



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Human Computer Interaction

CSE 4015

Winter Semester 2021-2022

TITLE:

Sage - VIT Counselling Application

Project Report by:

Benjaram Sai Sriya 19BCE2350

Sanjana Sharavan 19BCE2328

Nilophar Joglekar 19BCE2482

CONTENTS

S No.		Page No.
	Acknowledgment	2
1.	Abstract	3
2.	Introduction	3
3.	Problem Statement	3
	3.1 User Persona	4
4.	User Study	5
	4.1 Survey Research	5-8
	4.2 Interview Research	9
5.	User Data Analysis	10
	5.1 Key Findings of the survey	10
	5.2 Key Learnings from the Student Interviews	10
	5.3 Key Learnings from the Counsellor Interviews	11
6.	User Flow	12
	6.1 HTA	12
	6.2 Storyboarding	13
7.	Methodology	14
8.	Design Screens	16
9.	Heuristic Evaluation	17
10.	Testing	10
11.	Conclusion & Foreseeable Enhancements	57
12.	References	57

ACKNOWLEDGMENT

I hereby acknowledge that, the case study entitled “*Sage-VIT Counselling Application*” submitted by us, for the award of the degree of Bachelor of Technology in Computer Science to VIT is for award of bonafide work carried out by me under the supervision of **Prof. Vydianathan Ramaswami**. The contents of this report have not been submitted and will not be submitted either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

Place: Vellore

Date: 26th April 2022

1. ABSTRACT

According to college officials, the number of students suffering from major mental illnesses has increased dramatically. The recent media attention around suicides has sparked a conversation about mental illness among college students, as well as hurdles to receiving services. On the basis of well-accepted service concepts, recommendations to improve campus-based responses to serious mental illness are offered.

This application provides a platform for VIT students to approach various resources and connect with several professionals without compromising their privacy.

2. INTRODUCTION

In a massive campus like VIT, a lot of mental health cases go unnoticed and most of the students are unaware of the existing consultation services provided by VIT. In order to counter these issues, we are providing a counselling platform that users can utilise to keep their mental health in check. Currently, there is no solid platform for students to book appointments or sessions with counsellors or keep track of the ongoing sessions. They only resort to contacting these counsellors via phone call. Moreover, students are not fully aware about how the procedure and to what extent these services are effective which makes them skeptical and dubious to reach out. This project aims towards understanding how the counselling system in VIT works and the students' perspective.

This project works towards taking it through the five stages of a UX Design Thinking process by conducting extensive research and gathering more information about user behaviour in this scenario. Along with implementing innovative features in the app, a convenient, accessible and equitable approach while interacting with the interface will be ensured.

3. PROBLEM STATEMENT

There's a lack of helpful information on mental health and counselling services for the students of VIT University.

This app aims to help the students by enabling them to seek timely and effective assistance by giving them access to resources and letting them book counselling services; all on a single platform.


Primary User - Students of VIT University

Secondary User - Parents

Tertiary User - VIT University

3.1 USER PERSONA:-

Persona 1-



Ananya Anand

"Your mental health is a priority"

Demographics

- 🔗 **Age:** 26 years old
- 🔗 **Education:** PhD in Biotechnology
- 🔗 **Hometown:** Chennai, India
- 🔗 **Family:** Lives in hostel
- 🔗 **Occupation:** Student

Goals

- 👍 Would like to normalise seeking therapy through awareness.
- 👍 Would prefer to go to a therapist recommended by a friend.
- 👍 Would want to book/ schedule sessions well ahead of time.


Frustrations

- 👍 She is cognizant of the social stigma associated with mental health.
- 👍 She feels that there is no one-stop directory of campus counsellors that she could have easy access to

Bio

Ananya is struggling to find the perfect balance between work and personal life during the pandemic. She often finds herself stressed and anxious with ever-growing tasks and responsibilities. She has tried going to therapy but was unable to find the perfect therapist for her mental health issues. She is of the opinion that mental health should be prioritised and wishes to speak to a counsellor/therapist best suited to her issues.

Persona 2-



Rahul Gupta

"I am my best company."

Demographics

- 🔗 **Age:** 19 years old
- 🔗 **Education:** BTech in CSE
- 🔗 **Hometown:** Delhi, India
- 🔗 **Family:** Lives in hostel
- 🔗 **Occupation:** Student

Goals

- 👍 Would like the platform to have other mental health related resources that he could refer to .
- 👍 Would want to be promised confidentiality foremost

Frustrations

- 👍 Fears what his peers might think when they find out he goes to counselling.
- 👍 Is unaware of the mental health facilities available on campus.

Bio

Going to college after almost 2 years of quarantine has been quite a task for him. He's a second year student and has never attended offline college on campus before. Most of the time, he's melancholic, introverted and has problems in communicating with people. Rahul only opens up with people he's interested in. He's been having a hard time at college due to this. He's been pretty emotional lately, but he doesn't know why.

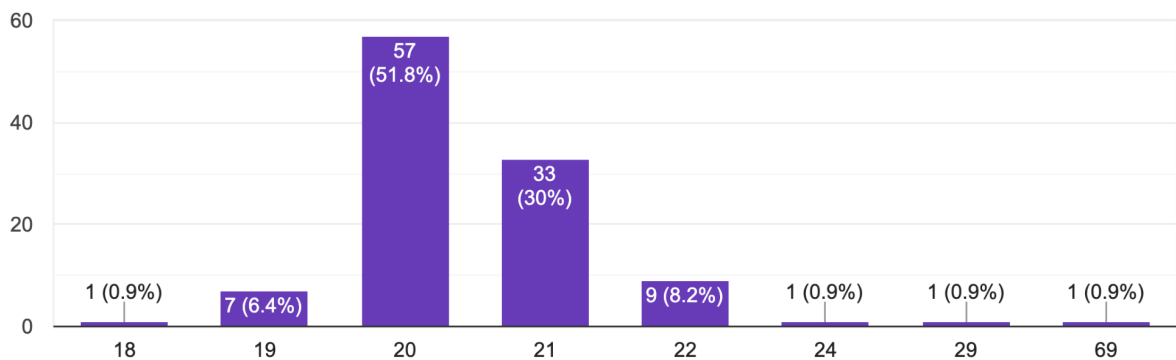
4. USER STUDY

4.1 Survey Research

We've conducted a survey to understand students' perspectives and opinions on mental health in general as well as the VIT counselling services that are provided. We've received 110 responses so far. The questions and responses are attached below.

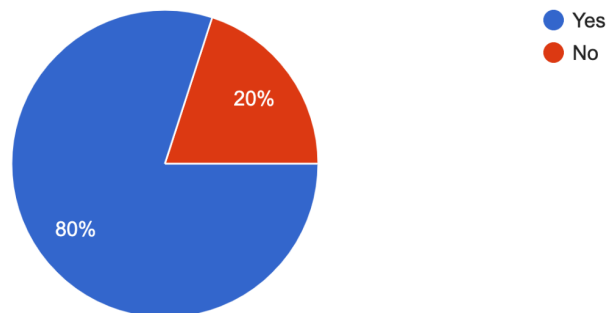
Age

110 responses



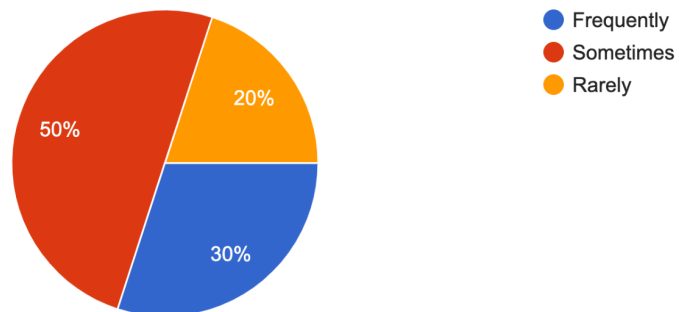
Have you experienced discomfort in your mental health?

110 responses



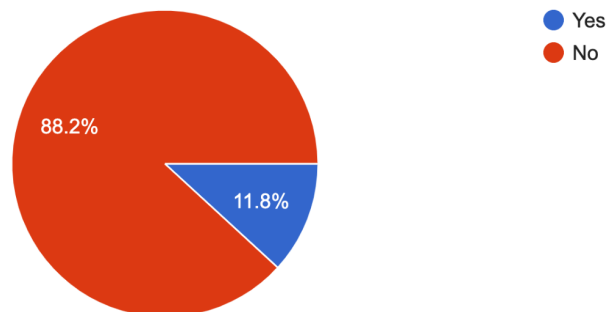
How often has your mental health affected your ability to get work done?

110 responses



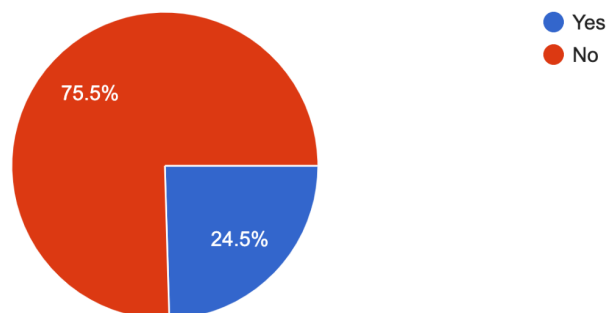
Have you ever been diagnosed with a mental illness before?

110 responses



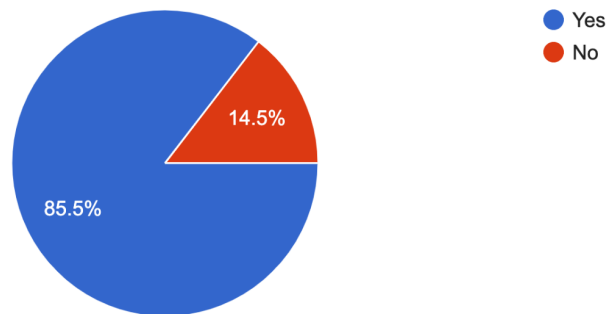
Are you bothered about what other people might think if you go to counselling?

110 responses



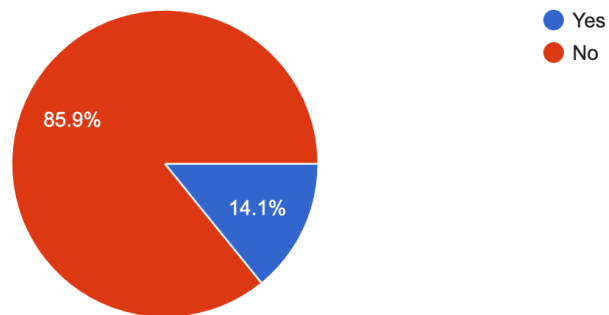
Are you aware that such counselling services are available on campus?

110 responses



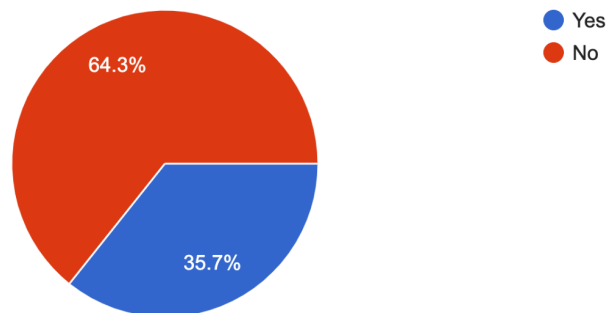
If yes, have you ever reached out to a counsellor on campus before?

99 responses



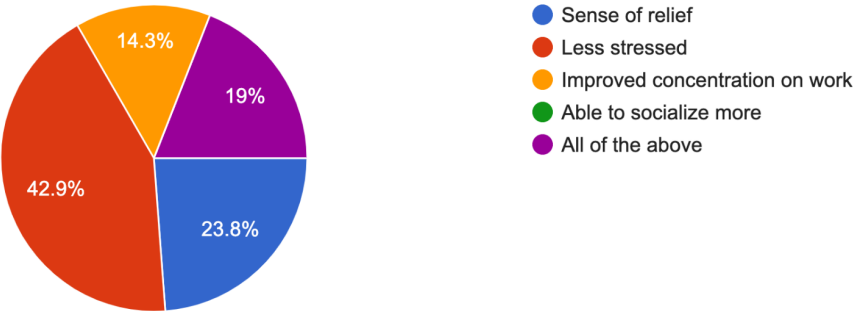
If you have reached out, did you follow the consultation as required?

42 responses



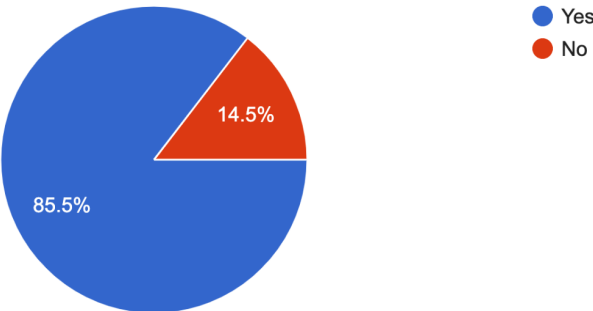
If you have reached out, how did you feel after a counselling session?

21 responses



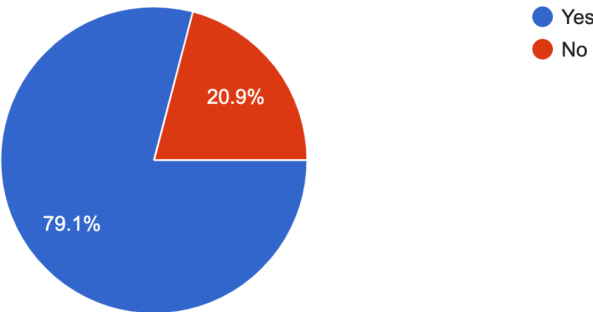
Are you a person who would seek professional advice if need be?

110 responses



Would you recommend your friends/peers to seek professional advice from the campus counsellor when they are in need?

110 responses



4.2 Interview Research

Student Interviews:

We've interviewed four students of VIT to get more information about the topic that can't be derived from the survey. All the interviews are recorded which enables us to analyse the recordings and take notes later on.

Our main goal was to understand whether VIT students are open to reaching out to campus counsellors, and if they found the services to be effective.

Users' Quotes:

- "I wouldn't reach out to VIT counsellors as there is no privacy guaranteed."
- "I would need verification to confirm that they're professional counsellors."
- "Counsellors prioritise VIT over students."
- "There is no privacy to have online sessions on the app with roommates around."
- "I wouldn't know how to express myself to a stranger."

These are some of the quotes stated by the users which can be rather impactful. Throughout conducting the interviews, one point that was reiterated was that of confidentiality. All the students felt that there wouldn't be guaranteed privacy or confidentiality for the information to stay between the student and the counsellor. If the situation seems a bit risky, VIT tends to take action immediately which might be slightly overwhelming for the students. This is the main reason as to why all four of them wouldn't avail VIT counselling services. However, a few of them stated that they would be interested in other external professionals who aren't affiliated with VIT after being fully aware of their degrees.

5. USER DATA ANALYSIS

5.1 Key findings of the survey:

- 80% of the participants have experienced discomfort with mental health. However, only about 14% have reached out to the counsellors on campus.
- About 12% of the participants have been diagnosed with a mental illness before concluding that they have attended sessions with therapists or psychiatrists in the past.
- About 75% of the students are not bothered about what other people might think if they go for counselling. We can infer that strong stigma doesn't exist among VIT students regarding availing counselling services.
- There are still about 15% who aren't aware that such services are available on campus. This prompts us to spread more awareness about it.
- About 80% of the students would recommend their friends/peers to seek professional advice from the campus counsellors.

The survey also asked participants to state why they wouldn't seek professional help, a few notable replies we got are as follows:

- "The college officials mainly base their advice around career and education which wouldn't be helpful always."
- "Privacy issues. Might not feel comfortable sharing it with someone who is not going through it or cannot imagine what it is like."
- "The trade-off between the cadre and cost of therapists and sessions. Being in a university environment, it is slightly difficult to be able to fix appointments and attend them online due to my accommodation status."

5.2 Key Learnings from the Student Interviews:

- An option to choose between VIT counselling services and other external sources must be present.
- A confidentiality clause or agreement within the app is necessary.
- The users would prefer a separate app for this platform rather than integrating it in vtop.
- Chat services or phone calls should be available as well, as sometimes video conferencing might be difficult or inconvenient considering the accommodation.
- Ways to destigmatize the topic of mental health and normalise services such as these.

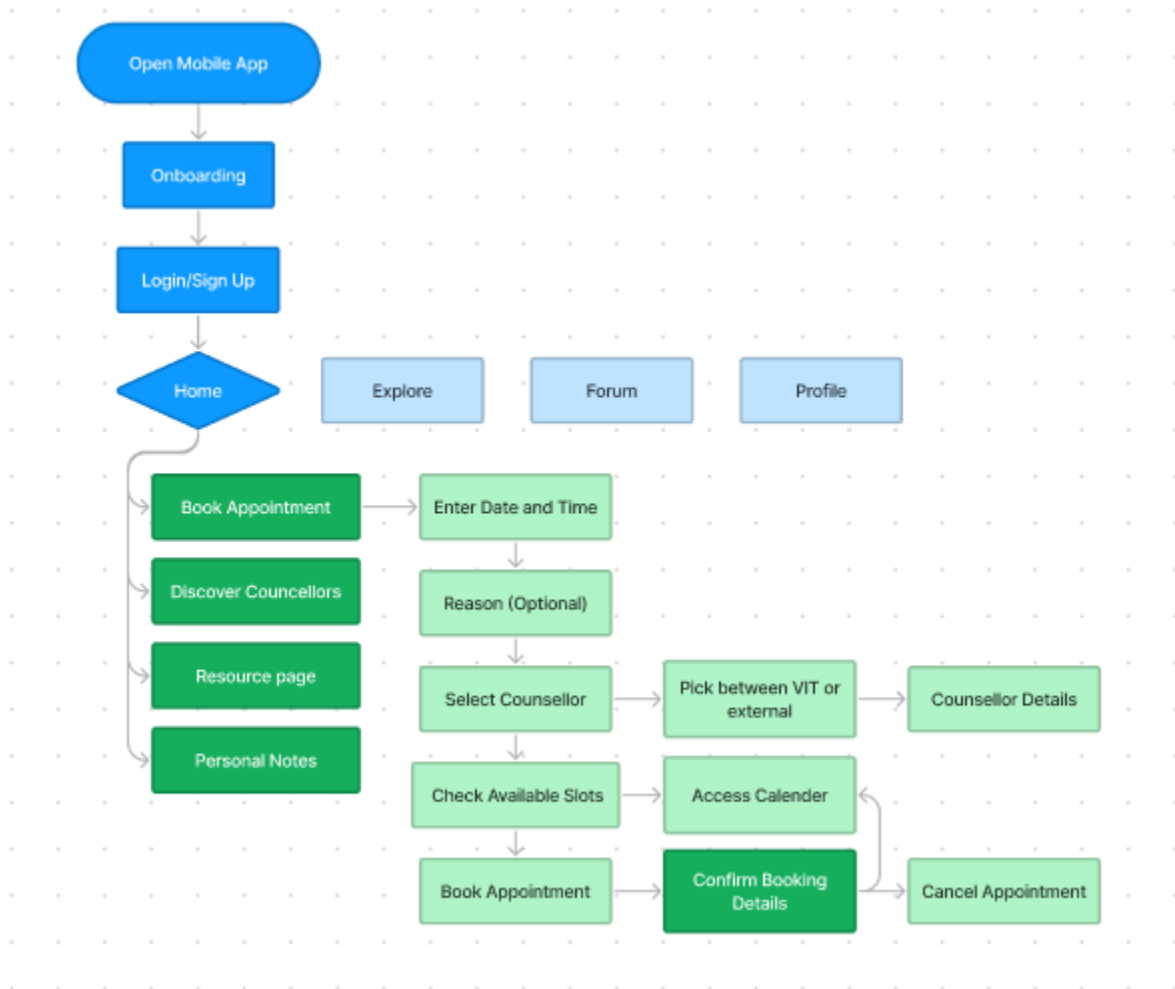
5.3 Key Learnings from the Counsellor Interviews:

We've interviewed two counsellors working in VIT Vellore to gain a better understanding of the counselling procedure.

- Appointments are booked via students, wardens, health centres, friends and roommates etc. There are **11** counsellors in total.
- Students reach out through the boards put up with contact lists in hostel or institutional blocks or through VIT emails.
- Counsellors work two shifts- morning and evening.
- Counsellors **don't** prescribe medicines of any sort, that is taken care of by the psychiatrist who comes to the health centre.
- Confidentiality is maintained until any counsellor realises that the student is a threat, knowing which they take immediate action and inform parents and guardians.
- Counsellors figure out if cases are moderate/severe/mild and then use psychometric tools to determine the level of the problem

6. USER FLOW

6.1 HTA:-



6.2 STORYBOARD:-

VIT Mental Health App



1. Rahul realising he's not feeling well



2. Rahul asking a friend for help and advice



3. Rahul's friend suggesting that he use a mental health app



4. Rahul booking a session with a counsellor



5. Rahul attending his first counselling session



6. Rahul seeing significant improvement after several counselling sessions

7. METHODOLOGY

- **Define the main objectives**

Understanding the user goals and desirable needs as well as the problem first which includes defining the feedback goals and resources, review that will help us choose the right methods and tools.

- **Research**

The research will be conducted using a qualitative and quantitative research approach that is appropriate for usability testing as the concern mobile usability such as ease of use, efficiency, user satisfaction, and app adoption which are all best examined by observing users' behaviours and reactions to the app in their own context and gathering their thoughts.

To help us understand the perspective of a user with regard to travel applications better, a combination of brief survey questions and interviews with individuals from different age groups are conducted to collect data.

- **User persona and built user stories**

The field of user experience centres on the idea that we must design products around people, rather than teaching people how to use products. To determine the characteristics of typical users, field investigations, surveys, longitudinal studies, interviews, and other techniques of user research should be undertaken initially.

The description should be detailed, containing information about the persona's needs, concerns, and objectives, as well as background data like age, gender, behaviours, and occupation.

The fundamental advantage of utilising personas is that they establish a consistent, more precise vocabulary for characterising a specific sort of user, allowing designers to concentrate their goals on a single aim. When making design decisions, the persona serves as a guide for the whole set of qualities, desires, and behaviours that must be considered.

- **Ideate**

In the Ideation stage, design thinkers spark off ideas - in the form of questions and solutions; through creative and curious activities such as Brainstorming and Mind Maps. The goal is to generate a large number of ideas; ideas that potentially inspire newer, better ideas that we can then cut down into the best, most practical and innovative ones.

- **Prototype**

The point of a prototype is to have a tangible visual representation of the solutions discussed throughout the design process. Instead of repeating the information discussed in the ideation phase - a prototype acts as a model that takes into consideration everything discussed.

- **Testing & Validation :**

Comparative Testing

In this stage, we will compare our product with other similar products and distinguish any factors adding up to it, like distinguishing the similarities and differences. It'll help us review our improvisations and counter any problems that we can revise.

This product can be tested in many ways for evaluation, we can decide the appropriate method of testing once we've conducted more research.

Usability Testing

Interviewing actual or future users is the most dependable source of information when it comes to design validation. In most cases, usability testing entails establishing interview scripts that allow you to compare responses to similar sets of questions.

8. DESIGN SCREENS

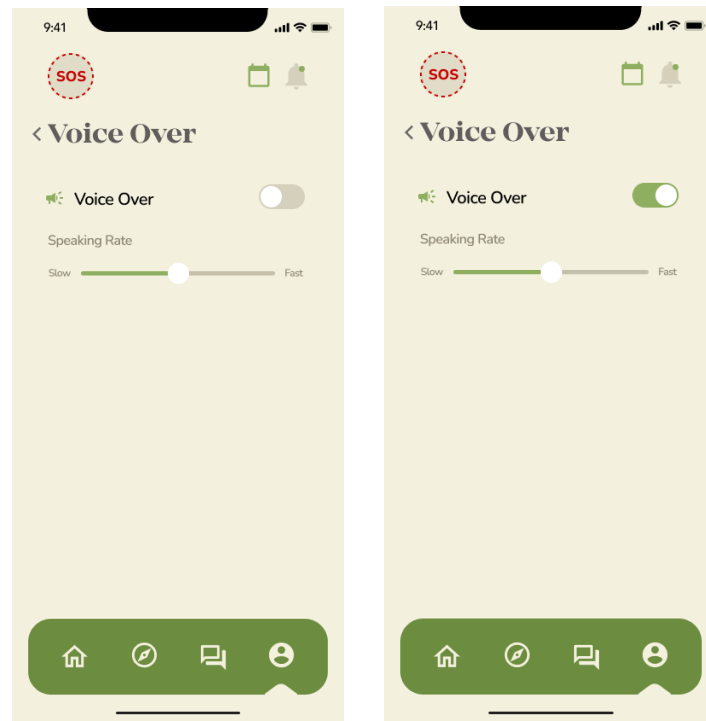


9. HEURISTIC EVALUATION

1. Visibility of system status

The design should always keep users up to date on what's going on by providing suitable feedback in a timely manner. When users are aware of the current system condition, they can learn the results of previous interactions and plan their next activities. Predictable encounters help to build trust in both the product and the brand.

For example: In our app, a slider button is used to indicate whether the feature is turned on or off.

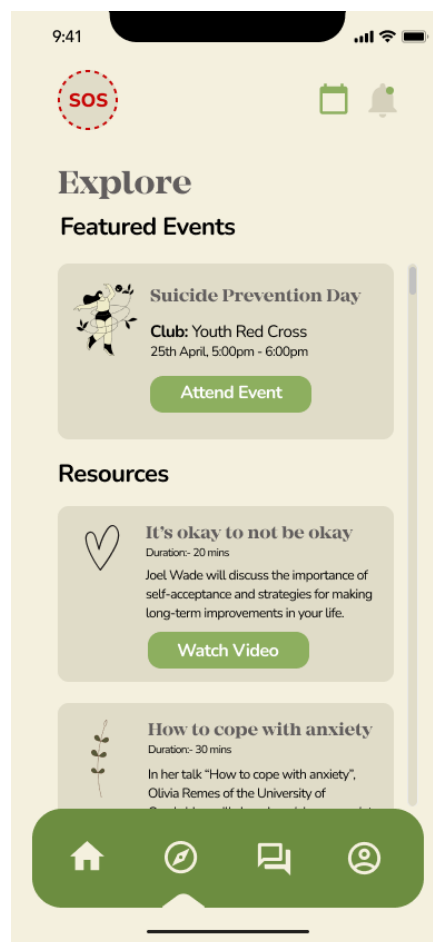


2. Match between system and the real world

The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.

The way you should design depends very much on your specific users. Terms, concepts, icons, and images that seem perfectly clear to you and your colleagues may be unfamiliar or confusing to your users. When a design's controls follow real-world conventions and correspond to desired outcomes it's easier for users to learn and remember how the interface works. This helps to build an experience that feels intuitive.

For example: We have used illustrations for users to empathise and understand the context of the text displayed. A lot of continuous text can be redundant for the user.

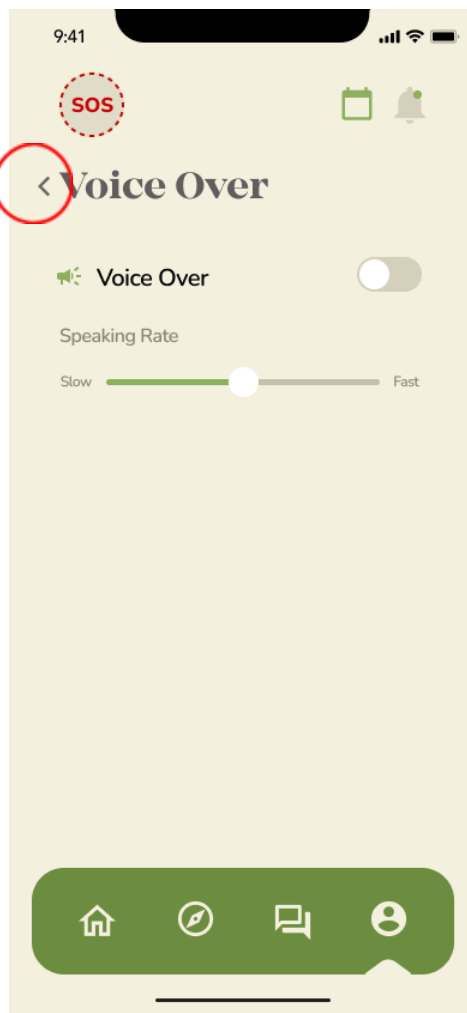


3. User control and freedom

Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.

When it's easy for people to back out of a process or undo an action, it fosters a sense of freedom and confidence. Exits allow users to remain in control of the system and avoid getting stuck and feeling frustrated.

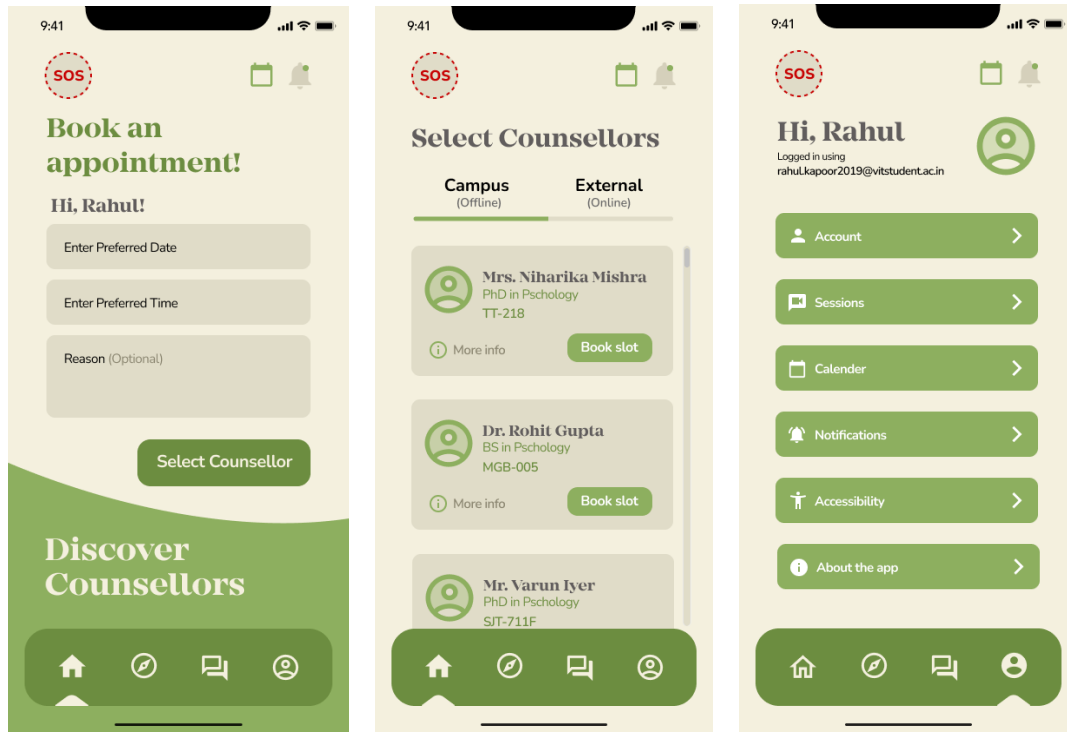
For example: There is a 'back arrow' button for the user to direct back to the previous page if they have accidentally clicked on a page they didn't intend to visit.



4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions.

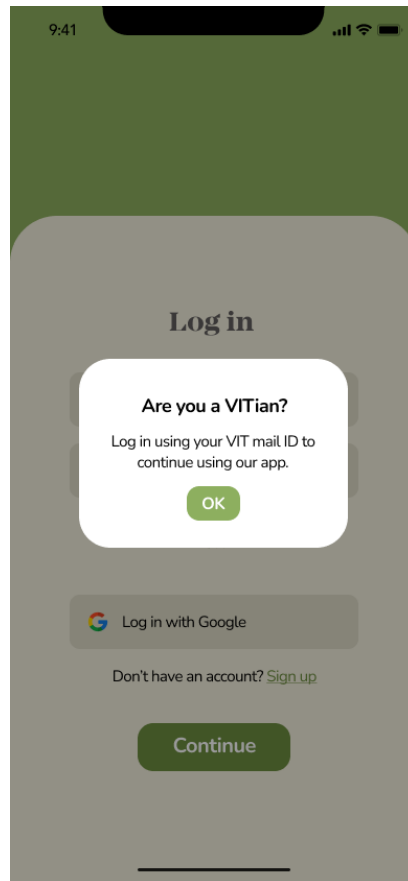
For example: All CTA buttons look the same to inform the users that they perform the corresponding activity as expected. Also, the icons on the navigation bar are consistent and change according to what page the user is viewing at the moment.



5. Error Prevention

While good error messages are vital, the finest designs take care to avoid problems in the first place. Either remove error-prone conditions or check for them and give users a confirmation choice before committing to an action.

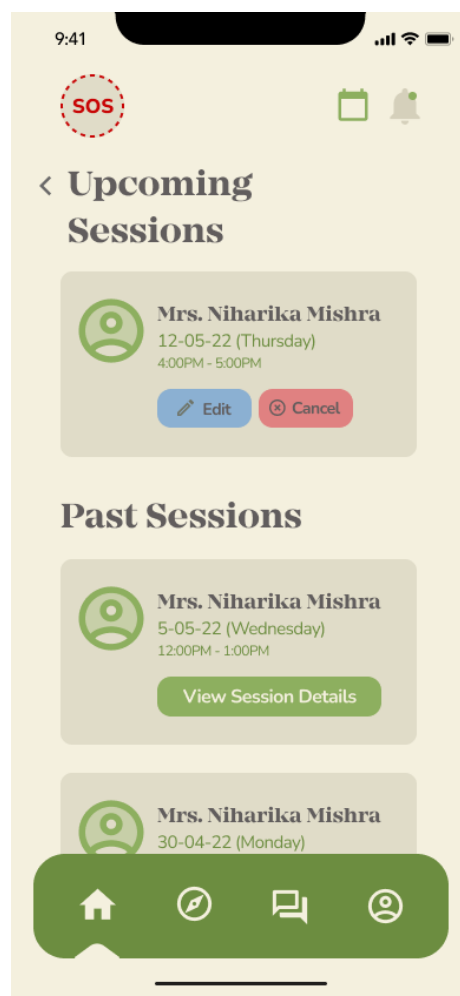
For example: If the user logs in using any mail ID that is not issued by VIT, it displays a pop-up that informs the user on how to log in.



6. Recognition rather than recall

Make items, actions, and options visible to reduce the user's memory load. The user should not have to recall data from one part of the interface to the next. When needed, information essential to use the design (e.g. field labels or menu items) should be displayed or easily accessible.

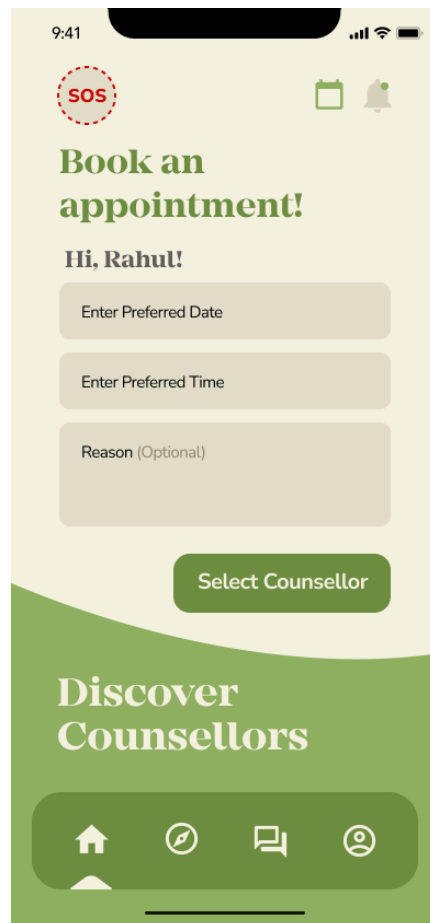
For example: The user is able to view the past sessions attended to keep track.



7. Flexibility and efficient of use

Shortcuts that are hidden from beginner users may speed up the interaction for the expert user, allowing the design to accommodate both novice and experienced users. Allow users to personalise common tasks. Flexible processes can be implemented in a variety of ways, allowing users to choose the technique that best suits their needs.

For example: If a user long presses on the SOS button, it will directly send the emergency signal.



8. Aesthetic and Minimalist Design

Information that is irrelevant or is used seldom should not be included in user interfaces. Every additional unit of data in an interface competes with the relevant units of data, lowering their relative visibility. Ascertain that the interface's visual aspects serve the user's core objectives.

For example: In our app, we have made use of a colour palette, significant white space, illustrations and consistent iconography to make it an enjoyable experience for the users.



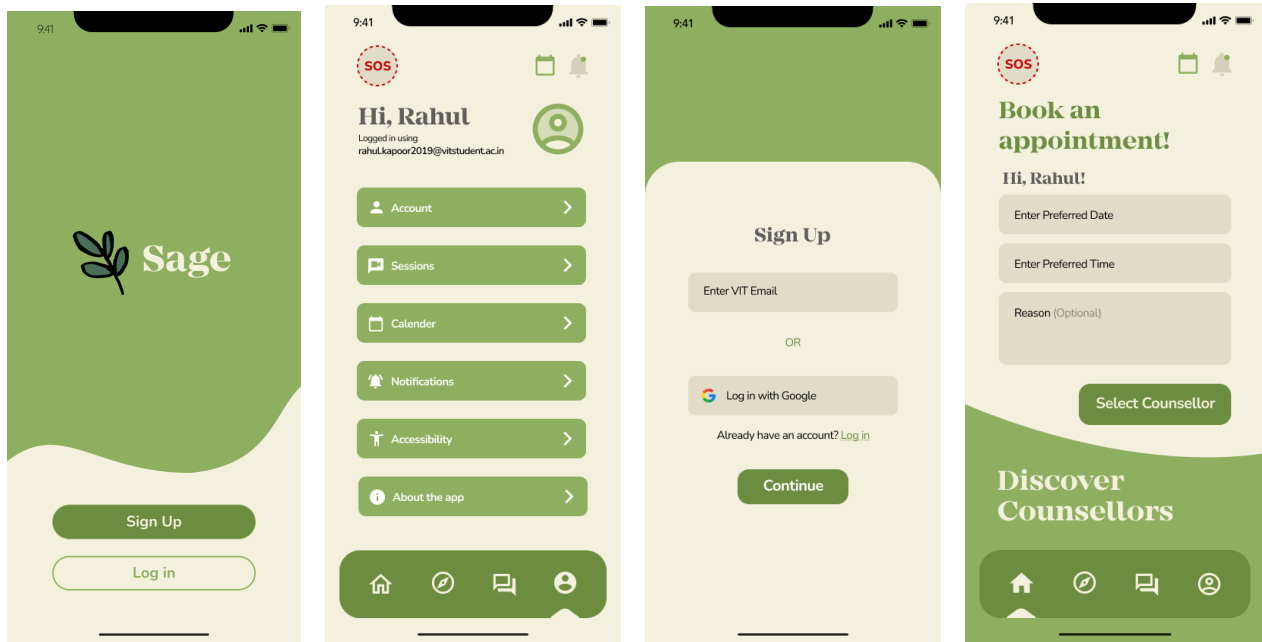
9.1 Shneiderman's eight golden rules

1. Strive for Consistency

It is critical to maintain consistency throughout the site, whether it be in the layout, button size, colour code, or tone utilised when writing the page. This consistency will help you establish your brand and avoid losing visitors as they traverse your site.

In the example below, the website applied this first heuristic, there is a consistency between all the pages present, the layout is the same, the size of the button is always similar, and the colour codes are very specific to this app.

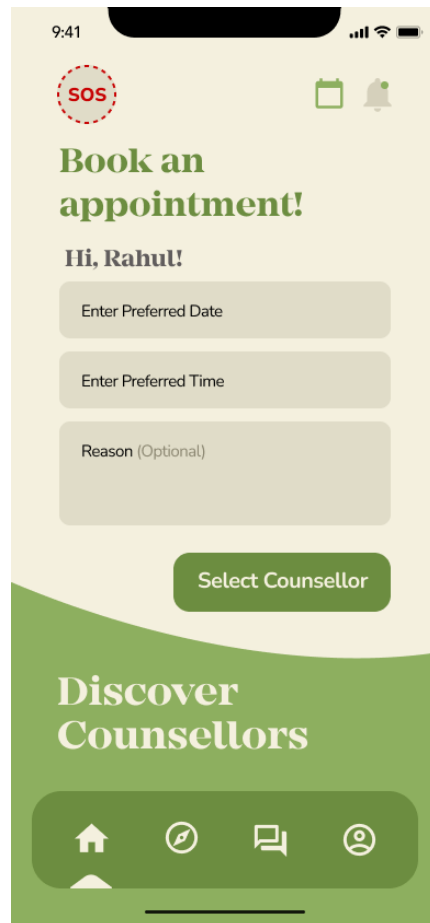
The example below shows that the design of all the icons is consistent, the font size and colour palette remains the same throughout as well.



2. Enable Frequent Users to Use Shortcuts

Allow users to navigate the entire website with just a few clicks. To accomplish this, we establish a decent menu hierarchy, but also make things plain and easy to understand. We Consider including tools for both advanced and novice users, such as keyboard shortcuts or macro capabilities, as our app does with its customers' copy and paste shortcuts.

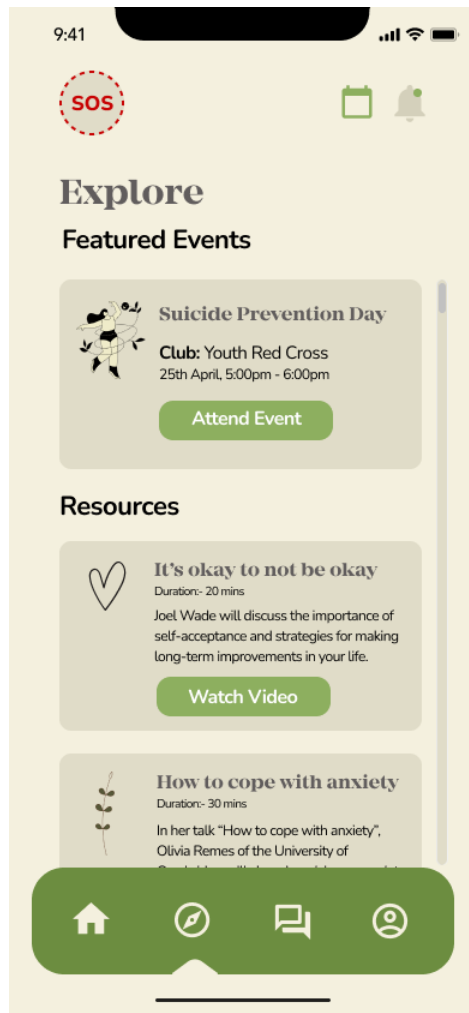
For example: If a user long presses on the SOS button, it will directly send the emergency signal.



3. Offer Informative Feedback

When visitors have completed or are completing actions on the app, it is ideal to provide timely feedback so that they can see where their processes are at.

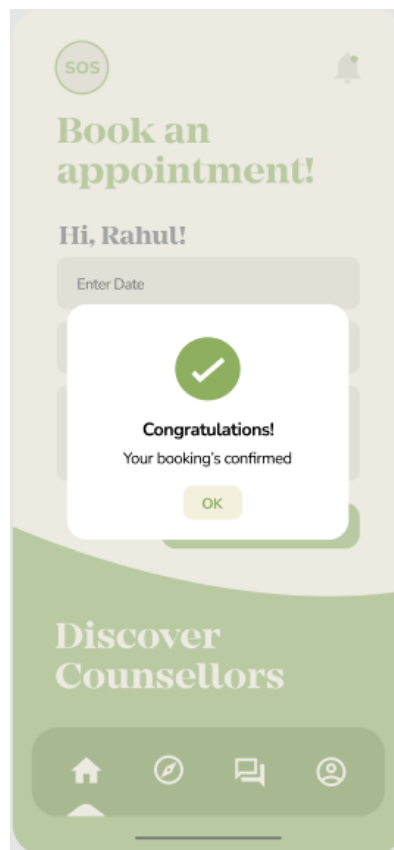
In this wireframe, the users can view where they're at on a page using the scroll.



4.Design Dialogue to Yield Closure

To close any interaction made with a user based on the cause of the interaction :

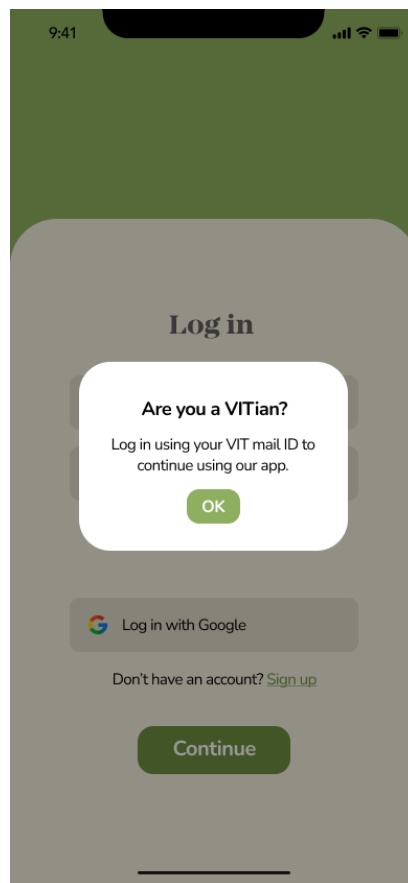
- Thank you message
- Validation message.
- Summary message



5. Offer simple error handling

A decent interface should be built to eliminate as many errors as possible. If something goes wrong, though, your system should make it simple for users to understand and fix the issue. Displaying clear error alerts and descriptive advice to remedy the problem are two simple approaches to deal with mistakes. When you log in to our site, for example, we tell you if your login information is incorrect.

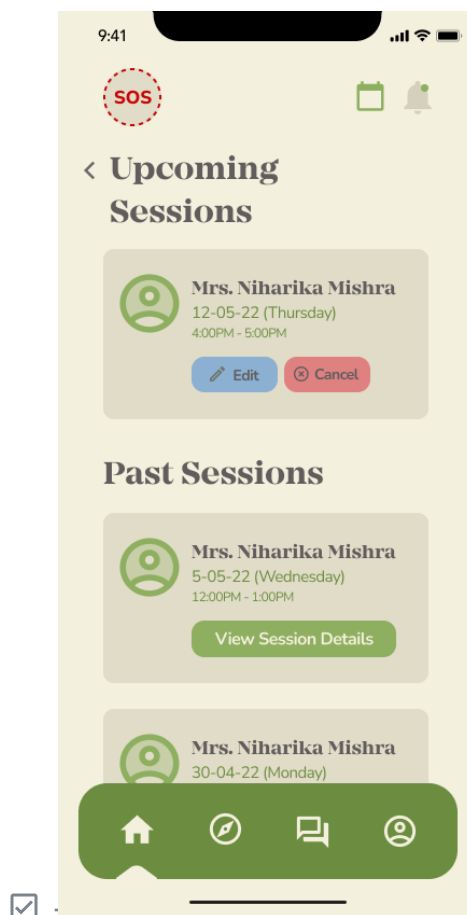
This example displays a message prompting the user to log in/sign up using the VIT mail ID while trying to log in using a personal mail ID.



6. Permit easy reversal of action

It is a really nice thing for the user to discover how easy it is to choose "Cancel" after making an error. Users will be less worried and more eager to explore choices if they know there is an easy solution to address a problem.

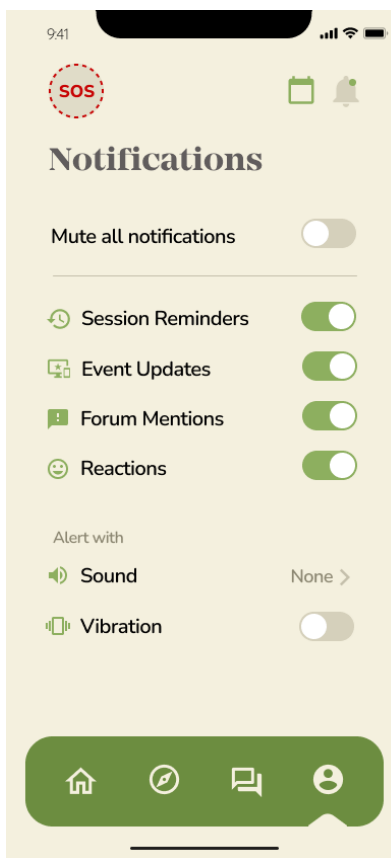
All operations or groupings of actions can be subjected to the regulation. When archiving an email via the Outlook mobile application, for example, a small popup displays at the bottom of the screen asking to cancel the archiving.



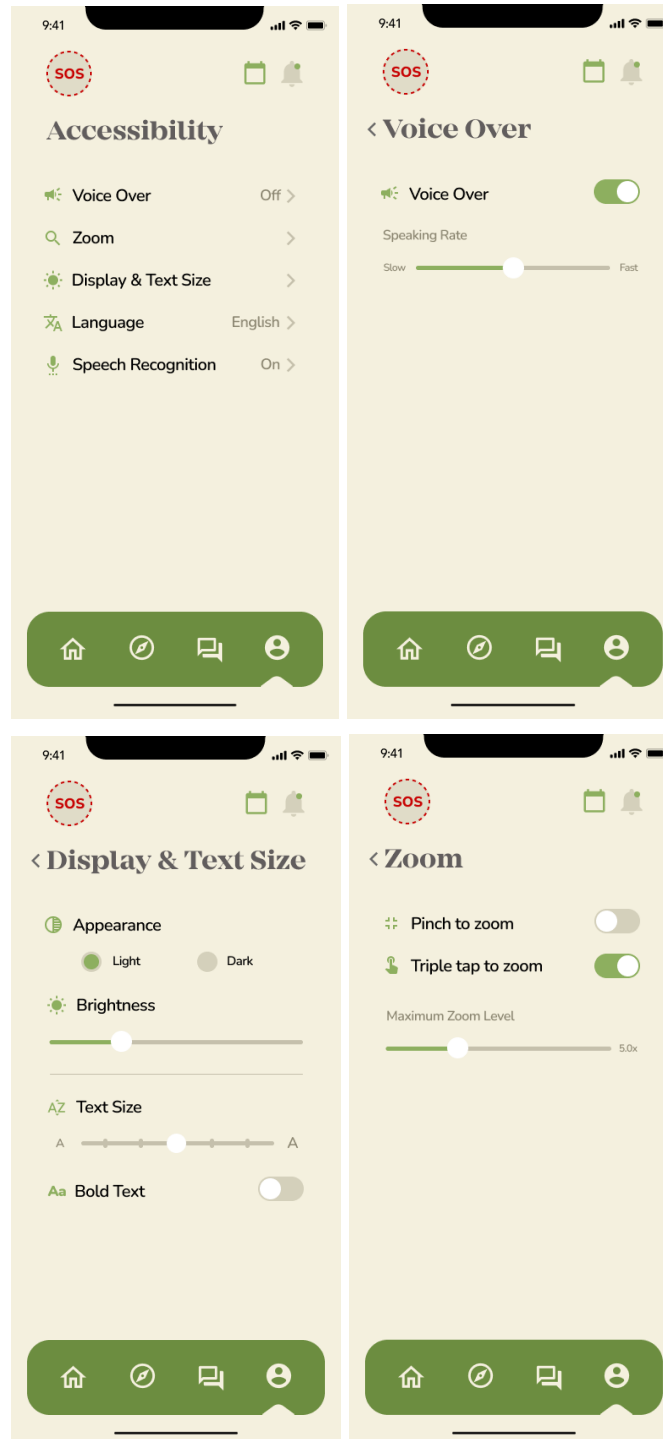
7. Support Internal Locus of Control

Give people control and freedom so they may feel in control of the system. Giving them some type of free will also helps to reassure the user.

For example, in the screenshot below, we're on the Mental Health App, and we can choose whether or not to turn on notifications. The app also lets us choose how many alerts we want to view. By doing so, Our App gives users more choice over what they get.



We also have the **accessibility** feature for the user to be in control of the app. They can modify it in ways they would like depending on their comfort.

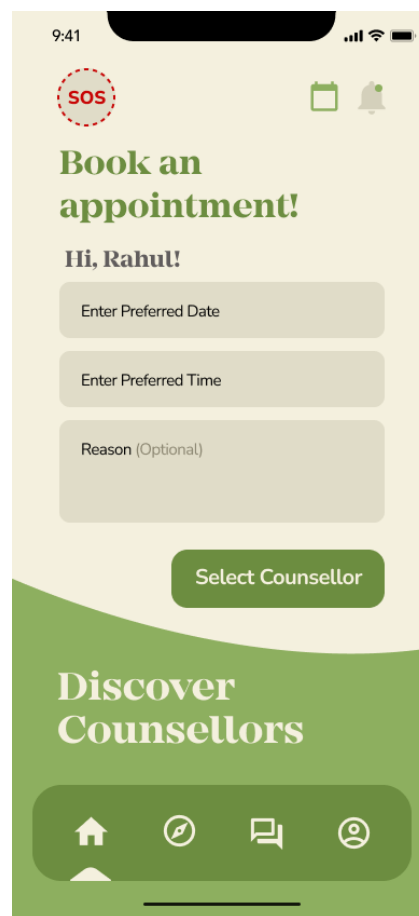


8. Reduce Short term memory load

Due to the limitations of human short-term memory, displays must be kept simple, multiple page displays must be consolidated, window-motion frequency must be minimised, and appropriate training time must be allowed for codes, mnemonics, and action sequences.

Avoid overcrowding the website or application with the same quantity of content. You must figure out which ones should go first, or you risk losing the user's attention. Make sure that your user isn't distracted by needless content no matter where your site is placed, whether it's the home page or the menus.

Our App home page below is very minimalist and allows the user's attention to be focused on the "call to action", most of the information we want to promote is on the page without any other information that could disrupt the user's navigation.



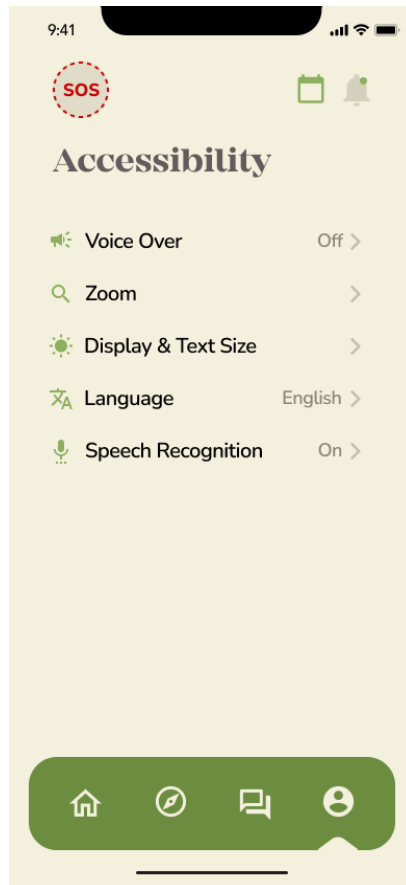
9.2 DON NORMAN'S 7 PRINCIPLES OF INTERACTION

1. Visibility:

Visibility is the basic principle that more visible in an element, with this the more likely the users will know about them and how to use them. The user interface of our app follows this principle as the use of the icons and buttons are very visible and any action is easily predictable and it is easy to follow.

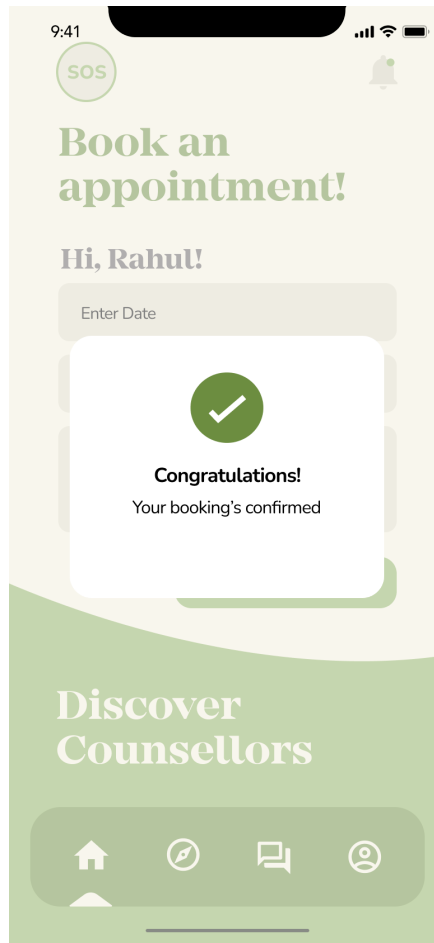
The user won't have any difficulties in predicting the action and functionality of the components in the UI. Hence, the principle is followed.



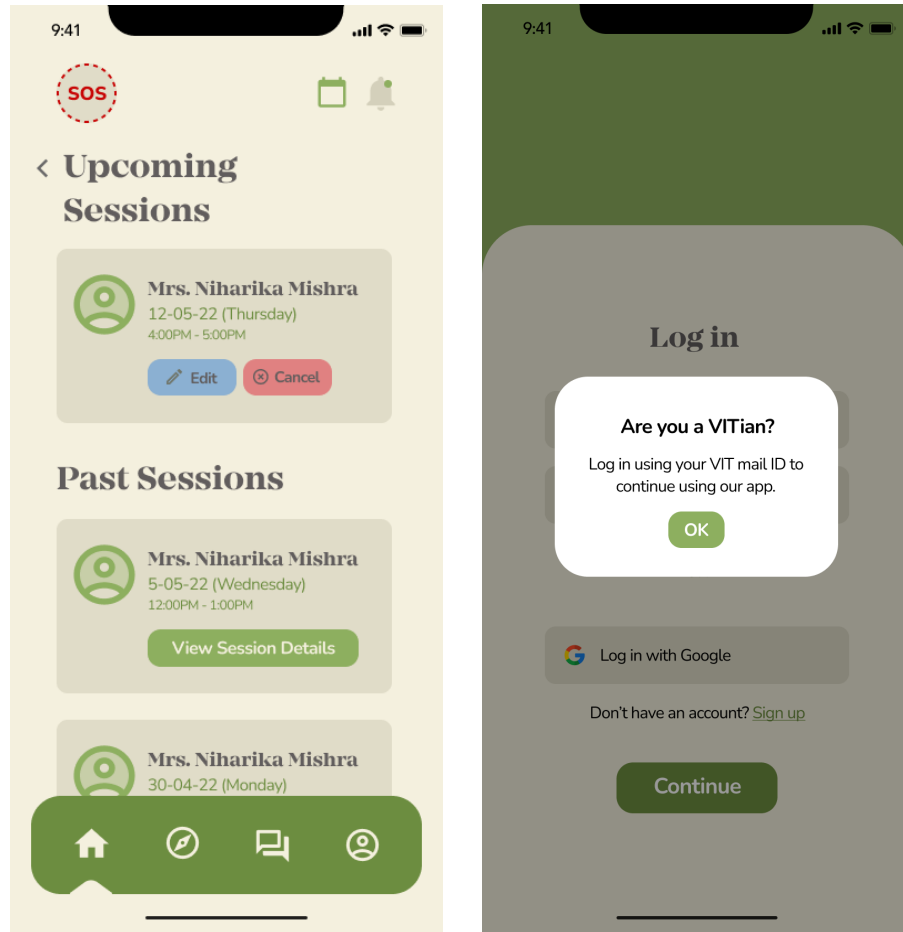


2. Feedback:

Feedback is the principle of making it clear to the user what action has been taken and what has been accomplished. On performing every action, the user should get some feedback about the events occurring in the system.



After booking, the users should be directed to a summary page containing information about the booking detail. Important information should be immediate and clear. For example, when something goes wrong, an error dialogue forces our attention to critical feedback on what has just happened and what to do next.



3. Conceptual Models:

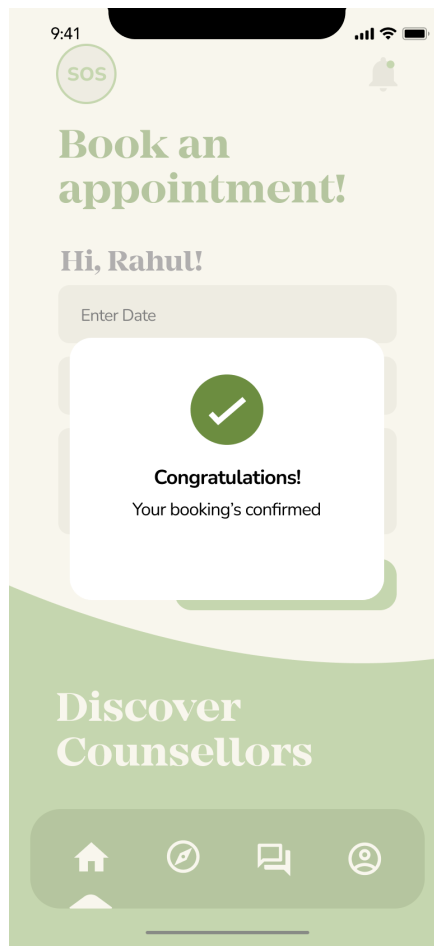
A conceptual model is a simple and useful explanation of how something works. It can be useful to guide the user to perform a certain task in the app. It is the application onboarding experience that demonstrates how to use the product or service. Instructions could be provided in the home page in which its describing how to use the system

4. Affordance :

Affordance is the perceived action and actual properties of an object that help us determine its operation. User perception of any action should match the actual action in the system.

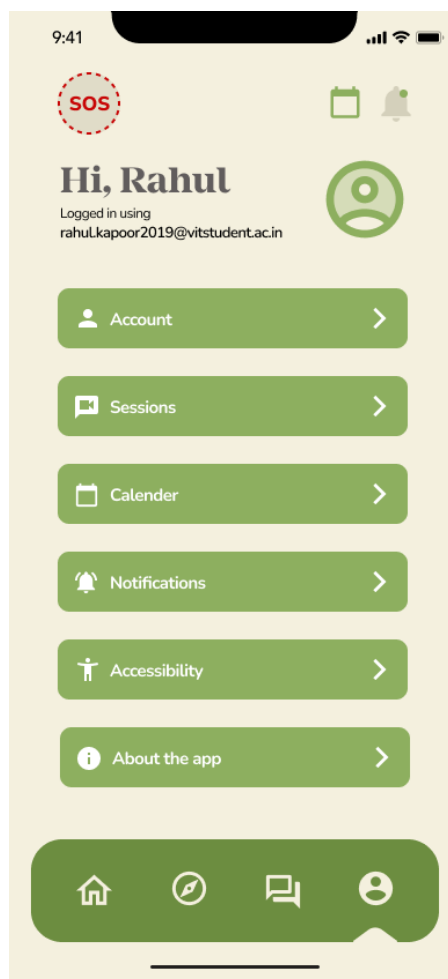
After adding any tasks or performing any action, the user expects to get redirected to the summary page and expects a success popup. Similarly, when clicking booking history, it is expected to show all the appointment history on the screen.

The tasks performed in the app follows this principle of affordance. The system performs as per user expectation and users can easily understand and use the system.



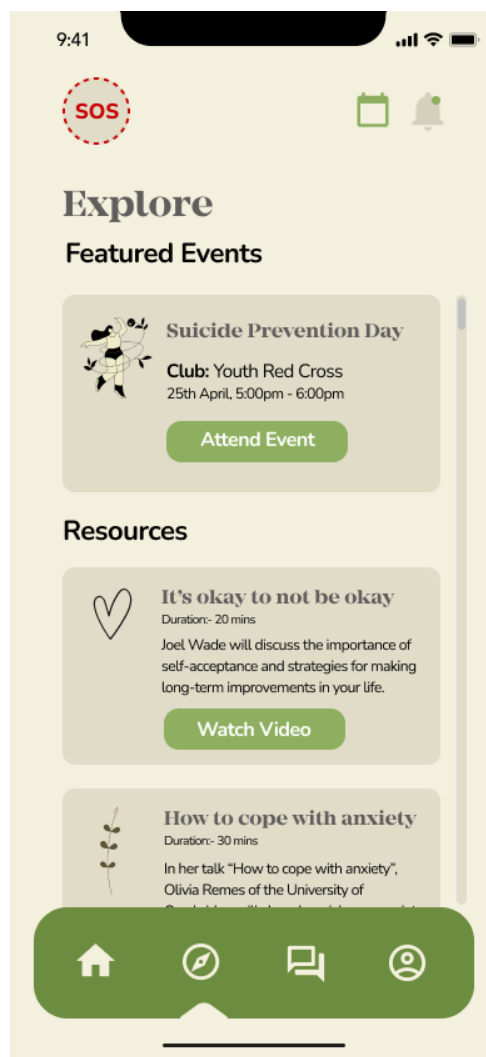
5. Signifiers

A signifier communicates to us where the action should take place. The button used is labelled according to the action. For example: The bar menu items are labelled properly with place holders and in such a way that the users can easily migrate to the desired section by clicking the button.



6. Mapping

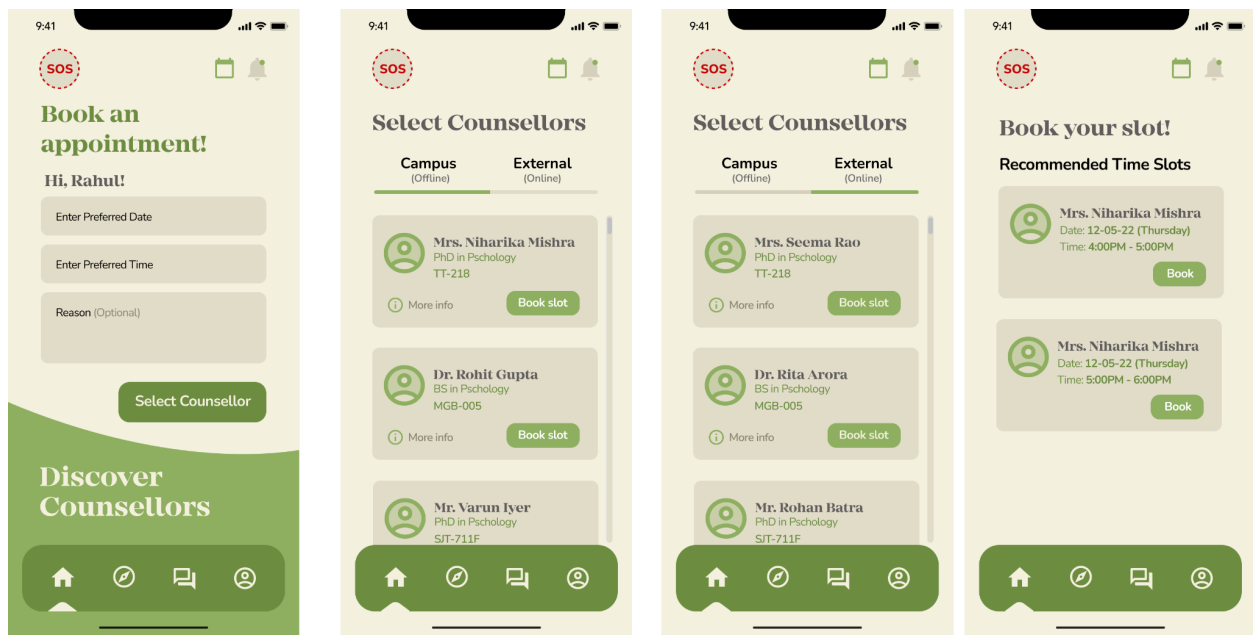
Mapping is the idea that, in a good design, the controls for something will closely resemble their effect. This is best understood with the vertical scroll bar; it tells you where you currently are, and the page moves down at the same pace and sensitivity as the vertical bar. For example: dragging the screen from left to right.



7. Constraints

Constraints restrict a particular form of user interaction with an interface. This is essential because the user could become overwhelmed with the range of possibilities available through an interface. If the user is burdened with too much content it may lead to information overload.

In our app, we've implemented it so that it doesn't burden the user with too much content. The steps to making an appointment as well as finding information about mental health are presented in the form of modules which is easy to follow for the user.



9.3 Evaluation of our app using Nielsen's Heuristic evaluation

Task 1: Login/sign up

Description: Users can sign up using their VIT Mail. Implementation of login is also properly done. Only authorised users are allowed to explore the app.

Violation: None

Used Principles: Visibility of system Status, Error Prevention

Severity: 0

Task 2: App System Control

Description: Allows you to adjust the app systems according to your needs

Violation: None

Used Principles: Flexibility and Efficiency of Use, Visibility of the System Consistency and Standard

Severity: 0

Task 3: Booking

Description: Allow users to easily book appointments according to their schedule and preferred counsellors and allow easy reversal of action . It gives a pop-up that the booking is done successfully

Violation: Doesn't redirect to a summary page

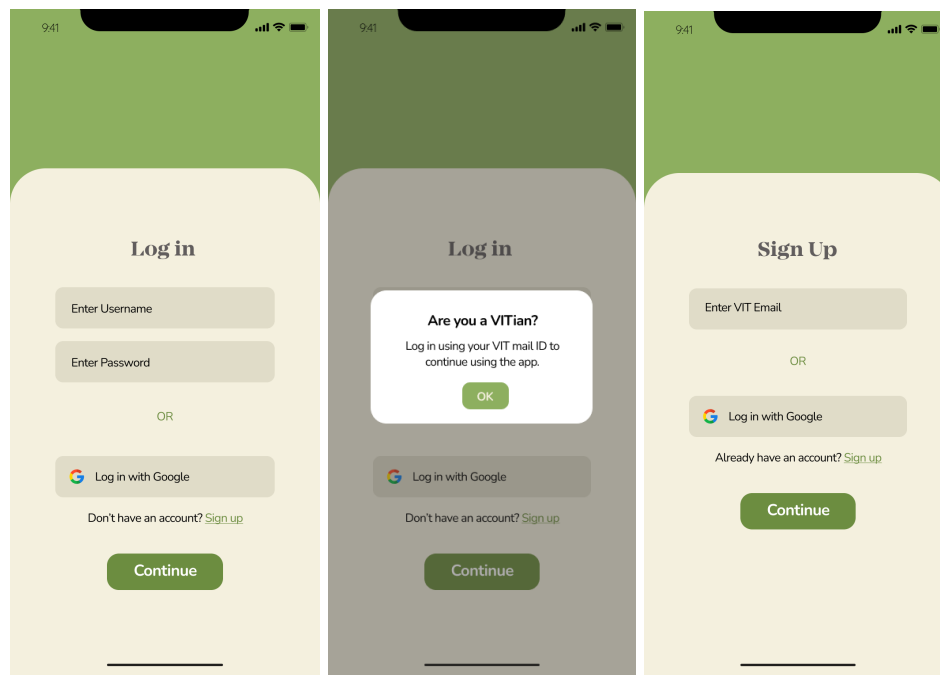
Used Principle: User freedom of control

Severity: 1

9.4 Cognitive Walkthrough

Cognitive walkthroughs are used to examine the usability of a product. They are designed to see whether or not a new user can easily carry out tasks within a given system. It is a task-specific approach to usability. A cognitive walkthrough begins by defining the task or tasks that the user would be expected to carry out. It is these tasks that the cognitive walkthrough will examine for usability – any tasks that can be performed in the product but are not subject to a cognitive walkthrough will not, normally, be assessed during the process.

Task 1 :- Log In/ Sign up



i) Will the user try and achieve the right outcome?

- Yes, the user can conveniently log in or sign up.

ii) Will the user notice that the correct action is available to them?

- Yes, the user can choose to log in or sign up if they don't have an existing account.

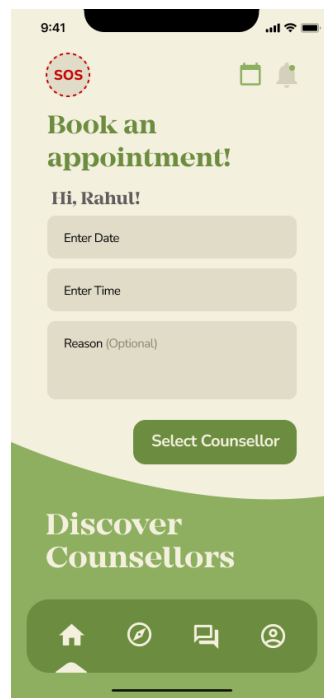
iii) Will the user associate the correct action with the outcome they expect to achieve?

- The user will be allowed to log in if they use the right email ID. If not, they'll be asked to try again using their VIT email.

iv) If the correct action is performed; will the user see that progress is being made towards their intended outcome?

- Yes, the user will be directed to the home page.

Task 2 :- Book an appointment



i) Will the user try and achieve the right outcome?

- Yes, the user can book a counsellor based on their convenience.

ii) Will the user notice that the correct action is available to them?

- Yes, the user can pick a date and time and select from a list of counsellors who are available then.

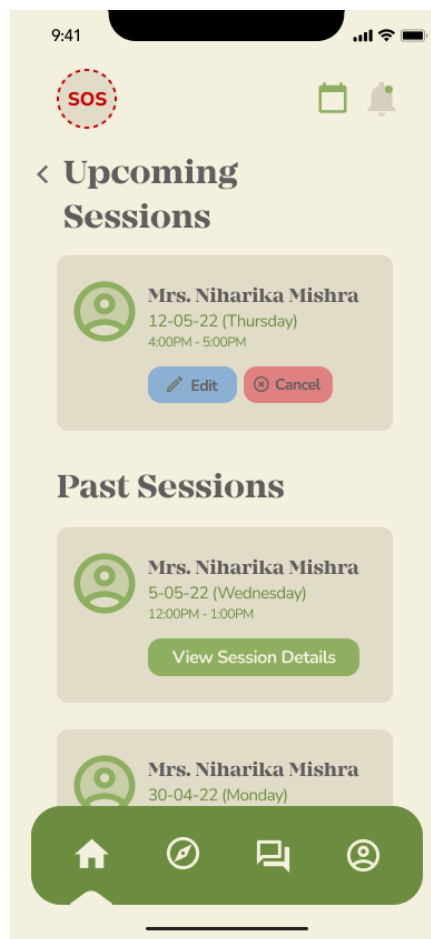
iii) Will the user associate the correct action with the outcome they expect to achieve?

- Yes, the user will be allowed to select a counsellor once they've entered the slot details.

iv) If the correct action is performed; will the user see that progress is being made towards their intended outcome?

- Yes, the list of counsellors will be made available to them.

Task 3 :- View Upcoming sessions



i) Will the user try and achieve the right outcome?

- Yes, the user can view their scheduled appointments with the counsellor.

ii) Will the user notice that the correct action is available to them?

- Yes, the user can edit their preferred slot or even delete the appointment.

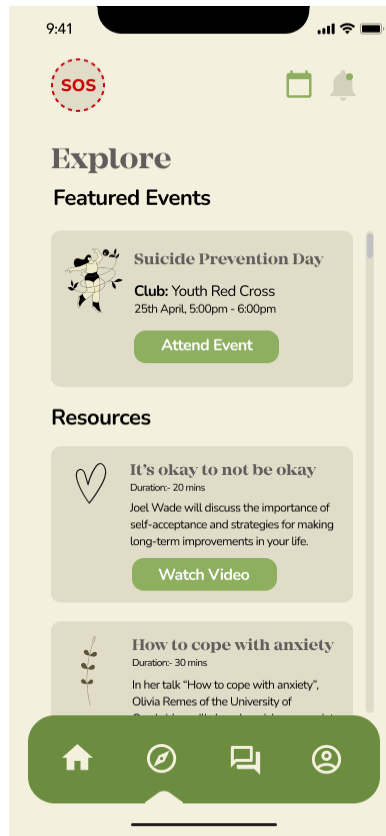
iii) Will the user associate the correct action with the outcome they expect to achieve?

- Yes, the user will be allowed to select a different slot if need be using the edit option or cancel the booking using the cancel option.

iv) If the correct action is performed; will the user see that progress is being made towards their intended outcome?

- Yes, the user will be asked to pick a different counsellor based on the edited slot.

Task 4 :- Access self help resources



i) Will the user try and achieve the right outcome?

- Yes, they can view the various events or featured self-help videos.

ii) Will the user notice that the correct action is available to them?

- Yes, the featured events, articles, videos and other resources will be made visible to the user.

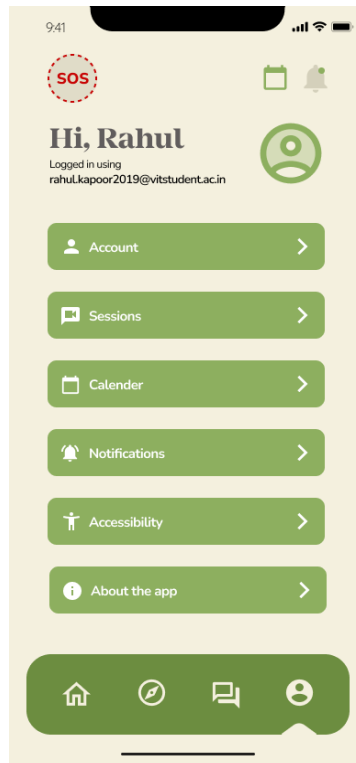
iii) Will the user associate the correct action with the outcome they expect to achieve?

- Yes, the user will be allowed to watch videos and other articles.

iv) If the correct action is performed; will the user see that progress is being made towards their intended outcome?

- Yes, the user will be directed to the respective resource page.

Task 5 :- View Profile



i) Will the user try and achieve the right outcome?

- Yes, the user can view their profile.

ii) Will the user notice that the correct action is available to them?

- Yes, the user can view profile settings on their screen as soon as it loads.

iii) Will the user associate the correct action with the outcome they expect to achieve?

- Yes, the user will be allowed to change accessibility, app, calendar, account, sessions and notification settings on the profile page.

iv) If the correct action is performed; will the user see that progress is being made towards their intended outcome?

- Yes, the user will be directed to the respective settings page.

10. USER TESTING

Open the App

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
ID 001	Onboarding	3	Once the app is opened, the user will view the onboarding process.	The user is expected to view how the app works and learn about a few of the features.	The user found the process informative and proceeded to the Log In/Sign Up page	Pass
ID 002	Login by entering registration number and password	1	This step would include prompting the user for their registration number and password (vtop credentials)	The user is expected to enter their vtop credentials to log in.	The user hasn't logged in before so they are directed to 'Sign Up' first	Fail
ID 003	Login using VIT gmail account	1	This step would include prompting the user for their VIT gmail account only	The user is expected to click on 'Login using google account' and log in via the VIT gmail account only	The google account linked wasn't that provided by VIT and the login failed. The user is prompted to try again.	Fail
ID 004	Sign up if haven't logged in yet	1	This step would include prompting the user to fill in their VIT mail ID	The user is expected to type in their VIT mail ID or click on sign up using google	The user signs up via VIT mail ID	Pass

				account and sign up		
ID 005	Click on ‘Continue’ to view the home screen	1	After entering the log in details, click on ‘Continue’	The user is expected to be taken to the home screen of the applications after clicking on ‘Continue’	The user lands on the home screen after logging in successfully.	Pass

Booking an Appointment

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
ID 101	Click on “Book Appointment”	1	Once the user has successfully login, they can book an appointment by clicking on the button	Button Selected and redirect to “book appointment page”	Selected and redirect to book appointment	Pass
ID 102	User can also enter the preferred time and date	2	This step would required the user to enter their preferred time and date to see which counsellors will be available depending on the user availability	All of the Mandatory Box are filled	Preferred date and time entered.Avai lable counsellors showed	Pass
ID 103	Given a Choice to select campus or	2	After successfully completing the previous step ,	User Select one of the two options	Option Selected	Pass

	external Counsellor		the user will be given an option to select the available counsellors that includes in campus and external counsellors			
ID 104	Select the counsellors	1	The user will select the from the different choice of counsellors available	Available Counsellors Selected	Counsellors Selected	Pass
ID 105	Book a slot	2	This step will allow the user to finalise and confirm their booking	Suggested Slots book	Preferable slots booked by the user	Pass
ID 106	Successful Booking page	1	This Page will be shown once the user has click on the necessary button that confirms their booking	Slots book and a pop up of successful booking shown	Page Showed	Pass

Participating in the discussion forum

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
ID201	Viewing various categories to filter the discussion posts	1	The page will consist of various categories such as 'Featured', 'Most Recent',	The user is expected to filter the posts or content depending on what	The user clearly recognized the categories and filtered the content	Pass

			‘Based on your previous interests’ etc.	category they’re looking for		
ID202	Viewing discussion topics posted by users and acknowledging them	1	The page will consist of various discussion posts posted by the users.	The user is expected to explore various interesting posts put up by the users and acknowledge them.	The user checked out a series of posts about various mental health related conversations and gained some new insights after reading so	Pass
ID203	Bookmarking the discussion post	1	The post will consist of a bookmark button where users can view all of them later.	The user is expected to locate the bookmark button if a post interests them	The user liked the post and made use of the bookmark button.	Pass
ID204	Commenting on the discussion post	2	The post will consist of a feature to comment so various users can have a conversation under posts.	The user is expected to recognise the comment feature and make use of it.	The user found the comment button and aimed to comment	Pass
ID205	Starting your own discussion post	1	The page will have a ‘+’ button at the bottom right corner to start their own discussion post.	The user is expected to understand what the button does.	The user didn’t quite understand what the button was for until they clicked on it. The solution is to label the button as well.	Fail

Experimenting the accessibility features

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
ID 301	To ensure that the buttons are placed in the same section of the screen to avoid confusion to the end users	1	Allowing the users to navigate between pages and still able to do task by reducing memory load	Users are able to identify and do the task easily	Easily work on the task as there is a consistency on the different pages	Pass
ID 302	Ensure that the buttons have the minimum size and be suitable for fingers.	1	Try the app of different people with different size of fingers	The buttons are easily used and the users are able to use and interact the button easily	Users with all size of fingers are able to control the button easily	Pass
ID 303	Ensure that the apps have consistent and natural icons.	1	The consistency of the colours and icon in the pages should be maintain so the users can easily	The users should be able to recognize the different icons related to the action it performed	Users found it easier to do the action by recognizing the icon and their definite colours	Pass
ID 304	Ensure that the texts are kept in Simple, Clear and Visible to users.	1	The Sizes and Text should be short and crisp so the user can used it quickly in an efficient manner	Able to understand the pages easily and carry out the necessary actions	The user is able to understand the pages easily and perform the action quickly	Pass
ID 305	Ensure the closing and opening of applications	1	Allowing users to reduce the time to open and close the	The user is able to open and close the pages	The app is able to close and open easily	Pass

	in different stages.		application without much hinderance	easily and the loading time to open and close the page is minimal	without much time	
--	----------------------	--	-------------------------------------	---	-------------------	--

INTERFACE TESTING

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
01	Login/Signup	The login/ signup is working with valid error messages.	Full name, VIT Email and Password	User signs up and logs in successfully. If the VIT mail ID is not used, then an error message should pop up	The interface is working perfectly. If it is not, an error screen is shown.	Pass
02	Slot booking according to preferred date and time	1) Fill in the preferred date and time in the home page 2) Select either internal or external counsellor. 3) Select available slot according to preferred date and time entered 4) Confirm booking	The slots available should coincide with the preferred date and time entered by the user.	User is able to book a slot according to the date and time preferred and the booking confirmation pops up on the screen	The user is able to book slots according to their convenience with ease.	Pass

03	SOS button working perfectly.	1) Click on the SOS button to redirect to an emergency call. 2) Long press on the SOS button to directly send the emergency signal.	The SOS button within the app works toward reporting any unusual activity or signalling for help within the campus	The user is expected to understand how this button works	The button is working perfectly and the signal was sent successfully	Pass
04	Dark mode and other accessibility features working perfectly.	1) Go to the profile page and click on accessibility. 2) Alter any accessibility features as per the user's convenience.	Users can access any accessibility feature such as display/text size, zoom, speech recognition, voice over etc.	The user is expected to alter the working of the app as per their convenience	The user continued using the app in dark mode and enjoyed the UI	Pass
05	Error message popups	1) Try to log in with an email that hasn't been issued by VIT 2) Click submit	Invalid data field	Error message along with ways to fix the problem should be displayed	Error message shown	Pass

USER ACCEPTANCE TESTING

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
01	The buttons are taking the user control to the correct page	All the buttons are leading to the page the button specifies	CTA buttons should have appropriate labels that redirect the users to the page that is expected	On clicking a particular CTA button, the expected page is supposed to open	The expected pages are opened	Pass
02	Prototyping transitions are working perfectly	To check if transitions of the scroll bars, buttons, sliders etc are working properly	The activity features on the app should transition as expected	The user should understand how the buttons, sliders or scroll up bars work with ease.	The user was able to use all activity features comfortably.	Pass
03	Language translation is working perfectly.	1) Go to the profile page 2) Click on the language button	The language of the app can be changed according to the user's convenience	The language should be free of grammatical errors	The user was able to use the app effectively.	Pass

User Problems and Suggestions

- The '+' button to start one's own discussion can be more prominent in the discussion forum page.
- Not sure what the 'SOS' button can be used for in this scenario.
- Discussions in the forum page can turn into inappropriate or irrelevant conversations or interactions. A button to report spam can be added.
- VTOP credentials contradict the idea of having anonymous usernames.
- No guaranteed confidentiality.

11. CONCLUSION AND FORESEEABLE ENHANCEMENTS

This case study has been a great learning experience right from identifying the problem to executing the solution. The various stages of the design thinking process served as a roadmap for coming up with a solution. Mental health awareness is the need of the hour and apps like Sage help streamline the avenues available to someone seeking assistance; in this case, the students of VIT.

In future iterations, we would like to add features such as:

- Have a chatbot or a chat feature directly with a therapist for users who need to speak to someone urgently
- Other generic features like notifications, smart-calendaring, the ability to share articles across social media platforms, etc.

12. REFERENCES

[The influence of smartphone addiction on mental health, campus life and personal relations - Focusing on K university students -Journal of the Korean Data and Information Science Society | Korea Science](#)

<https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01226/full>

<https://www.cambridge.org/core/journals/psychological-medicine/article/abs/machine-learning-in-mental-health-a-scoping-review-of-methods-and-applications/0B70B1C827B3A4604C1C01026049F7D9>

https://www.researchgate.net/publication/346277429_Original_Research_Article_Mobile_Apps_for_Mental_Health_a_content_analysis

https://www.researchgate.net/publication/317646592_Mental_and_Physical_Mobile_Health_Apps_Review

<https://uxplanet.org/lessons-learnt-from-redesigning-a-youth-mental-health-service-website-b3de127f0cfb>