requirements for the admissions, programs in that university, scholarships awarded and alumni of that university that can be connected with. A user can also click the option to see the further details. Clicking on Apply will take a user to the university profile where they can apply.



## Push Notifications

To remind students of imminent deadlines, especially if they haven't opened the application in a while, the application sends push notifications for the universities that the users have saved to apply to. This is done when the deadline is near to ensure they don't miss out on their applications and are able to apply on time.



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