

# TEAM GLOBETROTTERS



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## Abstract

Our comprehensive report will consist of the crucial stages of the design process: empathise, define, ideate, prototype and testing. It is primarily focussed on investigating the challenges and needs of international university students who are studying/about to study in London to help them ease into living here. Our goal is to help students seamlessly integrate into university life here and enable them to enjoy the city rather than having the typical stressful experience of relocating to a new country.

## Introduction

Our group project is based on ‘An application that supports international students that have just arrived in London’. It is imperative for students to have access to centralised resources that not only address common challenges, but also foster a sense of support and welcome in London. This can increase their overall happiness and wellbeing as well increase the output of their university experience and social life. Despite the plethora of online resources giving advice covering financial, social and accommodation aspects, finding and collating all this advice can sometimes be very difficult for students and it can quickly turn into a time-consuming, mundane activity. Our group aims to alleviate the stress, time and confusion of moving to a new city by streamlining this information gathering process so that international students can focus their energy on the things that matter more to them. We recognise that coming alone to London is not easy and there are many problems which arise which can be easily solved and improved through the right advice. Our guidance covers areas such as financial tips, finding fellow students to socialise and connect with and finding affordable and fun activities in London.

To visualise the stages of our design process more easily, we used Miro (an online collaborative whiteboard) to help us collate all of our findings in a more structured framework. Below is the link to our Miro board:

<https://miro.com/app/board/uXjVNec3Acw=/>

Similarly, we used Figma to create a mock phone application in the prototyping phase. Here is the link:

<https://www.figma.com/file/Yqw39K1NnPebK1WENffMD5/HCI?type=design&node-id=0-1&mode=design&t=XcIwVlc2dYarhJEB-0>

## 1 | Empathise & Define

We have conducted several interviews to gain deeper insights into the needs and experiences of International Students attending university in London. These insights were then translated into empathy maps and the student’s responses were further categorised to gain a comprehensive understanding of their challenges and reasoning. This process led us to create a define problem that needed to be solved.

Our primary stakeholders comprise of current International Students who attend university in London. We deliberately chose not to restrict our user base by nationality or educational level as we wanted our findings to be more comprehensive. By including both Undergraduate and Master's students from diverse academic backgrounds in our dataset, we recognise the unique challenges and needs that may vary across these demographics. The inclusivity of our dataset enables us to develop more impactful strategies that address their collective and individual needs effectively.

The objectives of our interviews with our chosen demographic aligns with the multifaceted challenges they encounter upon arriving in London. Through eliciting stories that encapsulate their initial experiences, we aim to gain valuable insights into the specific challenges they face. Additionally, we seek to unravel the techniques used when navigating the cultural shocks and also delve into the sources they may have used for support during this period of adjustment. By exploring the disjunction between expectations and realities of living in London, our interviews aim to uncover the coping mechanisms students have adopted. A crucial aspect of our approach in our final Interview Guide was to ask questions that organically allow students' to express their genuine feelings, emotions, and opinions without any pressure to talk about certain topics. These findings will be significant when it comes to informing and enhancing the support mechanisms we aim to provide in our project. Our application will give tailored solutions to the needs of international students, ultimately contributing to a smoother transition and a more positive experience in their new academic and cultural environment.

## 1.1 | Interviews

In our team of six, we each conducted five interviews with International Students to uncover their perspectives on attending a London university being an international support. When conducting interviews with our target users, we came up with a structured interview guide in order to gather enough information about their experiences and to have a smooth talk. Our line of questioning probed areas such as cultural adjustment, support and living in London which we believed would be the main overarching themes leading to problems the students may encounter. Within each area, we asked supplementary questions which specifically tried to evoke stories and more diverse thoughts.

Initially, we adhered very closely to the prescribed questions in our guide however as we continued, we quickly realised that our current approach in questioning was leading to very monotonous and robotic conversations which lacked any personal connection with our interviewees. We were almost sticking too closely to the guide and more focussed on receiving the answers rather than provoking more thought from them and following up with anything mentioned.

After receiving our interim feedback, we realised that our questions were too inflexible and slightly directive and not achieving the content we would have liked. In a sense, we were pre-establishing our themes and catering questions to match those themes, which unsurprisingly gave us forced answers along these lines. Therefore, we collectively analysed our first interview guide, as presented on the Miro board, and identified closed questions. For example,

### **Question: How do you feel about socialising with people from different backgrounds?**

This question makes an assumption that they need to feel a specific way about this. It would be better for them to bring up this sensation themselves, by asking about their friends and socialising. It would

be more personal if the participant brings this up themselves, and would potentially feel more natural to them.

### **Question: How did you navigate the financial aspect and budgeting in London?**

This focuses on a particular problem area that ends up becoming one of our themes, rather than allowing the participant to identify what they actually found problematic.

From this analysis, we collectively developed a new interview guide. The revised guide contained more open-ended questions that encouraged more candid conversations with a smoother flow with our interviewees. Navigating the conversation now felt more ‘natural’ according to some of our team mates. We successfully created an environment where interviewees could freely express themselves without feeling directed or influenced by our questions.

#### **1.1.1 | Interview Guide**

##### **Our final Interview Guide:**

<b>Introductory Questions</b>	<p>Hi, how are you today?          Thank you for agreeing to do this interview. Just for the recording I'm going to state my name [Personal Introduction] and I am doing this interview as part of my coursework for the human-computer interaction module.</p> <p>Do I have your permission to record this interview and quote you directly using a pseudonym for research purposes?</p> <p>Please could you state your name for the recording and introduce yourself a little bit? (name, university, course, year, where are they from...)</p>	<p><b>Introduce yourself and make sure the interviewee is aware of the project and the purpose behind the interview</b></p> <p><b>Ensure you have consent before proceeding with the interview and recording.</b></p> <p><b>Building a rapport with the interviewee is also important and understanding their demographic.</b></p>
	<p>Could you give me a brief overview of your experience moving to London for the first time?          What were your first impressions when you arrived in London?          How did these change after living here for a few months?</p>	<p>Get acquainted with the interviewee's story. This will allow us to identify any initial difficulties that stood out to the interviewee, whether their initial feelings towards London were positive or negative and the reasons behind this.</p>
	<p>What was the biggest challenge you faced when adapting to life in London?          What was the biggest cultural shock/ biggest difference compared to your home country? What techniques did you use to help overcome these challenges or differences?</p>	<p>This will allow us to identify the main challenges faced by international students, and listening to how they overcame these may help us pave the way for potential solutions.</p>
<b>Evoking Stories</b>	<p>To what extent did your university help you with the process of moving to London?          How did you feel about asking for help from your university?          Could you tell me about a time you interacted with your university to solve a problem?</p> <p>Can you tell me a bit more about the process of finding somewhere to live in London?          Can you tell me about your experience finding your way around London?          How did you find your first few days on campus?</p> <p>Can you tell me about some of your experiences meeting people in London?          Where did you find it easiest to meet people/ what strategies did you use?          Could you tell me how you met most of your friends?</p>	<p>These questions will allow us to explore further the role of the university in supporting international students when they first arrive in London. These questions have been edited to allow the participant to be more open and not corner them into talking about or feeling anything in particular.</p> <p>Giving the student a chance to share their experience with finding accommodation will allow us to discover how easy/difficult this process was, and what support they receive in this area as well as any major difficulties and what strategies they used to solve these. These questions are now more generic answers, allowing for the participant to identify issues, without specifically focusing them to talk about anything specific.</p> <p>These questions are now more open and allow the participant to share any experiences that might come to mind regarding meeting people in London.</p>
	<p>Have you had any interactions with support services or network groups aimed at international students? If so could you share your experiences with them?</p>	<p>Instead of asking specifically about the financial aspect and implying that may be a difficulty, this question now allows for the participant to talk broadly about any surprises or differences that they have identified.</p>
<b>Evoking Emotions</b>	<p>How did your expectations of London compare with the reality?          Did you ever feel treated differently in London compared to back home?          How did you find keeping a balance between your social and academic life?          What would you say are the positive and negative aspects of attending a London university?          Is there anything about London you especially dislike?          How long it take you to feel properly adjusted to living in London?          Was there anything about London you found particularly challenging compared to back home?          How did you feel being in a new country?</p>	<p>Diving deeper into their emotions around these subjects will help us to further understand the ways they were feeling when they first arrived in London, how they dealt with this and hopefully how they can be supported to do so. By asking about emotions, we will hopefully build a deeper personal relationship with the interviewee and they will feel comfortable to share their thoughts and feelings with us.</p> <p>These questions have been edited and added to allow an opportunity for the participant to talk generally about any issues they might have, anything they found easy or what their feelings are around any topics they may choose to talk about.</p>
<b>Conclusion</b>	<p>If you were given a choice now, would you still choose a London university? Why/ why not?          What do you think could have been done to make your London experience better?          Would you consider moving permanently to London? Why/why not?          Do you have any final comments or questions?          Thank you for taking the time to do this interview. Your answers will be very useful for completing our project.</p>	<p>These final questions will allow the interviewee to expand on any of their previous points or anything that they may have forgotten, and will leave a good impression by showing gratitude.</p>

## 1.2 | Analysis

To ensure a holistic analysis, we broke it down into four different parts:

1. Initial Categorisation & Interview Codes
2. Empathy Maps & Feels Inferences
3. Demographics
4. Themes

### 1.2.1 | Initial Categorisation & Interview Codes

As part of our Thematic Analysis, we identified patterns in the data gathered from the 30 interviews we conducted in total. Initially, we each familiarised ourselves with the transcripts and then drew out quotes from this. Then we assigned codes (broad categories) under which the quote fell under in summary using the same codebook that we had all agreed upon. We had gathered key points and categorised them, and we saw a split in two main sections: University Life and External. Within this, we then created another level of codes; 6 under External and 4 under University Life; this is what our collated codebook consisted of. Alongside our codes, we thought it would be beneficial to split each point into Positives, Neutrals, Negatives and Suggestions, as displayed on our Miro board. This would allow us to quickly see the spread of positive versus negative comments in each interview which also naturally gave us a good indication of how the interviewee felt and their overall experience moving to London.

However a big flaw that we realised from this approach, that was also further highlighted in our interim feedback, was that by everyone using the same codebook we were again seemingly forcing categories and making our quotes conform to the codes we had chosen. Therefore we went back and individually created our own codebooks and changed the coding for each of our own interviewee quotes. This now meant that we were no longer losing out on the uniqueness from each interview and not overlooking any particular relevant categories.

Naturally there may have been some biases in creating our own codebooks at this point as we already knew what kind of categories should be appearing in our codebooks but we attempted to ignore our previous insights and start from scratch. We then thought of consolidating our codebooks after everyone had created their own but realised as we would not be able to further conduct more interviews there would be no point, and for the same reasons as before, we could lose the individuality of each interviewee. Here is an example of a team member's codebook.



Coding the quotes is an exhaustive process and team members often found that some quotes overlapped in their categories whilst others were exclusively under one category. If anyone was unsure of which codes to assign to a quote, it was placed in a separate list and then reviewed and further discussed by other team members.

Here are examples of some quotes and the codes to which they were assigned:

**“Before moving to the UK, in Italy I pursued my undergraduate degree so you have a long period of seminars and lessons and then you have like one month or two months of only exams where you have to concentrate on different exams. All the things are concentrated during that period. So it was quite stressful but like in the UK you have courseworks and of course you do have exams as well. But I think the organisation is better and the workload is well spread through the year which was surprising but actually a nice change.”**

In this case, this quote was assigned two categories: ‘Cultural Shocks’ and ‘Academic Life’ as the interviewee explains the surprising contrast in education system between home and the UK. In our table we put it under the Positive/Useful row.

**“I definitely find myself thinking and being stressed about my finances quite a bit and I very much do wish that there was a bit more support in that department, because obviously as an international student, I have to deal with so many extra fees that have already been greatly, greatly costing, especially coming from a family that isn't the most well off.”**

This quote was assigned ‘Support Received’ and ‘Financial Difficulties’ as the interviewee clearly talks about their struggle in being able to finance themselves as an international student as well as the support they would like to receive from the university to aid them in this stressful experience. It was then placed in the Negatives/Challenges row as this was a difficulty the interviewee faced.

**“Navigating public transport I would say was kind of tricky to get into...I find buses to be quite a frustrating source to work with, because the tube lists every single station it will go to, but the thing is with buses you kind of have to research that yourself and I struggled with that a bit.”**

This quote was coded under ‘Transport’ and put in the challenges row due to the struggle of navigating buses. This seemed to be a recurring problem for a few interviewees.

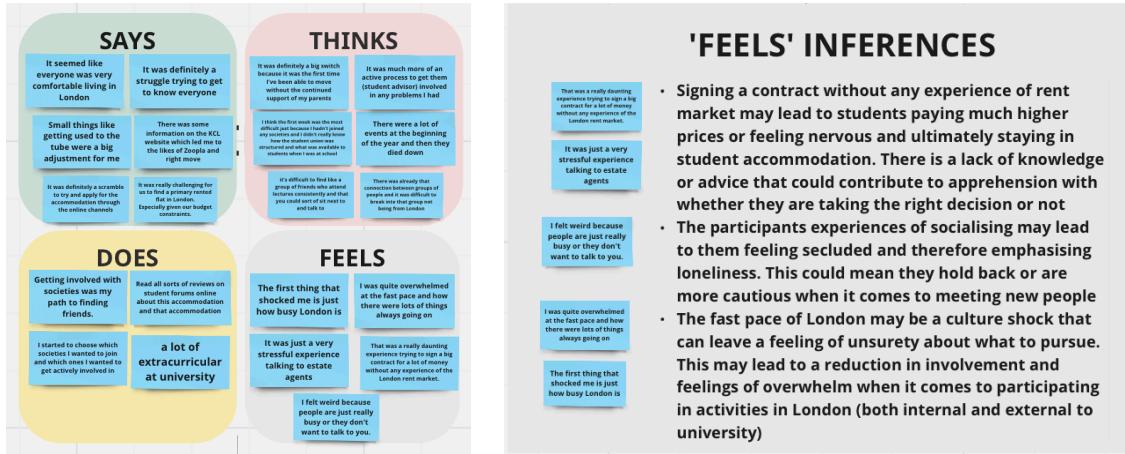
### 1.2.2 | Empathy Maps

After analysing the quotes from our interviews and coding them, our team wanted to further evaluate what each of our interviewees were thinking, feeling, saying and doing regarding their experience of moving to London as an international student. During this phase, we decided to follow the best practice of arranging each interviewees quotes into empathy maps containing these 4 sections. We agreed that each team member would produce 5 empathy maps with their respective interviewees as this would ensure a more exhaustive understanding on a personal level and allow us to really consider the perspectives of international students.

As mentioned in our interim feedback, we made sure to colour code the empathy maps to the relevant interviewee to allow for easier visual recognition of the connection between the two. Furthermore to add more depth of understanding about our interviewees’ experiences, we made sure to make insights

and inferences from what they felt. This was crucial as this emotional layer reveals challenges and unspoken needs that may not always be explicitly stated. Deciphering their emotional cues meant we could address the more subtle aspects of their experiences.

Here is a closer look at an empathy map with its subsequent inferences on the feels section:



### 1.2.3 | Demographics

Our overarching goal is to design a helpful and intuitive application and to do this, we recognise the importance of understanding the background of our primary stakeholders.. Therefore we chose to analyse the demographics of our participants and understand who the specific users are so we can align our application to their needs and ensure we are aiming the tools at the right people. Our analysis covers three key groups: gender, continent, university. Utilising pie charts for better visual representation of the whole population, we managed to clearly depict the difference in backgrounds of our interviewees.

Examining the continent split chart shows that our participants are predominantly from Asia. It should be acknowledged that this domination may introduce biases in the data which could lead our insights to be particularly focussed towards the experience of international students from Asia (70%) and perhaps overlooking those from other continents. However, this may be a real-world representation of the university's overall student demographics as the prevalence of interviewees from Asia suggests that there may just be a bigger proportion of international students studying from there.

Furthermore, from the university split chart, there is naturally a particular focus on the participants from King's College London (73%) and the three other main universities in London (University College London, Imperial College London and the London School of Economics). However there are no other participants from other universities which shows the effects of our convenience recruitment of interviewees and also introduces a potential bias in favour of these universities. This could lead to us possibly overlooking the needs and challenges faced by other international students attending the many other universities in London. This is something we have addressed in our design of the application by ensuring that users are presented with more options of universities in London to ensure inclusivity. A broader contribution from other universities could lead to more of a tailored demographic for international students as a whole. However it must be mentioned that there are the

four main universities in London which most likely attract the biggest proportion of international students in the city.

Finally from the gender split chart, we can identify that nearly  $\frac{2}{3}$  of the research was conducted on female participants which may make the gathered data slightly more biased to this group. However it is to be noted that this does align with the student proportions of male/females (as per the UCAS website) of students at King's College London, which as aforementioned, is where most of our participants were studying at. Only two genders are being considered here as none of our interviewees identified themselves as being in another gender group.

#### 1.2.4 | Themes

When deciding on our themes, we had many brainstorming sessions as a team, where we attempted to combine our codebooks into 3-5 different themes to best represent the struggles of our international students. We referenced the framework of Virginia Braun's "Successful Qualitative Research," which provides a structured approach to understanding and developing themes from our interviewees' stories. This approach helped us when delving into the multitude of experiences and perspectives shared by international students, we were able to reveal the central messages that emerged. We eventually decided on 5 different themes that would best represent our students: Connecting with others, Transportation, Financial, Accommodation and Academic/Opportunities. We all came up with our own themes before coming together as a team, and we decided that these 5 would best represent a combination of what we all came up with.

##### **Theme 1 - Connecting with Others**

*Various aspects of international students' social experiences and challenges when living and studying in London encompass cultural adaptation, communication, emotional well-being, and community engagement.*

Focus: Language Barriers, Connections with others, Homesickness, Cultural Adaptation, Convenience of living in Student Accommodation

###### 1. Language Barriers

We discovered that international students struggled with understanding the language, especially different English accents and the speed at which people talked, and that this was often a barrier to them socialising, forming connections and friendships. It generally seemed that this got better with time and practice, and that these students were seeking more opportunities to communicate to practise their language, or someone to help them with understanding certain situations.

###### 2. Homesickness

We discovered that this was a very common feeling among our interviewees due to being a long distance away from their families for an extended period of time. This feeling was only alleviated by making friends and connections to help settle them into London.

###### 3. Convenience of Student Accommodation

Some students commented that living in student accommodation helped with these feelings as they were part of a community, and the support provided by university accommodation and services helped with their mental wellbeing. Others mentioned that living in a studio rather than a flat enhanced these feelings of isolation and homesickness.

Generally, socialising and connecting with people in London is challenging for international students, notably homesickness due to being far from familiar support networks and the difficulty in establishing new connections in a new environment. The language barrier and adjusting to London's fast-paced life significantly affect their emotional well-being and ability to integrate into the community and adapt culturally. The need for supportive networks to assist in cultural adaptation and building relationships is crucial for their successful transition to life in London. Students are actively seeking supportive networks and platforms that can ease their transition into London's diverse cultural landscape, highlighting the need for resources that assist in building relationships, understanding local customs, and finding relaxing and social activities. This combined experience highlights the importance of providing support and guidance to help international students feel more at home and engage confidently with the community in their new surroundings.

## **Theme 2 - Transportation**

*A common theme was that students struggled with transportation and getting around the city, whether that be finding places, using the bus or tube or the safety of travelling alone at night.*

Focus: Safety of travelling, Strikes/Delays, Convenience of London's transport, Struggles with public transportation

### 1. Safety of travelling

We discovered that many of our participants, especially the female ones, felt scared of walking or travelling alone in the city at night, and that this was a shock compared to the safety they felt in their own countries. Some of them had even experiences with attempted robbery.

### 2. Strikes/Delays

Strikes and delays in the city's transportation services appeared to create uncertainty and frustration for students, affecting daily commutes and overall adaptation.

### 3. Convenience of London's Transport

The convenience of London's transportation emerged as a positive theme in our interviews. They found it to be surprisingly well-developed and efficient, exceeding their expectations and what they were generally used to. It was exceptionally useful for navigating the city and appeared to play a crucial role in their daily lives.

### 4. Struggles with public transportation

Conversely, the struggles of public transport emerged as a notable theme. Students found the system, although robust, to be challenging to navigate, frequently disrupted, and navigating for those in a new language environment proved challenging. Specific challenges included buses and knowing how/when to use Oyster Cards.

Although eventually international students would admit the convenience of London's transportation, they found the first time taking the public transport to find the right direction to go to the objective place, using the public transportation such as bus, tube and train was difficult and confusing, especially the route from airport to central London. They mostly had some experience of transportation strikes which made them feel anxious, unexpected, frustrated because they did not have any related experience before and did not know how to deal with this kind of situation. They wished they could have had strike information in advance to avoid panic. Moreover, they felt unsafe and needed extra security when travelling alone as a female in the midnight compared to their home country which might mean the improvement of the safety when travelling in London is necessary.

### **Theme 3 - Financial**

*Regarding the financial aspects for international students living in London, they particularly feel stressed when budgeting because of the high cost of living in London.*

Focus: Budgeting as London is expensive, High transportation costs, High rental costs

#### 1. Budgeting as London is expensive

Budgeting in London proved to be a considerable challenge for international students, with many expressing surprise at the cost being significantly higher compared to their home countries. Essentials such as food were found to be more expensive, and the lack of awareness of the high costs of eating and going out when they first arrived led to students being in a difficult situation financially as they spent more time in London.

#### 2. High transportation costs

High costs associated with London's public transport also emerged as a financial challenges, and affording the bus or the tube proved to be a significant challenge for our students, with some even commenting that they walked rather than pay for transport

#### 3. High rental costs

Another financial burden came from rental costs, prompting some students to settle for flats further away from their campus and central London due to not being able to afford anything more central. Paying taxes and bills also proved to add to this challenge

Many students who just arrived in London would find that the overall cost is much more expensive than they were in their home countries, even higher than they had expected. They felt quite stressed because of the cost of living in London and lack of experience on budgeting. Therefore, they needed some financial advice and money-saving tips to alleviate the stress of the high cost of living in London.

### **Theme 4 - Accommodation**

*Due to a lack of support and information provided from universities, advocating for improved support and information from universities, particularly regarding accommodation and housing for international students.*

Focus: Limited budget to find accommodation, Convenience of university provided student accommodation, Process of finding accommodation, Lack of support and guidance from university

1. Limited budget to find accommodation

This links to the “high rental costs” in the financial section, echoing the point that due to constant rising costs, students found it hard to find a property to live in where they could afford rent.

2. Convenience of university provided student accommodation

We found that generally students had positive things to say about student accommodation that they lived in first year - much of the administration process was done for them by the university, and paying bills etc wasn’t something they ever had to think about, which helped to ease them into London, as well as creating a sense of community(which links to the “Connecting with others” theme)

3. Process of finding accommodation

Many students expressed discontent at the process of finding somewhere to live(private renting) with this being described as a “scramble” and “exhausting” by two different students. They seemed unsure of where to even start looking for accommodation, or what websites were reputable.

4. Lack of support and guidance from university

We also discovered that a massive factor in contributing to the students' difficulties surrounding accommodation was the lack of any help given from their university. Many seemed to have discovered things on their own, such as that contracts were 12 months standard, and were unfamiliar with a lot of the documentation due to no one explaining to them how the whole process works.

Many students found that universities often do not provide enough support when they first join which makes them feel challenged and stressed because they have no experience in this new city and need to find things on their own when looking at accommodation due to the high rental prices in London. Advocating for improved professional support and information that is specifically aimed at international students from universities, particularly regarding accommodation and housing for international students would be useful. This is because there was less information about renting private houses and private student accommodations rather than universities’ student accommodations. They felt it was difficult due to lack of experience and unfamiliarity of UK regulations, and while they expressed content about the convenience of student accommodations, these are generally only provided in first year and the process of finding accommodation later on proved to be incredibly stressful and difficult, and students expressed a need for guidance, perhaps from someone who has already been through the process.

### **Theme 5 - Academics and Opportunities**

*International students face the challenge of adapting to diverse teaching styles and the requirement for extensive self-study, compounded by the difficulties of studying in a non-native language, English. However they also realise the benefits of studying in London. Student's praise the city for its range of opportunities, both job and recreational, but seem to struggle with finding them due bad advertisement.*

Focus: Finding job opportunities is difficult, Finding things to do in London is difficult, London has lots of opportunities compared to other places, Challenges of learning in a different language, Adapting to teach styles and extensive self study requirements

1. Finding job opportunities is difficult

International students expressed difficulties when job searching, notably with the process of applying and where to go to find jobs. They wished that they could receive advice, perhaps from their university, about the process of applying and finding a job.

2. Finding things to do in London is difficult

We discovered that international students, while acknowledging the plethora of activities and things to do and see in London, found it difficult to find activities to do and especially places to go, with some even expressing that this proved a greater challenge than actually navigating to the places themselves. It should be noted that the students interviewed used a combination of their own research and proactivity as well as social media adverts to find places to go, but commented that most of this was through their own initiative and meeting people who told them what places were good.

3. London has lots of opportunities compared to other places

A positive motif through our interviews was the scale and diversity of London. Despite the difficulties faced by students in finding activities, they were generally in consensus that the

Based on our previous interim feedback and the amount of opportunities, both academic and recreational, offered by London is unmatched and they are able to undertake activities that would not have been available to them otherwise.

4. Challenges of learning in a different language

Linking to the “Connecting with Others” theme, students expressed particular struggle with adapting to their academic life, noting that with this being in a different language to what they were used to, this took more time to get used to than it perhaps would for home students.

5. Adapting to teaching styles and extensive self study requirements

We found that students found it difficult to balance their social and academic lives with the pressures and workload of university, and budgeting their time and managing stress and not having enough time for themselves was something that impacted their mental wellbeing

London is a big city with diversity and has a lot of different activities and opportunities including recreational activities and job opportunities. However, sometimes students who just arrived in London might have difficulty to find the right ones to join, and the reason for this would be bad advertisement or lack of information and experience. It should be noted also that international students found balancing their social and academic lives, due to the pressures of adapting to new teaching styles in a different language, and extensive requirements for self studying away from class time, in general students felt very unsupported in dealing with these pressures combined with their recreational lives.

## 1.3 | Personas

We combined the common struggles resonating within similar characters of our interviewees to create three personas that encapsulate their feelings and suggestions, as after analysing all our themes, we had a much clearer idea of the various difficulties faced.

### 1.3.1 | Persona 1 - Andrew Wei. The “homesick” and “stressed” student

“I didn't really know how to budget myself because obviously my parents would always pay for everything”

“I'm like a home person. I like being with my family. So when I first came here, I would cry so much. Yeah, I'll be so homesick.”

“I think balancing school and my life together is very hard because I'm all alone by myself in the UK and my parents are back in their home country in Hong Kong, so I feel like just being alone myself is quite difficult.”

### 1.3.2 | Persona 2 - Rebecca Smith. The “Unlucky” but “determined” student

Rebecca was created during our SGT when we were analysing the “Accommodation” theme and creating insights from this. We also took inspiration from part of the “Academics and Opportunities” theme, notably that surrounding finding jobs in London. We were attempting to analyse the difficulties faced by international students when it came to finding accommodation, and decided that struggling to find a flat was a problem that was most representative of our international students, so we decided to make this one of Rebecca's key struggles. The overwhelming sentiment from our interviewees was that living in student accommodation was preferable to having to deal with the admin that comes from private renting, and that the process of searching for somewhere was incredibly stressful, so these feelings are shown by Rebecca's situation. Her difficulties are also exasperated by the fact she is living with someone she doesn't get along with well; we established through analysis of quotes and themes that a sense of community and belonging especially with those in the same accommodation was very important to these students, therefore Rebecca is suffering by not having this and she is representative of the students who did not get lucky when it came to their living situation. This is further shown by the fact that she lived in a studio in her first year and found this to be somewhat isolating, a comment that was made by several of our interviewees that they wished they knew before moving to London.

Other key aspects of Rebecca's character include her determination to find jobs and opportunities for when she graduates. This links to the “Financial” theme somewhat, as her fears of not being able to afford to stay in London after she completes her degree, are caused by not knowing where to go to look for graduate job opportunities, cementing a clear link between these themes. She would love to talk to someone who has been through the process already, or have access to a centralised hub where she can view and apply for all the available opportunities. These feelings were inspired by the demographic of interviewees who were aware of the massive variety of options that London had to offer when it came to jobs, but were just confused about where to start looking for these, and were in need of someone to point them in the right direction or give advice about the application process.

#### **Quotes that supported the creation of this character:**

"It hits you when you first look for a place to live, because the rent is just ridiculous, especially for what you're getting. You know you're paying £300 a week for a 14 square metre room. It just sounds a bit ridiculous from where I'm from."

"I just think there should have been more of an introduction to how living in accommodation works outside of first year and student accommodation"

"More information about how to find a job. I don't know the process of it."

"It's quite a big mistake living in the studio, I didn't have the opportunity to hang out with and talk with people often."

"For international students it's kind of hard to get the job, especially if you are absolutely from overseas."

"The market is crazy fast here, like the property might be up last week and the next week it's gone. So I think that's probably the most difficult one is that the turnover rate is super quick that you really have to make her call really quickly, which makes it really difficult to compare and stuff, so that's probably the main thing."

### 1.3.2 | Persona 3 - Camille Dubois. The “disconnected” student

Camille was created later in our project when we felt the need to focus more on the social and language side of the struggles of international students. Camille is an international student from Paris who is experiencing difficulties with finding a community or group of friends who share her interests and with whom she can do fun recreational activities. She struggles to connect with people because of cultural and language differences. An overwhelming amount of our interviewees commented on the language barrier as being a huge factor that hindered their acclimatisation into London, especially into the social scene, and these struggles are reflected through Camille. Various comments were made about accents especially presenting a challenge in both social and academic settings, so we made this something that Camille struggles with. We also put the feeling that London has so many fun activities to offer into Camille’s attitude towards the place, with her reservations being that of not knowing where to find all of these things to do, and the need for a centralised resource hub, which was commonly expressed.

The “Transportation” theme was also made into a major part of Camille’s character. Our female students expressed a fear of the safety of travelling alone at night, and this is something Camille experiences, alongside a strong dislike for public transport methods such as the tube due to their price and other factors such as bad hygiene. While a lot of our interviewees acknowledged the benefits of London transport, stating it was much more developed than their home countries, we felt it was important to recognise the section of our demographic that showed a strong dislike for transport, claiming the inconvenience of strikes, delays and the financial aspect of it. The lack of knowledge about different transportation methods like buses is also reflected in Camille.

#### **Quotes that supported the creation of this character:**

"I think accent is a big part of the challenging one when living in UK"

"I wish that there was a better timeline of the events that were taking place in London 100%, so obviously through the events that I've been to have been through my own research and through being active in terms of finding things"

“English is not everyone's first language, and communicating with non-native speakers requires more patience”

“Some lines of the London Underground are very old and noisy. The hygiene situation is also worrying.”

“Dealing with delays and maintenance work can disrupt plans. It would be great if there were more timely updates or alternative route suggestions when there are disruptions”

## 1.4 | Problem Statements

The formulation of problem statements ensued from the deductions previously established. It allowed us to precisely define the key challenges and allow a shared, mutual understanding about our focal points amongst the team. These statements acted as a guide to steer the design process into actually solving students' problems rather than keeping more abstract ideas in mind.

### 1.4.1 | Creating Problem Statements

To structure our thoughts and consolidate key points from the personas, we originally created six prototype statements using the four point format of “**We met...** **We discovered...** **We wonder if...** **We aim to...**”. Coming up with these statements proved to be relatively straightforward given our collective familiarity with the challenges that international students faced, however we found that a few of these statements were related. After much debate within the team, we systematically grouped the statements into a number of categories in order to streamline further analysis. Eventually, we proposed a total of three statements in the four point format, each one corresponding to the main points one of the personas. This categorisation would not only help us to focus our research, but also enhance the efficiency of subsequent research procedures.

Here is an example of one of our three prototype statements in the four point format:

**We met:** Andrew Wei, an international student in London

**We discovered:** Andrew is overwhelmed by the significant burden of tuition fees, rent, and living expenses and managing these financial obligations is a constant and overwhelming pressure for him. He is also overwhelmed by his academic responsibilities and this is affecting his mental health.

**We wonder if:** Available financial aid or scholarship options are insufficient or not easily accessible for international students like Andrew, and they do not cover the rising cost of living in London. Students like Andrew would benefit from some kind of budgeting tracking or advice. Alleviating academic pressures or at least helping manage these would increase the mental wellbeing of these students.

**We aim to:** Address the pressing financial concerns faced by international students like Andrew in London by exploring viable solutions to alleviate the financial burdens, potentially through accessible scholarships, or increased employment opportunities for international students, as well as budgeting solutions. Provide some form of stress relief and mental health support for those struggling with their workload or any other factors.

We then further consolidated each prototype statement to produce three descriptive paragraphs which succinctly described the problems faced by each persona. This gave us the benefit of a more

streamlined presentation and a more cohesive narrative which makes it easier to understand the overarching challenges faced by international students like Andrew, Rebecca and Camille.

Here are our three problem statements and the personas they were inspired by:

**Problem Statement 1 (inspired by Andrew - the ‘homesick’ and ‘stressed’ student):**

*International students struggle with the significant burden of tuition fees, rent and living expenses leading to overwhelming financial pressure impacting the quality of their time in London. They also struggle balancing academic and social aspects of life. Our solution should therefore aim to address these pressing financial concerns, and try and alleviate the stress of academics on students so they can enjoy their free time more.*

**Problem Statement 2 (inspired by Rebecca - the ‘unlucky’ but ‘determined’ student):**

*International students find navigating London’s housing and job markets difficult, especially seeking efficient platforms for finding roommates and there is a gap in guidance from universities or fellow students to discover student-friendly flat hunting websites and resources about paying bills and the specific challenges faced by international students when renting as well as finding jobs in this country. Our solution should aim to provide a plethora of resources and tools to help make this process easier and painless.*

**Problem Statement 3 (inspired by Camille - the ‘disconnected’ student):**

*International students struggle with difficulties in connecting with individuals who share similar interests primarily due to cultural and language barriers and different accents. Forming meaningful relationships therefore becomes a challenge and anxiety can hinder the ability to build connections. To address these challenges, we aim to recognise the complex nature of cultural and language barriers, and implement strategies to alleviate these to create a more understanding and inclusive social environment.*

#### 1.4.2 | Final Problem Statement

Based on the interim feedback and data provided from our interviewees, we understood that the original final problem statement was not comprehensive enough and failed to cover the pain points of international students sufficiently. We recognise this was due to our team deciding on a final problem statement by picking one of our three consolidated problem statements above based on our personas and adapting it further. By doing this, we introduced a critical issue in our approach, as through selecting one of our consolidated statements, we were restricting our demographic and not catering to students who would fall under the other two persona profiles. This would mean that not all of our users would benefit from our application and we would not be able to aid as many people which greatly hinders our goal. We had originally chosen to concentrate on Camille’s inspired problem statement surrounding socialising. As a team, we had agreed that this was both powerful and urgent and that socialising stood out for not only its immediate relevance when first arriving in London, but also for its profound impact on students’ mental health and academic success.

However, realising the issues with this, we decided to take a more inclusive approach and move from focussing on a singular problem statement to consolidating all three persona based problem statements into one. We managed to bring together all the unique aspects that each problem statement identified.

This decision is based on the fact that the challenges faced by international students in London are always interconnected. Thus in order to provide a more exhaustive solution, we synthesised the problem statements and achieved our final version of our problem statement which we all agreed upon.

Our final problem statement we reached is as follows:

*We discovered that international students commonly face challenges when dealing with the organisational and administrative aspects of moving to London. Factors like accommodation, finances, transportation and finding ways to meet people can be overwhelmingly stressful for the majority of students. We therefore aim to introduce a solution to streamline this process of gathering resources and centralising information in a comprehensive hub, which will provide students with the tools and resources for a smoother transition and a more positive start to their life in London.*

Our final problem statement coincides with the recurring strong themes of lack of support/resources that causes problems such as inability to socialise, feeling lonely and handling financial and academic induced stress. From looking at our interviewee quotes, we believe we have tackled these major problems by suggesting this centralised hub and that our proposed solution will provide students with a more organised and unified way of accessing the study resources, which would help minimise the problems they encounter when studying without readily available internet access. This could potentially help the students feel more in control of their workload and reduce their stress levels, allowing them to focus on their studies and lead a more enriching social life.

## 1.5 | Interim Feedback Change Log

After our Interim Feedback, we incorporated all of the suggestions we were given on how we could improve our coursework. Some changes have already been aforementioned but here is a log summary of all of what we took on board and how this improved our work.

Changes	Impact
Interview Guide: Analyse the closed questions and improve them	This means we're not forcing categories and the direction of conversation on the interviewee, leading to a more organic flowing conversation.
Switching the order of our interview codes and empathy maps	This helps improve the flow of our work and helps easier understanding of our thought process and analysis of the quotes into empathy maps.
Correlating the colours from interview quotes and empathy maps	This change increased the ease of visual connection between the two and improved the flow of this phase.
Adding codebooks for each person	By doing this, we avoided forcing categories on each team member's quotes and this allowed us to keep the uniqueness of some of our

	interviewees and not overlook their relevant categories.
Changed our final problem statement	Instead of choosing one problem statement which was based on one persona, we consolidated all three of them to create a better problem statement that was more inclusive to every demographic and type of international student.
Improving personas	We made the icons of our personas more personalised by using Bitmojis and adding interview quotes. This reinforced the character of the personas, making it more relatable to a greater number of students.

## 2 | Ideate

After analysing the data and defining our problems, we moved on to using different brainstorming techniques in order to solve our problem statement.

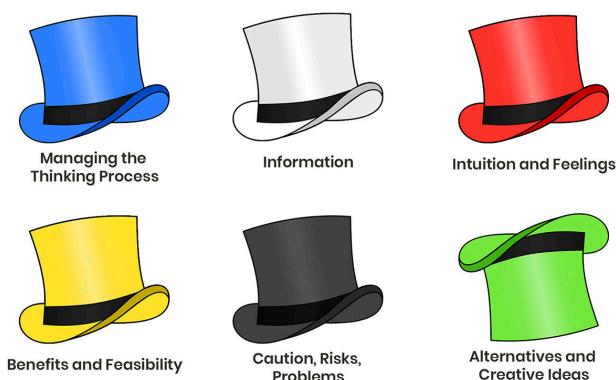
### 2.1 | Ideation stage

Our ideation stage consists of five parts:

- Thinking Hats
- How Might We's
- How-Now-Wow Matrix
- Storyboards
- Sketching

#### 2.1.1 | Thinking Hats

The Six Thinking Hats method serves as a straightforward yet highly effective parallel thinking process designed to enhance our concentration on our chosen problem statement. In this case, the focus is directed towards the complex issue of international students encountering challenges in adapting to life in London, consequently influencing their overall university experience. We used this technique to recognise the challenges that these students face in various aspects of their lives, including financial constraints, difficulties in securing suitable accommodation, navigating the intricacies of transportation, and establishing meaningful social connections.



We did two rounds of alternating hats - each of us getting into the mindset of a hat. We created hat colour coded ideas to address the problem statement. We also added some interview quotes to build our statements. Instead of a red post, there was a pink one. By applying the Six Thinking Hats approach to our problem statements, we can systematically explore and analyse each facet of the challenge. The method prompts us to wear different "hats" or perspectives, allowing for a comprehensive examination of the problem. For instance, the white hat encourages overcoming the fear of socialising faced by international students, while the pink hat prompts an exploration of their emotional experiences.

Here is an example:



After those two rounds, we thought it would be more feasible that our solution to the problem statement is a mobile application. The concept of a mobile application as the proposed solution revolves around the premise that it can serve as a comprehensive, accessible, and user-friendly tool tailored to the specific needs of international students navigating life in London. By consolidating essential functionalities within the confines of a mobile platform, we aim to provide a holistic support system that directly helps reduce the stress associated with challenges such as financial constraints, accommodation uncertainties, transportation complexities, and difficulties in socialising.

The advantage of a mobile application lies in its accessibility, enabling users to access vital information and resources at their fingertips. For instance, the application could integrate features that offer real-time financial guidance, assist in securing affordable and suitable accommodation, provide detailed transportation information, and facilitate social connections within the international student community.

Furthermore, a mobile application aligns with the contemporary lifestyles of students, offering convenience and adaptability. The intuitive design and user-friendly interface would ensure that international students, regardless of their technological proficiency, can easily navigate and leverage the application to address their specific challenges. This tailored approach not only acknowledges the unique needs of the target audience but also demonstrates a commitment to providing practical and effective solutions in an era dominated by digital connectivity.

In essence, the decision to pursue a mobile application as the preferred solution reflects a strategic and forward-thinking approach. It underscores our commitment to leveraging technology to empower international students, fostering a more supportive and stress-free environment as they navigate the complexities of life in London.

### 2.1.2 | How Might We's

Using the suggestions made by Stanford's d.school, each of us generated How Might We (HMW) questions. We used this technique to inspire creativity and encourage the flow of ideas and as a result, we were able to capture user requirements in inventive ways. We committed to producing a good range of HMW's as a group- here is an example from our Miro board of a team member's HMW's which address each category:

#### **Amp up the good:**

*How might we make socialising between home/international students fun?*

Stimulating enjoyable interactions can contribute to a more inclusive/enriching cultural exchange.

#### **Remove the bad:**

*How might we eliminate any negative feelings or nerves that may stop students from settling in or finding friends?*

Addressing negative feelings shows a commitment to the emotional well-being of international students, which builds the user-application trust dynamics and may make the student feel more supported when facing barriers in social integration.

#### **Explore the opposite:**

*How might we make language learning for home students easier instead of international students having to adapt?*

Traditionally, international students are responsible for learning English when coming to London but here we question how we can reverse this and create a more inclusive approach for home students to adopt international languages.

#### **Question an assumption:**

*How might we make people more enthusiastic to talk to others?*

This challenges a potential stereotype of students being more reserved and prompts us to think about how we can encourage more social engagement between both home and international students.

#### **Go after adjectives:**

*How might we transform loneliness from homesickness into happy, engaging feelings?*

Here we question what strategies we can use to shift the focus from negative to more positive feelings to improve students' overall wellbeing.

**ID unexpected resources:**

*How might we help international students meet and interact with people who can offer guidance from experience who aren't necessarily at university (e.g. past alumni who are now working in industry and have gone through the same process)?*

Leveraging the experiences of alumni could be a valuable resource that extends beyond the university and offers insights from people who have experienced and successfully navigated through the same challenges still faced by international students.

**Create an analogy from need or context:**

*How might we incorporate personalised student offers to relevant shops and markets that they go to?*

From this, we want to explore how we can offer a more personalised experience, matching a range of user needs (some may be more niche and specific than others).

**Play against the challenge:**

*How might we make students feel safer and more confident when they're travelling (e.g. by getting them more familiar with tube lines and common bus routes to and from campus)?*

By framing travel safety as an opportunity to increase their confidence in using public transport, we can increase students' familiarity with their surroundings by further investigating the most useful bus/tube lines.

**Change the status quo:**

*How might we make moving to a new country more exciting and encourage people to explore on their own and not necessarily wait to make friends?*

By finding solutions to this, we can make the experience of being in London for the first time more exciting in a way that makes students overlook any apprehension and see this as a way to personally grow and explore.

**Break POV into pieces:**

*How might we understand what ways of socialising students are comfortable with?*

Focussing on understanding the variation of comfort levels through different methods of socialising (i.e. attending university events, chatting to people with similar interests) addresses the range of confidence students have when making new friends.

As each team member had their own HMW ideas, we took it in turns to explain how they met user needs and why this could be realistically implemented in the final application. Through this, we were able to prepare ourselves to cut down and synthesise our HMW's which would eventually give us a direction to focus on.

### 2.1.2.1 | Consolidated How Might We's

Our initial HMW questions were the foundation for our final version. Through multiple team discussions, we reviewed (identified common themes), refined (got rid of unnecessary/too similar HMW's) and summarised the initial HMW's to consolidate them further. This iterative approach led

to our final HMW questions being both comprehensive and actionable and through this, we ultimately formulated solutions to the resulting HMW's as shown in our Miro board.

Here are some of the corresponding ideas from our final HMW's and our thoughts on their feasibility:

***HMW Make Stronger Connections Between All Students?***

Solutions to this involve implementing a buddy scheme (matching older students with freshers), encouraging partnerships between international and local student groups, organising cultural events, establishing community-building initiatives and creating an anonymous help request system to collectively address this goal of strengthening connections. These are ways that we can promote a sense of community and support. The benefits of this involve encouraging personal connections and mentorship, celebrating cultural diversity and providing a safe space for students to seek help. On the other hand, this would require coordination and active participation from students as well as balancing the range of interests and availability of participants. This could be mitigated with a strategic approach to gathering students but this could also heavily rely upon how engaged the student community within a specific university is. But this could result positively in a more enriched social life for international students and help reduce any feelings of loneliness that are commonly felt when first arriving in London.

***HMW Help Students Deal with Demotivation and Depression?***

To address this challenge, we came up with several ideas including providing educational workshops in a mobile app for stress management, establishing a feedback mechanism for students to share their experiences and suggestions and collaborating with support groups to create a safe space for emotional support. Implementing these would address critical mental health issues such as homesickness and Seasonal Affective Disorder (SAD) and provide students with personalised support and actionable plans to help them. Furthermore, it would promote more awareness of these common feelings amongst international students whilst offering them emotional support and ensuring a sense of community. However, naturally the effectiveness of these workshops/feedback mechanisms depend on user engagement and commitment and would require professional oversight (something a bit beyond our scope) as well as ensuring fast responses as sometimes situations could be time sensitive. Ultimately, improving mental health could improve general student welfare and by connection, improve many tangents of their academic and social life.

***HMW Get Societies/Events More Visible to International Students?***

Our ideas for this problem included having a centralised platform for event information and community engagement for students' corresponding London-based university. The advantages of this would include increased visibility of events/activities, enhancing student participation and simplifying access to personalised events. This solves the repeated struggle of students failing to find events or found them too late due to poor advertisement. However to ensure its effectiveness, executing this would require consistent updating and management and keeping a diverse range of events which cater to a student's specific interest which could prove to be a challenge. The impact of this idea would help connect students with similar interests and also help them uncover more interests whilst in London.

Numerous creative answers have been put out in response to the primary HMW issues about improving the experience of international students. With the help of these measures, international students studying in London could have a more welcoming and encouraging environment. The evaluation of the advantages and disadvantages of each option offers insightful information about the possible advantages and difficulties of putting them into practice.

Even though these solutions seem very promising, it's important to keep in mind that their execution will require resource allocation, active participation, and coordination. Furthermore, maintaining inclusion, maintaining quality control, and effectively interacting with a varied student body are important issues that need to be carefully considered.

In summary, the suggested remedies possess the capability to greatly augment the experience of foreign students in London; however, their accomplishment will hinge on deliberate arrangement, cooperation, and continuous dedication from the academic establishments and student bodies concerned.

### 2.1.3 | How-Now-Wow Matrix

The How-Now-Wow Matrix is an idea selection tool that breaks the creadox ('creative paradox') by forcing people to weigh each idea on two parameters. It contains four quadrants- along the x-axis we have a scale of normal 'now' ideas to innovative 'wow' ideas and along the y-axis, we have a scale of ease of implementation. The idea was to allocate all of the HMW solutions into this quadrant. We chose this approach to aid the decision making process for our team as it offered a more systematic way to refine our solutions achieved from the final HMW questions. It allowed us to clearly picture how feasible our ideas were and forced us to reevaluate ones which were less so. Here are some ideas that we assigned to each quadrant:

- **Impossible to implement**
  - Connect with emergency services to ensure the safety of all students, especially those walking alone at night.
  - Adding AI services such as a chatbot to the application.
- **Ideas for the future dreams or challenges. Green ideas of tomorrow (HOW?)**
  - Encourage partnerships between international and local student groups to promote cross-cultural understanding and friendships.
  - Give real time travel updates for example road closures and tube or train strikes.
- **Easy ideas to implement (NOW!)**
  - Implement a buddy scheme to make people more comfortable.
  - Provide an example of a budget plan and tips on how to manage finances.
- **Innovative, breakthrough ideas that can be implemented (WOW!)**
  - Create online platforms or apps that connect international students with native English speakers for language practice and cultural exchange.
  - Organise orientation events for students to be introduced to the city together.

In order to gain an even deeper understanding of users' needs and requirements, our team developed the Ideation classification through HMW solution methods to help international students solve their problems. This used a similar way of categorisation to the How-Now-Wow matrix but instead of the two parameters, we just allocated the ideas based on common problems they were solving. Using this approach helped us find solutions to problems quickly.

During our brainstorming session, we noticed that all our solutions for HMW's could be divided into eight categories:

1. **Online Platforms for Information Sharing** - e.g. Create a forum that serves as an information hub for international students, offering resources, tips and community pages to discuss challenges and solutions
2. **General Well Being** - e.g. Organise workshops and counselling services that address the emotional challenges of adapting to a new culture, homesickness and stress management
3. **Cultural Integration** - e.g. Foster partnerships with local, cultural organisations to facilitate exchange programs and events that encourage interaction between international students and the local community
4. **Language Support** - e.g. Offer language support services such as language exchange programs, conversation clubs and language workshops to enhance the communication skill of international students
5. **Peer Mentorship** - e.g Develop a mentorship program where experienced international students or local students can provide guidance and support to incoming international students
6. **Legal and Practical Support** - e.g. Provide information and workshops on legal requirements, such as visas and work permits, to help international students navigate administrative processes
7. **Regular Feedback Mechanism** - e.g. Take reviews from students about local places and display these to help students navigate recommended places in their surroundings
8. **Community Building Initiatives** - e.g. Introduce a flatmate finder application for students (maybe even inter-university in London)

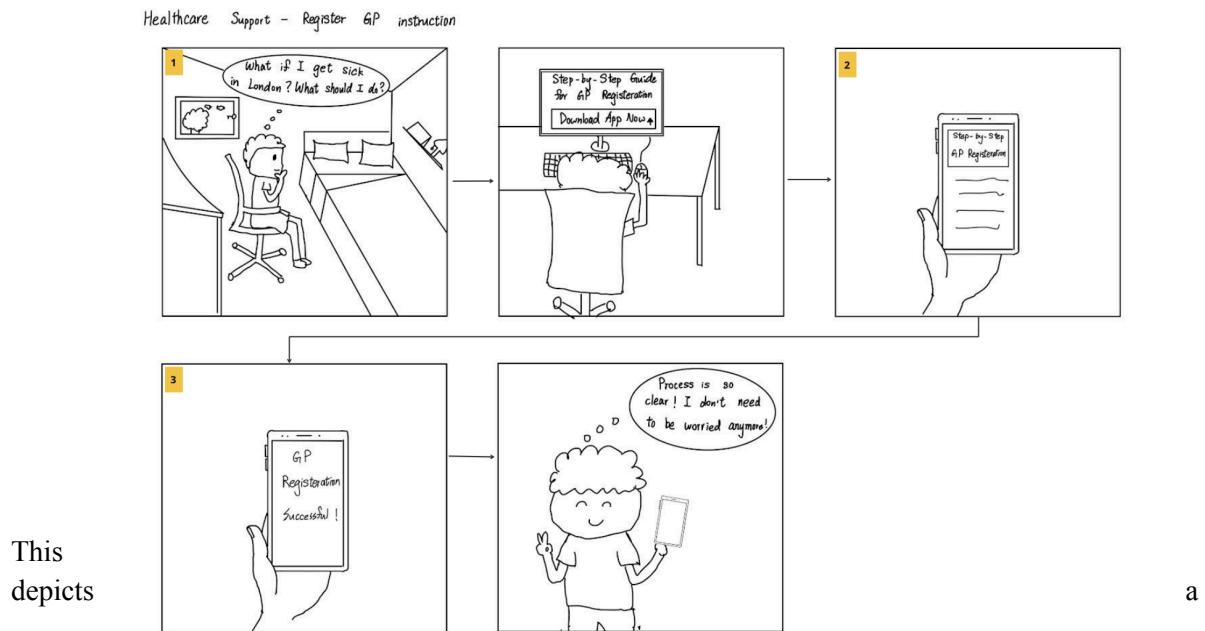
By structuring our ideation, we were able to further adapt the solutions within these categories to make them even more tailored towards international students. These categories served as a strategic framework which then guided the development of our storyboards that depict more specific scenarios and needs. Overall, it promoted more targeted problem solving and allowed us to bucket our ideas in a more succinct manner.

#### 2.1.4 | Storyboards

As aforementioned, through our Ideation Classification, we each created a storyboard outlining what we believe to be common scenarios which use tools to navigate the challenges that the characters in our story face. We decided to implement storyboards as we believed it would be easier to visualise potential user scenarios, help us understand how our ideas might be used in a specific situation and how those solutions relate to real life. After completing the drawings, we added notes on Miro to explain our design ideas and concepts and also added quotes to reinforce how we were solving problems students had previously mentioned.

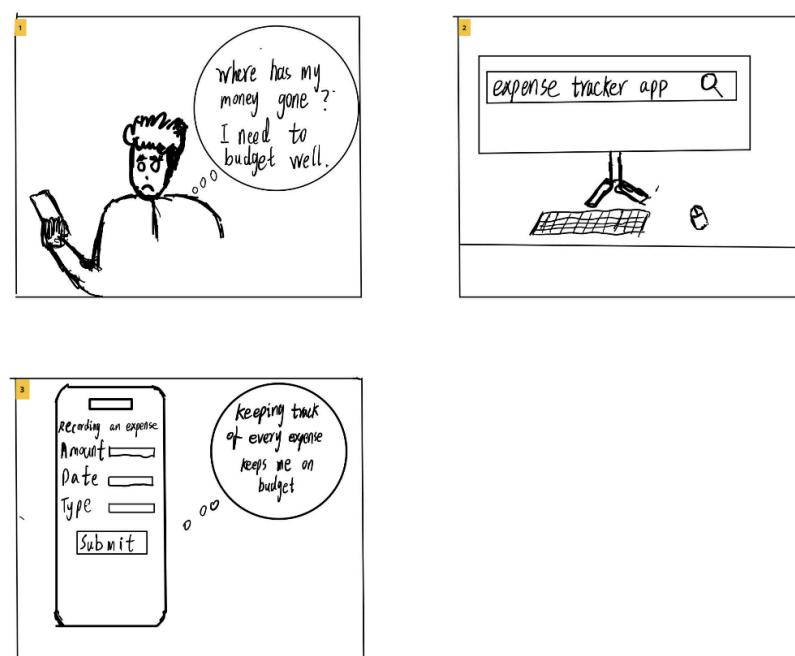
Below are a couple of examples of our storyboards from our Miro:

### Registering for Healthcare



character wondering how to sign up for healthcare in London. By using an application that has a detailed step-by-step guide on how to register for a GP as a student in London, the character's problem is accordingly solved. This is a simple suggestion that could be applied to a multitude of circumstances where students need advice. In particular, this storyboard strongly correlates with previous suggestions of advice forums originating from our How Might We solutions.

### Budgeting



This describes the common situation of international students struggling to keep track of their spending in London, as it is a notoriously expensive city. Here we can see a budgeting tracker is used to help remediate this. The current fields of 'Amount', 'Date' and 'Type' could be further developed by implementing a monthly spending limit with notifications of what percentage through the limit you are.

### 2.1.5 | Sketching

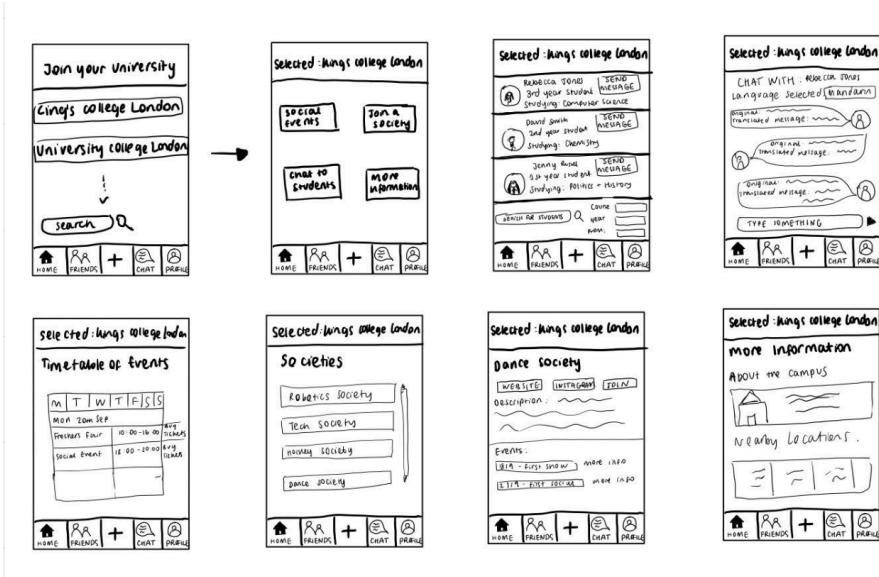
The sketching phase is pivotal in our design process, aimed at bolstering support for international students newly arrived in London. This stage involves crafting preliminary visual representations of ideas we had for the app's features, informed by our brainstorming sessions and guided by 'How Might We' (HMW) questions. It is an explorative process, examining the layout and user interface flow, and it facilitates rapid iterations and feedback on our conceptual designs. Our approach involved individual sketching initially, encouraging a more diverse range of ideas. After we had created our own sketches, to ensure universal standards and the same format of features (e.g. navigation bar and fonts), we then gathered to identify common themes, refine our sketches, and align designs to create a more cohesive and user-centric prototype. For example, we all agreed to keep dark green as a theme colour for our group. This iterative process allowed us to harness the strengths of each team member's creativity while ensuring a unified and seamless user experience.

When sketching, we came up with a series of initial features, based on our consolidated 'How Might We' solutions, that extensively addressed the needs of international students. These included:

- Budget Tracker & Financial Advice
- Map of nearby locations
- Information about university events
- Chatting with Students
- Language Courses
- Stress Management Events
- Flatmate Finder
- Job matching Services

The financial advice/budget tracking services and stress management events offer a practical way to alleviate the stress associated with managing expenses and moving to a new city; this was a repetitive problem students seemed to face. Furthermore, the map feature provides navigation assistance which is crucial for unfamiliar students entering a new city; this could extend to having extra features on travel routes and public transport. The university events finder helps people integrate and make connections with students of similar interests at events within an academic environment; this can enrich not only their social life outside of university but within as well. This can be supplemented with the chat function to further solidify those connections and keep in touch, as well as get advice from existing students who have already faced similar challenges. Similarly a flatmate finder and forums help foster a supportive environment and solve common accommodation problems that students face, whilst job matching services offer valuable employment opportunities which may not be as well advertised elsewhere. We believe these features combined were a great start to helping to enhance the overall experience of international students just moving to London.

Here is an example of a sketch we made (full section on Miro board):



This sketch illustrates an event discovery process, enhanced with filters for university-specific events and societies to simplify and encourage student engagement. The design clarity and accessibility aim to amplify event visibility and participation.

Each sketch was carefully considered to address a specific recurring problem that was mentioned in the broad spectrum of interviewees' challenges. As we had many features, we held a group voting to decide and discuss which features we wanted to particularly prioritise and ensure that everyone was in agreement. This not only created a sense of collective ownership, but also made sure that everyone's perspectives were considered which further added to our cohesion as a team. Our voting results are shown with stars representing a team member's vote in our Sketching Analysis Table on Miro and also includes comments from our team on specific sketches.

For the sketches that received fewer votes, we engaged in open discussions to understand the reasoning behind the scores and identify potential improvements. Through this, we were able to transform the less popular suggestions into refined concepts which were more well-rounded.

It should be mentioned that not every potential solution from our consolidated How Might We's was incorporated in sketches. Some were omitted to prioritise more impactful features and to also streamline functionality within our app. For instance, we refrained from adding cultural integration events, choosing to focus more on language barriers and helping people socialise as this seemed like an immediate problem that was more commonly faced. Furthermore, our ideas surrounding the mentor-buddy programme were also excluded to instead opting for an advice forum to allow greater usability. We would also later consolidate all of the features that we sketched into a finalised list of features that we definitely wanted to incorporate into our app.

### 3 | Prototype Specification

### 3.3 | Requirements

After thorough analysis of our quotes, HMWs and sketches, we collaboratively came up with a set of requirements for our prototype based on key observations we made throughout the process. Below, we have detailed these requirements and explained what observations made us believe these were necessary requirements for our prototype

#### **Inclusion of language learning resources, cultural orientation guides, and language exchange features to facilitate smoother integration.**

This was based on the observation that international students face challenges meeting new people and building a social circle. One of our themes “Connecting with others” forms the basis of this observation - we found that international students struggled to adapt due to factors such as language barriers and cultural differences that made it difficult to meet people and partake socially.

*“The culture and the things that people talk about here are so different from what I am used to. The language was hard as well my English was not very good and often I didn’t know the word for what I was trying to say. I think that made it harder for me to make friends than other home students.”*

#### **A resource that provides detailed financial guidance, budgeting tips, and alerts for potential cost-saving opportunities.**

This was based on the observation that international students often face challenges in managing their finances due to varying costs and currency differences. This also links to one of our key themes “Financial” which we identified as one of the main challenges faced by the students we interviewed as they often commented on the cost of living in London and that they struggled to afford everyday essentials, as well as things such as rent and tuition fees. We therefore decided that help in this area should be an important feature of our app.

*“Very expensive as well. Even when I went to buy like essentials for my dorm on the first day, I was kinda shocked by the prices. I don’t think anything prepared me for that”*

#### **A feature that aggregates housing options, offers virtual tours, and provides insights into the local neighbourhoods.**

This requirement addresses the observation that a significant stressor among international students is the challenge of finding suitable and affordable accommodation in a new city. We found that navigating the housing market, especially in an unfamiliar environment can be overwhelming, and we hope to address this concern with this requirement.

*“I have had a very painful experience in finding a flat throughout the years. If we tend to move in in September. It starts in May and June. And it’s very competitive cause people are just crazy about the houses and in terms of getting the offer they would like to pay more. But we’re international students, we can’t really afford the price. So it’s very difficult for us to get the offer.”*

#### **Integration with local transport apps, maps, and a feature that explains how to use public transportation efficiently.**

This requirement comes in response to the observed challenge of international students navigating transport systems in a new city, and links directly to our “Transportation” theme established in our define phase. We aim to alleviate the confusion of moving around an unknown urban environment and provide real-time information on routes and disruptions, enhancing the ability of the students to plan journeys effectively, and equip them with the knowledge to navigate the complex public transportation city in London.

*"It was very difficult navigating London. I used google maps and citymapper at the recommendation of my friends, which helped me to find what trains I needed to take to get places. I got lost on the buses several time actually I went in the wrong direction"*

#### **A platform that facilitates social connections, events, and cultural exchange opportunities.**

This requirement directly addresses the observed challenges associated with language barriers and adjusting to a new culture among international students. This also links to our “Connecting with others” theme. We discovered that moving to a new country can be isolating, and that the language differences especially may hinder interpersonal connections, therefore we hope by providing a supportive social networks to students struggling with these feelings, they will feel more connected socially and we will foster a more positive and inclusive environment.

*"I think I found the socialising aspect, its a little daunting at first because you know all the people I ran into on my first day they were like home students so they could all kind of like relate to each other"*

#### **Integration with local health services, virtual health consultations, and mental health resources tailored for international students.**

This requirement directly responds to the observation that accessing healthcare, especially mental support is challenging for students in a new environment. International students often face unique healthcare concerns, and this attempts to help ease this problem.

*"University sent me some e-mail information to help me apply visa and NHS, but I don't have any experience, so it's quite hard for me to know how to get into the right process."*

#### **Features like a professional networking platform, career workshops, and internship opportunities tailored for international students.**

The requirement for these features come from the observation that building professional networks is essential for international students for their future career prospects. Linking this to our “Academics and Opportunities” theme, we discovered that international students face unique challenges when it comes to establishing connections in their chosen industries, and we aim to address this by providing career and job finding services as part of our application.

*"For international students it's kind of hard to get the job, especially if you are absolutely from overseas"*

### **3.4 | Prototype Features**

After carefully defining our set of requirements and comparing and voting on sketches of our initial list of features, we now felt ready to finalise our list of features that we wanted to have in our prototype, making these more detailed, consolidated and unified than when we were doing all our own individual sketches based on one or more features. The full list of features can be found on our Miro board, alongside assumptions about these features which are linked to each one. Below, we have explained in detail the reasoning behind several of our key features

This part of functions in our app suggest to support the mental well-being of international students in London. It addresses the challenges of homesickness, academic stress, and seasonal depression, offering a suite of interactive tools and resources to assist students in adapting to life abroad.

We aim to provide several features based on our interview findings of what international students need.

- Provide information and education in common mental health issues like Seasonal Affective Disorder (SAD).
- Offer a platform for students to sign up for mental-related events, sessions, seminars, and workshops with diverse choices for them.
- Combining another feature we have in our app which is Social Events to create a sense of community among students by finding and making friends from similar backgrounds, or based on the same interests and hobbies they may have.
- Facilitate stress management with personalised tools and resources to help international students better keep balance between their academic study and daily life.

Key features:

- **Events to join:** The app provides a centralised hub for students to discover and sign up for various mental health-related events, including workshops on learning and coping with SAD, seminars on tackling stress, and relaxing activities such as yoga sessions. Each event listing includes detailed information, the ability to sign up, and an indicator showing if the event is full, ensuring that students can plan their participation effectively.
- **Stress Management System:** This is an personalised stress management system which generates a customised and recommended activities based on the students' responses to the questionnaire. Students can schedule these activities using an integrated calendar, which also allows them to track their progress, review what they have done, and receive reminders for upcoming sessions or tasks they set for themselves.
- **Homesick Support through Social Events:** Recognising the impact of homesickness, the app offers another core feature “Social Events”, connecting students with others from the same country or with similar interests and hobbies. This encourages the creation of a supportive community, making students feel less isolated and more at home in their new environment and adapt with it quickly. Students can easily join events they interest, promote social interaction and cultural exchange.

#### University Events and Societies Finder

This feature is designed to address the specific needs of international students by creating a centralised hub of resources for discovering and participating in university events and societies. Through our interview findings, we identified that international students often seek a convenient platform to connect with like-minded individuals and find information about the selection of events happening on campus.

Key Features that are based on these findings:

- **Societies to Join** Recognising the fact that joining a society is one of the quickest and easiest ways to meet people and become part of a community(this was mentioned by several of our

interviewees as a way they used to meet people with similar interests), we decided to make it so the user can browse and join various student societies tailored to their interests, and connect with students who share similar hobbies, which should help to foster a much needed sense of community among these students

- **Viewing and Creating Events** The ability to view or even host upcoming events for university students aims to enhance student engagement and empower international students to participate in more events, hopefully leading to them meeting a greater variety of people. By allowing them to create their own events, this should create more inclusivity and diversity, as these students can share aspects of their culture or hobbies.
- **Commenting on Events** The feature that allows users of the app to leave comments on upcoming events transforms this feature into a networking opportunity, and provides a further chance for international students to connect with each other and share insights and their curiosity about these events, which should create an option for pre-event engagement. The comments can also serve as an information exchange, providing extra details or clarification about these events.

#### Financial Tips and Advice Forum

This feature is designed to address to identified problem of international students facing financial challenges. By delegating a section of our app to providing open communication and support about financial challenges, we are acknowledging that financial stress is a common concern, and we will hopefully match students with those who have already overcome this challenge.

Features:

- **Interactive Forums** should provide a space for students to seek advice from their peers, not to mention helping to create a further sense of community where students can share experiences and receive
- **Posts with general information** The inclusion of these serves as an educational resource for students who are not familiar with the financial landscape of this country. Many students commented that they wished for more comprehensive support from their universities surrounding the financial aspects of navigating life in London, so we attempt to address these needs by providing a centralised repository of information.

#### Key Assumptions

We have devised 10 key assumptions derived from the features we've selected, that we aim to test in our prototype. These assumptions will serve as a the hypothesis for our evaluation process, helping us to assess the functionality and effectiveness of our chosen features. These are listed in full on our Miro Board, but below we have given a few examples of these assumptions and how we believe these play into addressing our problem statement.

#### **By tracking their finances, users will feel more in control of their spending and able to navigate the high costs of living in London**

This assumption is addressed by the “budget tracker” feature which aims to help users manage their finances. This is vital for addressing the problems we found international students faced, as we identified “Financial” and the struggles related to this as a key organisational challenge faced by international students. A common theme within “Financial” that we identified was budgeting - students were firstly not aware of the high costs of living, nor did they have any prior experience with budgeting, as many commented they had always been reliant on their family for this particular skill.

We believe that implementing a financial tracker system will help them at least improve to some extent with this.

### **Allowing students to enhance their English skills with remove any anxieties that come from speaking the language and allow them to feel more comfortable meeting people**

This assumption is addressed by the “language courses” feature, as well as secondly addressed by the “real time language translation” offered as part of our messaging services. This is key to addressing the struggles with socialising and connecting with others that were identified as themes and part of our problem statement - it became clear to us that the language barrier was a major factor holding students back from putting themselves out there socially and forming connections, so we aim to address this with the aforementioned features.

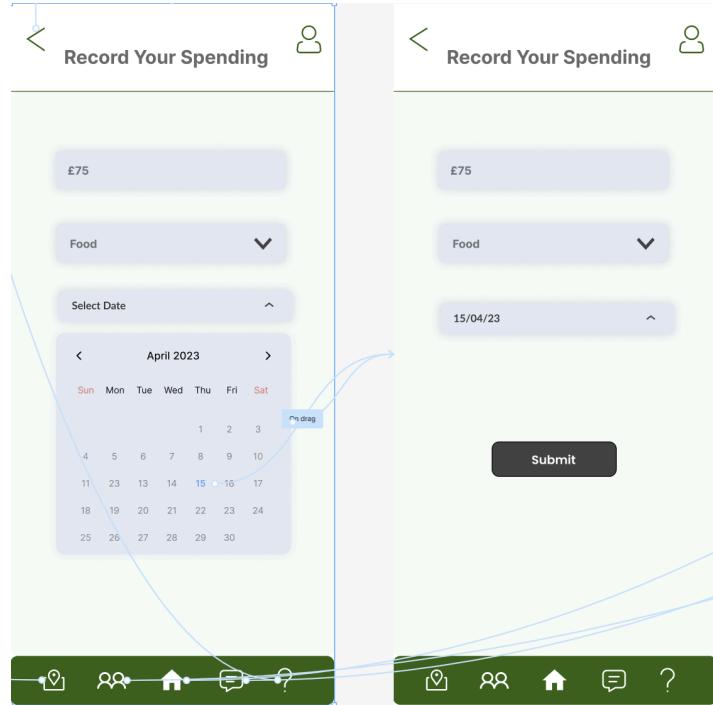
## **3.5 | Prototype execution**

By referring back to the problem statement throughout the design phases, we aimed to create a prototype that would effectively address the challenges international students face when dealing with the organisational and administrative aspects of moving to London. In addition, the design of the prototype should be intuitive for the user. The user should be able to get started quickly and not spend time thinking about which button does what.

Within the team, we decided that we would use Figma for prototyping. Though there are challenges of using Figma for prototyping, for example managing a large number of files and components is not pleasant, because it is not easy to locate specific elements. However, we still decided to use Figma. A major reason for this was that many were already familiar with the basics of using Figma, which would save the team a lot of preparation time and allow more time for design. Meanwhile, the challenge of resource management can be reduced, through effective project management; in this case or group assigned each person the responsibility for the design of a particular feature, so we no longer need to locate a specific element from a large number of resources and through the modularity of project management, we have effectively reduced this challenge.

Our prototype was initially based on ideas from our respective sketches, each team member is responsible for producing their own part of the sketching. For example, we wanted each frame to be combined with a home bar to increase the convenience and accessibility of our design, allowing users to jump back to the home page or other key functions such as map, friends, message, etc. from wherever they are. We designed it to be as intuitive as possible for the user, for example, we added shadows to some of the interactive parts, such as the buttons, so that the user would easily know that this part was functional and clickable. We also came up with the idea of a search bar so that users could quickly jump to the features they wanted by typing in suggested words. This would significantly reduce the cost of learning and using the software, which is crucial for international students who have just arrived in London, as it is a very stressful time for them. Throughout the process we organised regular meetings and encouraged everyone to contribute ideas to the discussion so that we got a solution that was inclusive and suitable for the end user.

From our final prototype, here are some screenshots and their respective analysis of our design:



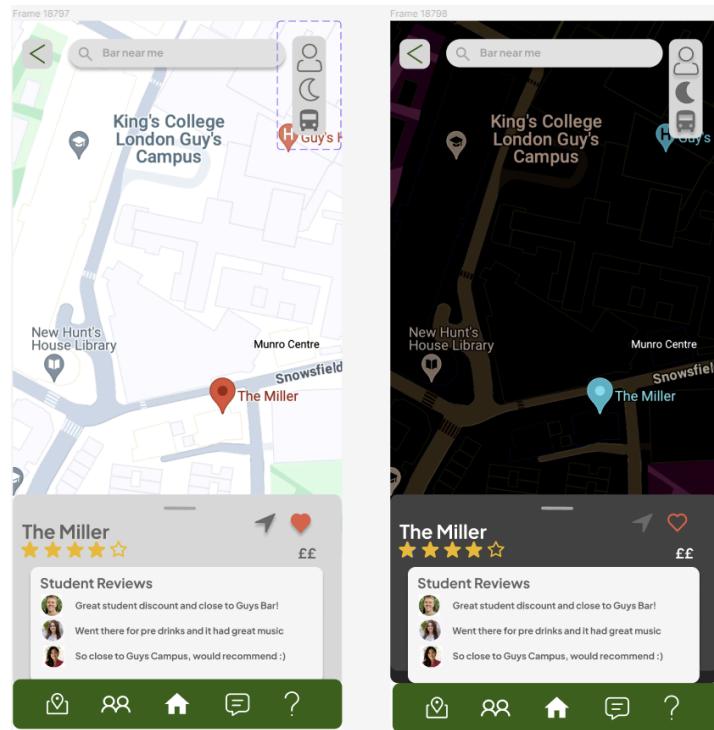
This feature is designed to record an expense to facilitate effective budget management for international students to address the financial management challenges they face. From a usability point of view, rather than having our end users type in a specific date, which is tedious and time consuming, we have made a calendar where our end users can simply select a date. This way, the user does not have to learn how to use the software, and the traditional implementation of dates even requires the user to learn what kind of date format is acceptable.

The interface is divided into several sections:

- Connect with people:** A search bar and a "Common Interests" section showing shared hobbies like Music, Movies, Football, and Hiking.
- Message:** A profile for "Amanda Griff" with a video call icon.
- Filters:** A sidebar with sliders for Age (16-35+), University Name (King's College London, Imperial College London), University Course (Computer Science, Artificial Intelligence), Native language (Italian), English level (Beginner-Fluent), and Interests (Music, Reading, Movies, Football, Hiking).
- Filters results:** A list of filtered profiles:
  - Amanda Griff (Imperial College London, 19 Law)
  - Harry Simpson (London School Economics, 22 Economics)
  - Tiffany Tipton (King's College London, 20 International Relations)
  - Tom Fiderson (King's College London, 23 English Literature)
  - Sarah Parker (University College London, 22)

Our Chat with Students feature has been designed to address the homesickness of international students. From a usability point of view, to make it easier for end users to communicate with the type

of student they are looking for, we have included filters for school, native language, hobbies and even courses taken. This makes it easier for users to find their matches and alleviate homesickness more effectively.



When designing into account faced by students, such as the fact that they may miss out on some popular restaurants or famous landmarks because they are new to London and unfamiliar with it. This helps them to adapt to life in London. From a usability point of view, we have also included a dark mode that allows users to choose different styles according to their own preferences.

our maps, we took several challenges international

## 4| Testing

### 4.1 | Usability Test

We generated a prototype application using Figma, representing a simulated version based on the preliminary stages of our design-thinking process. This model, designed for a mobile phone application, showcases essential features outlined in our prototype specification, accessible on our Miro board for detailed reference. Therefore, the prototype in Figma must be tested so we can understand better what we've done well and what we could improve.

Our key objectives were:

1. Assessing if our prototype aligns with key assumptions and our core problem statement
2. Evaluating the prototype's usability based on Usability Heuristics.

3. Assessing users' comprehension of various application features, such as joining a university society, mental health club, stress management etc.
4. Measuring the overall utility of the application and whether it's beneficial to users.

The study will involve recruiting participants from King's College London, with selection conducted randomly from a pool of students who express interest in participating. Initial contact with potential participants will be made through their email addresses, and prior to their involvement in the study, explicit consent will be granted. In total, we conducted 3 Think Aloud usability tests. The test will take place remotely via a video call on Microsoft Teams.

After introducing ourselves and explaining the tasks, we shared the Figma prototype link and presented tasks one by one. Our aim was to uncover major usability issues, verify alignment with key assumptions, and observe user reactions without offering assistance, while encouraging them to Think Aloud throughout the interaction with the prototype.

This is an example of how the session went:

- The participants received information regarding the application.
- Participants displayed their screens, activated their cameras and microphones, and granted consent for screen recording.
- Participants navigated through the Figma-based application, exploring various screens and interacting with the functionalities it offered.
- Each user utilised the application for a duration of almost 15 minutes.

For a constructive session, we decided to write a script for introduction and explanation about the 'Think Aloud' concept in order to improve the flow of the conversation. This section clarified the desired actions from users, fostering a sense of ease by emphasising the evaluation of the product rather than assessing them personally. We introduced the "Think Aloud" concept, informing them that hints or assistance with tasks wouldn't be provided. In case they paused, we encouraged them to resume by posing questions such as, "Can you tell me what you are searching for?"

Here is our script:

*Introduction -* "Hi, we are from Globetrotters and we want to thank you for participating in this usability session today! Before we get started, I'm going to give you some information about the session. It will last 15 minutes and if you want to take a break or you have any questions, that is absolutely fine, just let me know. Your participation is, of course, voluntary and your feedback is really valuable to us as we have worked on a prototype to help international students that have just arrived in London. We want to understand more about the strengths and weaknesses of this prototype so we can look to improve it to create the best version we can."

*Explaining thinking out loud protocol -* "Today we are going to use a methodology which is called the 'Thinking Aloud Protocol'. This technique involves verbalising your thoughts and feelings as you interact with our prototype. The goal is to gain a deeper understanding of your experience, identify any pain points and gather suggestions for improvement. As you go through the tasks we've prepared for you, please remember to say your thoughts out loud. If you're reading anything, if you click on a link, let me know what you're expecting."

*Making the user comfortable* - “Please share your impressions, concerns, or anything that comes to mind as you navigate through the prototype. There are no right or wrong answers - your honest feedback is what we're looking for. Feel free to take your time and do whatever you'd do normally- pretend I'm not here! Again, don't hesitate to ask questions if something is unclear. This is a safe space, and there are no judgments here. We're here to learn from your perspective and we're not testing you, we're testing the design. Just to let you know, I'll be taking notes and I might direct you to another part of the application if necessary.”

*Q&A section* - “Before we begin, do you have any questions about the thinking aloud protocol or the tasks we'll be asking you to complete? If not, we'll go ahead and get started. Thank you once again for your participation!”

#### Testing Guide:

To initiate the process, we will prompt the user to log in to the application using predefined username and password credentials. Step by step, we will instruct the user to execute various tasks and respond to the provided questions. The testing guide consists of a mix of questions which measures the expectations of users when they see a name(e.g., meaning of ‘Favourites’ feature) and questions similar to ‘what steps are involved for a specific feature (e.g.How would you access your spending reports?).

Here is our testing guide relating to prototype features:

- **Log in/Sign in**

- 1)What is the difference between 'new account' and 'existing account'?
- 2)After you sign in your account, what is the next step?

- **Profile and customisation**

- 3)How would you complete your profile?

- **Find students from your university with the same interests**

- 4)How would you connect with new people? Would you connect them by university, interests etc.?

- **Chat with students**

- 5)How would you send messages/ audio call/ video call people?

- **Budget Tracking Service**

- 6)Could you find the budget tracker?
- 7)How would you set a budget?
- 8)How will you access your spending reports?

- **Stress management events**

- 9)What does 'Mental Health Club' mean? Are you able to sign up for events regarding mental health?
- 10)Could you access 'Stress Management'? What have you expected to find here?

Map

- **Real time language translation**

11)Would you consider changing the language of the chats from English to your native language? If yes, how do you change it and reverse it to English?

- **Map**

12)How do you access dark mode in the 'Map' section?

13)What do you expect 'Favourites' mean in the 'Map' section?

- **University Events and Societies Finder**

14)What is the difference between 'Societies' and 'Events'?

15)How would you add a new event? What about joining an event?

- **Flatmate Finder and Forum**

16) What are the steps in finding a flatmate?

- **Job matching Services**

17)How would you find jobs if needed?

- **Language Courses**

18)Where are the language lessons? Would you stick to improving your English?

- **Financial Tips and advice forum**

19)How did you find 'Financial tips'? Would you check the forum regularly?

## 4.2 | Usability Test Results

Initially, we analysed the results of our usability test, considering both qualitative and quantitative aspects. In the qualitative analysis, we condensed observations for each task, including general user reactions and comments. This meticulous approach allowed us to gain valuable insights into the user experience and identify potential areas for improvement in our application.

### Testing Observations (Qualitative):

- 1) User's feelings about the general aesthetic of the application
- 2) What would the user do after seeing the home page the first time?
- 3) User's feelings about the sign in process
- 4) User's ability to distinguish between 'societies' and 'events'
- 5) User's expectation regarding the stress management

The qualitative analysis brought attention to areas for usability improvement and assessed whether our prototype effectively addressed core assumptions. We will discuss more broadly in the following sections.

### Testing measurements (Quantitative):

- 1) Time taken for a task
- 2) Number of clicks on a task
- 3) First step after the sign in

#### 4) Number of completed tasks.

We observed that relying only on quantitative analysis wasn't very helpful in our usability testing. Specifically, metrics such as "Time taken for a task" didn't offer much insight during a Think Aloud methodology. In this type of test, users take their time to share thoughts and feedback while exploring the app. Moreover, users tended to deviate from the prescribed tasks, engaging in exploratory actions like clicking around and inspecting different buttons.

However, by incorporating qualitative analysis and reviewing recorded sessions, we were able to extract valuable information about usability issues and understand how users felt as they experienced the product. This qualitative approach provided a more nuanced and insightful perspective, offering a richer understanding of user interactions with the prototype.

### 4.3 | Common Issues

- Initial impact with Figma prototype:

One notable issue encountered during the initial interaction with the Figma prototype was the confusion among students regarding the Figma platform itself. As students engaged with the prototype, there was a discernible lack of familiarity with Figma as a design tool. This unfamiliarity created initial hurdles as students navigated through the interface and attempted to understand the functionalities of Figma.

The confusion stemmed from a combination of factors, including a lack of prior exposure to design tools, a limited understanding of Figma's unique features, and a general discomfort with the platform. Some students found it challenging to grasp the concept of collaborative design in real-time, which is a key strength of Figma.

- Not all buttons are clickable:

This might confuse students and make it harder for them to use the prototype. We need to make a list of which buttons are causing the issue and make them work properly. This way, the prototype will be more user-friendly and closer to how we want the final product to be.

- Challenges in navigating through the features:

The prototype presented difficulties for the students as they attempted to explore and interact with the application. Navigational complexities emerged, causing some users to become disoriented and, in certain instances, lost within the prototype. The abundance of features within the Figma prototype posed a significant hurdle for the students, making it challenging for them to intuitively grasp the structure and functionality of the application. This issue hindered their ability to seamlessly navigate through the prototype, potentially impacting their overall user experience. Addressing these navigation challenges becomes imperative in refining the prototype's usability. Streamlining the user interface, enhancing navigation cues, and providing clear pathways through the features are essential steps to mitigate these issues and ensure a more user-friendly experience for the students engaging with the Figma prototype.

### 4.4 | Usability Heuristics Violated

Based on Nielsen's 10 usability heuristics, here are those that were violated in our prototype:

- Aesthetics & minimalism: This principle emphasises the importance of making the design visually appealing and keeping it simple. Aesthetic design enhances user satisfaction, while minimalism focuses on presenting only the essential elements, avoiding unnecessary complexity. Essentially, it's about making things look good and keeping them easy to understand. One participant states that it should be easier to navigate through the 'Budget tracker' feature,
- Visibility & feedback: Visibility relates to making key elements and options easily noticeable and accessible to users. Feedback involves providing timely responses to user actions, informing them about the system's status or outcome. In simpler terms, it's about showing users what they can do and keeping them informed about what's happening as they interact with the system. During our testing, there were some challenges in finding some buttons making the user experience unpleasant and not as smooth as both parties perhaps would have liked.
- Recognition rather than recall: This heuristic suggests that it is easier for users to recognise things they have encountered before rather than recalling them from memory. In design, this means presenting information and options in a way that users can easily recognize, reducing the need for them to remember specific details. One participant recalls seeing 'Finding a flatmate' feature somewhere and tries to find it by what he remembers.

## 4.5| Improvements

### **Rearrange the features:**

Users expressed confusion regarding the locations of certain features and encountered difficulty in locating them, despite successfully completing the assigned tasks. This signals an opportunity to enhance the user experience by strategically organising and presenting the features within the application.

By rearranging the features, we aim to provide users with a more intuitive and logical structure, making it easier for them to find and access the functionalities they need. The current confusion suggests that the existing arrangement may not align with users' mental models or expectations. Therefore, a thoughtful redesign can help bridge this gap and create a more user-friendly interface.

The process involves analysing user feedback, identifying the most frequently used features, and organising them in a manner that aligns with users' natural flow of interaction. Grouping related features together, simplifying the navigation pathways, and ensuring clear visual cues contribute to an interface that is not only aesthetically pleasing but also conducive to efficient task completion.

Ultimately, the goal is to minimise users' cognitive load by eliminating the need for them to search for features, thereby enhancing overall usability. This improvement ensures that users can effortlessly locate and utilise the features they require, contributing to a more satisfying and efficient user experience within the application.

### **Visibility of buttons:**

Participants encountered difficulty in locating and accessing these buttons, despite unanimously acknowledging the intuitive nature of their functions. Furthermore, comments were made on the

placement of buttons in the top right screen which would usually not be accessed on an iPhone 14/15 which is what we formed our app on. This challenge highlights the importance of making these buttons more visually prominent and accessible for a more seamless user experience.

To address this concern, an improvement plan could involve enhancing the contrast between the buttons and the background, employing a more distinguishable colour scheme, or adjusting the size and placement of the buttons. These adjustments aim to draw users' attention to the buttons, making them more noticeable and reducing the effort required to locate and interact with them.

By improving the visibility of these buttons while retaining their intuitiveness, the design could create a more user-friendly experience. This approach ensures that users can easily identify and access the desired functionality without unnecessary frustration, ultimately contributing to a more effective and enjoyable interaction with the interface.

#### **'Edit your profile' form:**

Users need assurance and transparency about the specific details that are shared publicly, ensuring that there is no ambiguity regarding what information is visible to the community. This clarity is essential for users to feel confident about the extent of their profile's visibility and the impact of the information they provide.

Addressing sensitive information, such as age, native language, and English proficiency, is crucial to implement a more robust privacy mechanism within the profile editing process. Users should be explicitly informed about the visibility settings for each piece of information they input. For instance, they need to know whether their native language or English proficiency level will be displayed to others.

Implementing clear privacy settings during the profile editing process allows users to make informed decisions about the information they are comfortable sharing with the community. This includes incorporating features such as toggles or checkboxes next to sensitive fields, enabling users to customise the visibility of each piece of information based on their preferences.

Another improvement lies in providing users with a confirmation step or summary before finalising their profile edits. This confirmation should explicitly list the information that will be visible to other users, giving individuals the opportunity to review and modify their choices before making them public. This not only enhances transparency but also empowers users to maintain control over their shared information.

By implementing these enhancements, we can create a user-centric environment that values transparency, respects privacy concerns, and ensures users have the necessary information to make informed decisions about the visibility of their profile details within the community.

## **5 | Conclusion**

In our project about international students coming to London, we took some careful steps to understand their struggles and find solutions. We began by interviewing 30 people, learning from their experiences using a codebook and creating empathy maps. From those interviews, we found common themes and made characters called personas based on what people shared.

With all this information, we created a clear problem statement. We saw that international students find it tough to handle a lot of administrative based tasks and planning when they move to London. Things like finding a place to stay, managing money, figuring out transportation, and making new

friends were constantly reiterated as being really stressful. Our solution was to create a hub with all the information and tools students need for a smoother start in London.

Then in the ideation stage, we used different techniques and insights from our personas to come up with ideas. We drew sketches and made storyboards to show how our solution could work and also analysed our sketches to connect them to what we learned before. Once we had a good plan, we used Figma to build a model of our idea, called a prototype. Finally, we tested our prototype with real users using the 'think aloud' method, where they shared their thoughts as they used it. During the testing stage, we were pleased to find that our core assumptions were majorly met.

One key assumption was that "Allowing students to enhance their English skills will remove any anxieties that come from speaking the language and allow them to feel more comfortable meeting people." We integrated a feature aimed at improving English skills, and feedback from users indicated that they found it genuinely useful, expressing an intention to stick with it. This positive response validated our assumption that language improvement could contribute significantly to alleviating social anxieties among students.

In conclusion, we believe our project successfully identified key themes to assist international students who have arrived in London. Through interviews, empathy mapping, and persona creation, we gained valuable insights into their challenges and needs. However, it is important to acknowledge that we also uncovered common issues and areas for improvement especially within the design of our prototype. For example, the placement of certain features were less intuitive and led to a less enjoyable experience which could severely impact our user experience and their overall opinions on how helpful our application would actually be.

While we made significant strides in addressing certain aspects, if we were to continue this, a future improvement would be to further refine and enhance the overall support system for international students. We could do this by addressing a greater range of issues in our financial advice and perhaps improving ideas that we previously discarded as they were of lower priority and not as well developed as some of our other ideas.