



Women In STEM

A detailed design report

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Introduction

Be it young girls lacking awareness and mentoring, undergraduates in non STEM streams looking to switch, graduates not finding jobs, working professionals willing to restart after a career break or explore new streams, we planned to intend a common platform for all women.

In the following sections, we present a comprehensive report of our literature survey, process of arriving at the problem statement, designs, analysis and learning outcomes.

Literature Survey

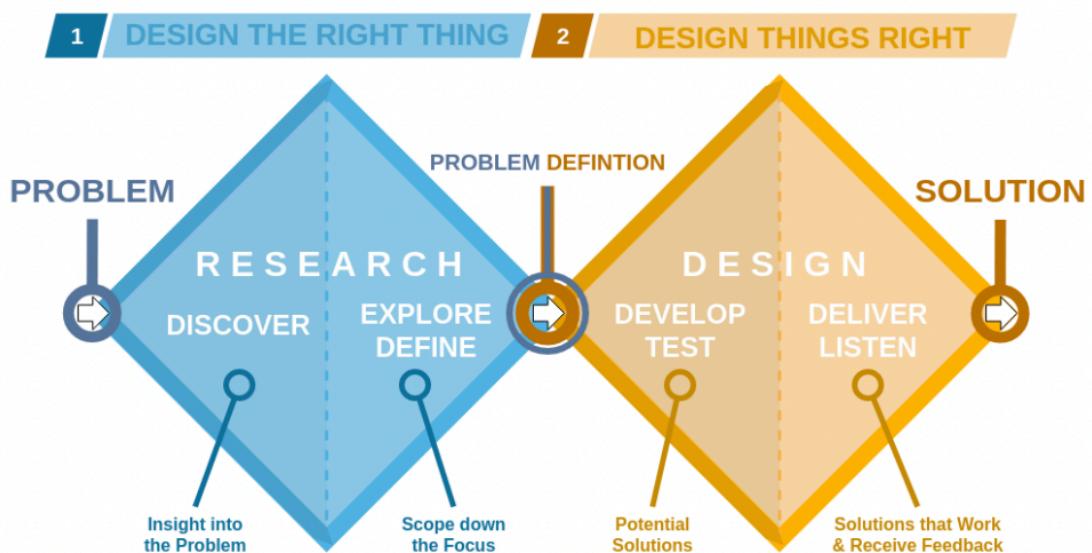
The following networks are some of the existing solutions in this space.

1. National Girls Collaborative Project: Provides a network of educators and access to necessary study materials for girls .
2. Women in Engineering Proactive Network: Reaches almost 150 campuses and 60% of female engineering students in the country.
3. Million Women Mentors: Working to guide women leaving STEM with the help of their network of 1 M experts.
4. Scientista: Fosters campus level student organisations to encourage young women aspiring to become scientists.

5. Association for Women In Science: Advocates for changes in policies at the local and national level to ensure fair pay and work climate in the interest of women in STEM.

Though various organisations and slack channels are trying in their own capacity to increase the numbers of women in STEM, there's still no unified platform for all.

Design Methodology



Discover-Research Phase

Initial Situation or Challenge: Gender ratio is skewed in the various STEM fields. We try to figure out the causes by talking to various women who are pursuing STEM (to know what motivated them to take up STEM) and also those from non-STEM backgrounds (to know why they didn't prefer to take up STEM)

Methods used: We conducted a survey containing a set of questions we deemed most suited to help form a well defined problem statement.

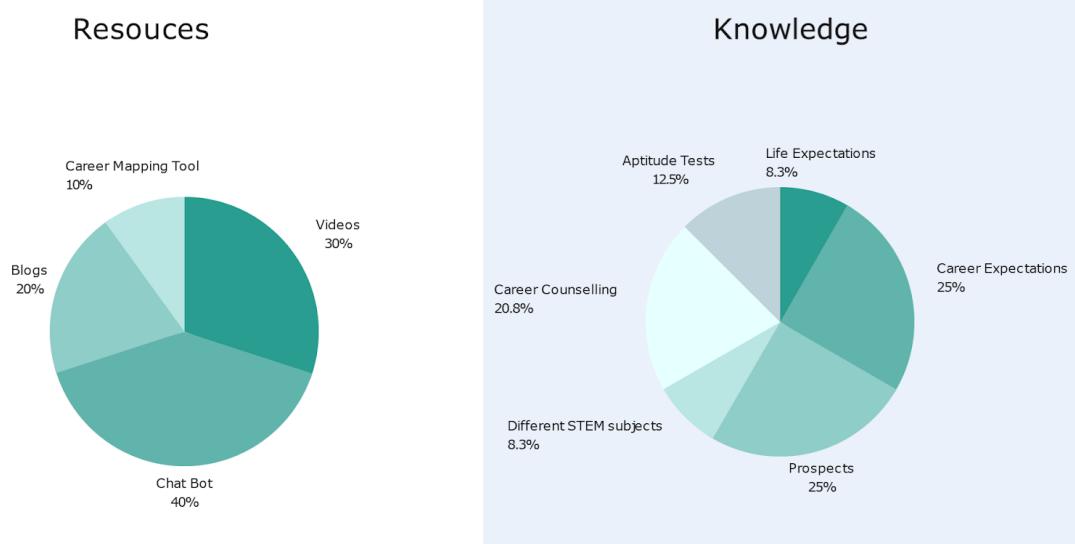
User study was conducted in two phases to understand the needs, constraints and capabilities of the users and the limitations of current solutions.

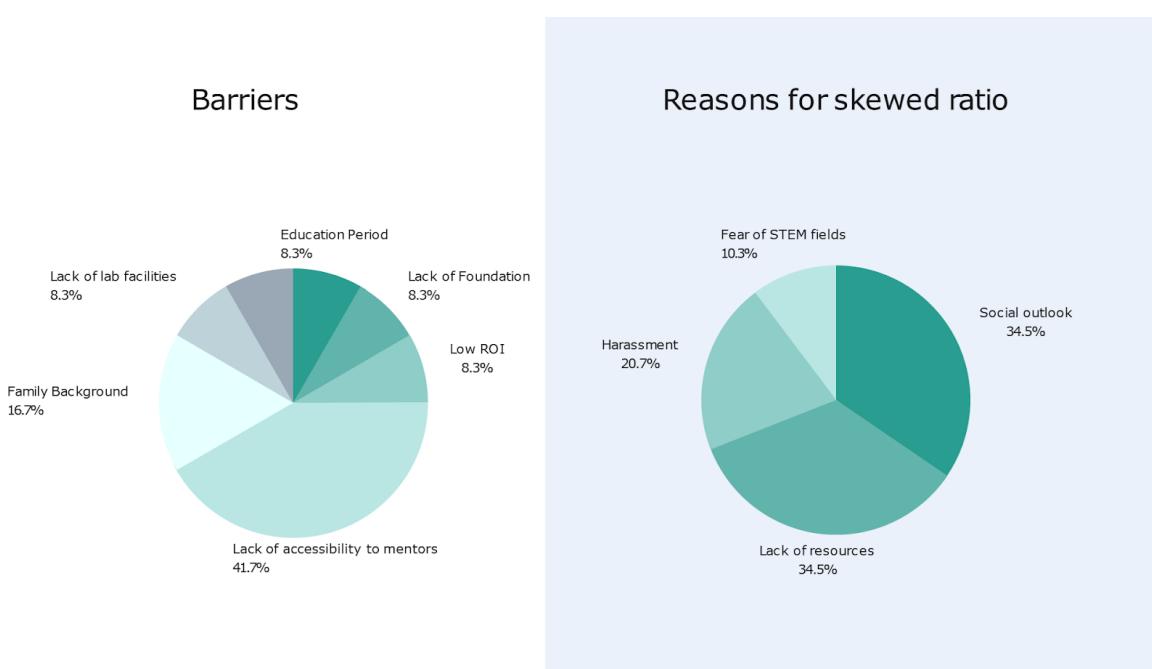
Iteration 1

User base: Since our target population consisted of only women, we performed a purposive sampling in which we made sure that only women (from all age groups and backgrounds) were surveyed. For this iteration we had about 25 people.

A google form was floated with the following questions. Questions were made clear, not leading and objective wherever possible.

Define-Synthesis Phase first iteration





Problem Statement after first iteration

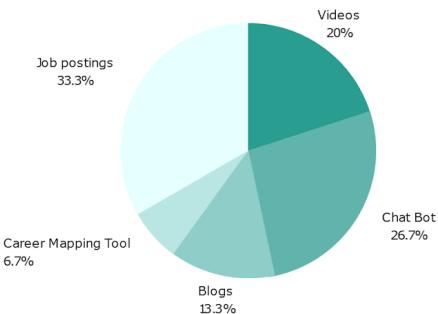
Development of a social networking platform for women to connect with other women aspiring to join or already in STEM.

Iteration 2

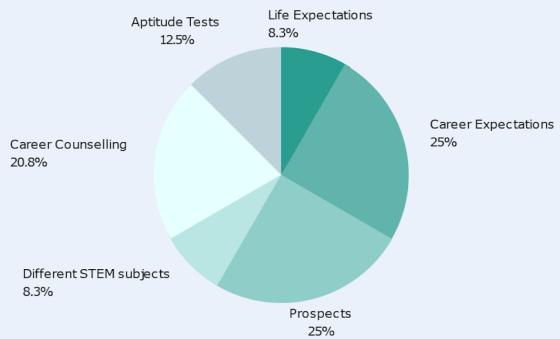
User base : Purposive sampling was used like last iteration where only women were surveyed. Sample size was around 40 people.
A google form was floated with the following questions. Questions were made clear, not leading and objective wherever possible.

Define-Synthesis Phase second iteration

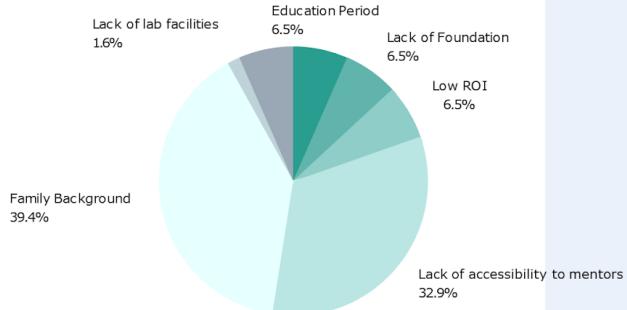
Resources



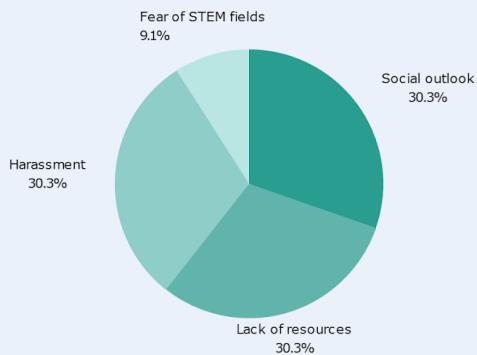
Knowledge



Barriers



Reasons for skewed ratio



Design features finalised after Iteration 2

- A controlled platform to allow women to inspire others and themselves towards a career in the STEM fields in a safe, easy to

access, online environment.

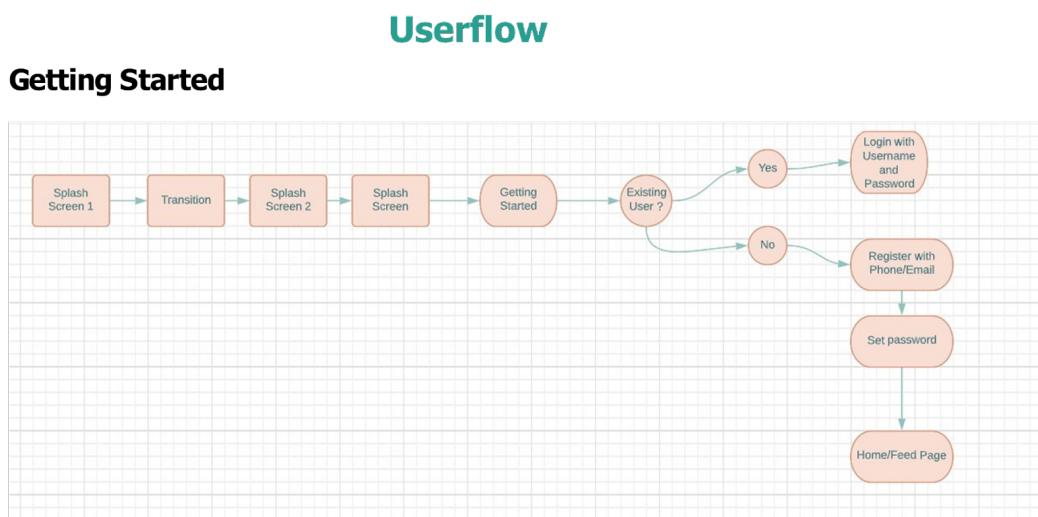
- Encourage women to turn to blogs and videos on various STEM topics and experiences of other women in STEM to help build/further their own careers.
- Provide an option to the users to connect and interact with others having similar interests or pursuing related fields.

Reasoning: An app would be affordable, could be made easily available and would not have any establishment cost. From the survey results, we also realized that there were a lot of resources available but what women were lacking is companionship in their journey towards excelling in STEM. We also settled on a color schema for the app which will be explained further at the end. The features to be added in the app were also decided on the basis of user surveys.

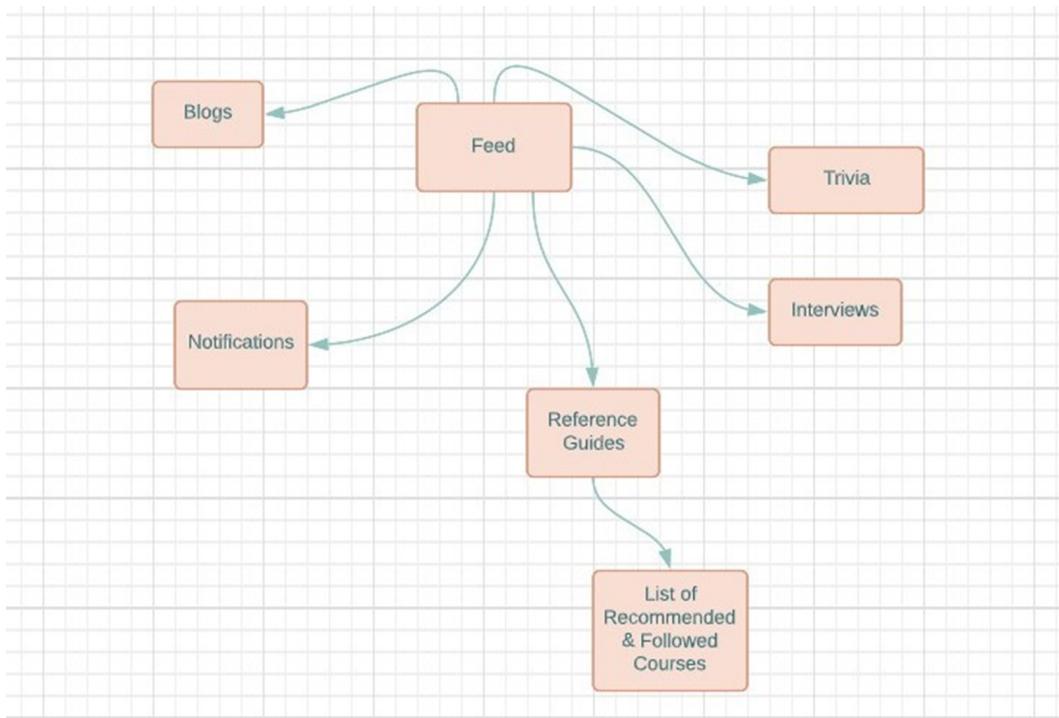
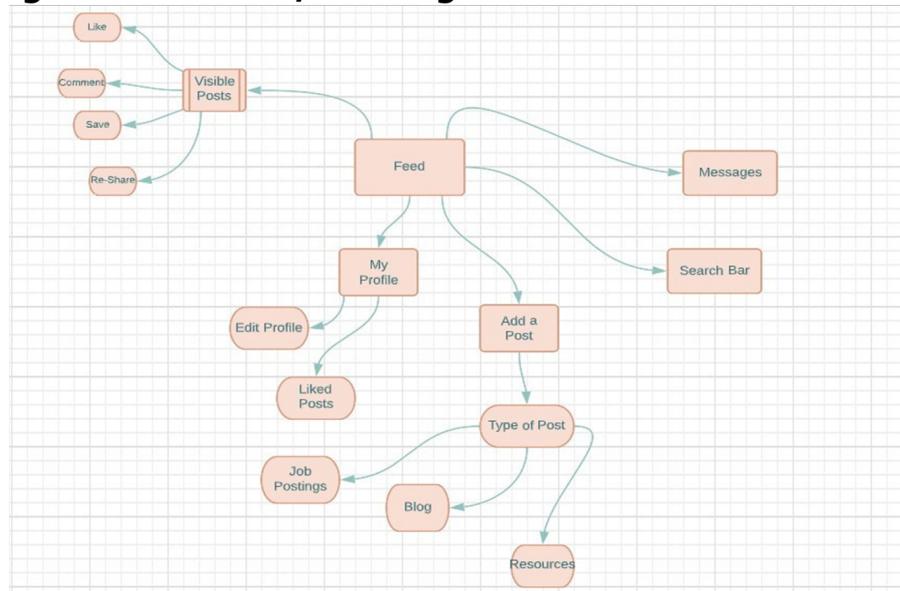
Develop-Ideation Phase

Following the double diamond model, we conducted a series of prototyping and testing iterations.

User Flow design:

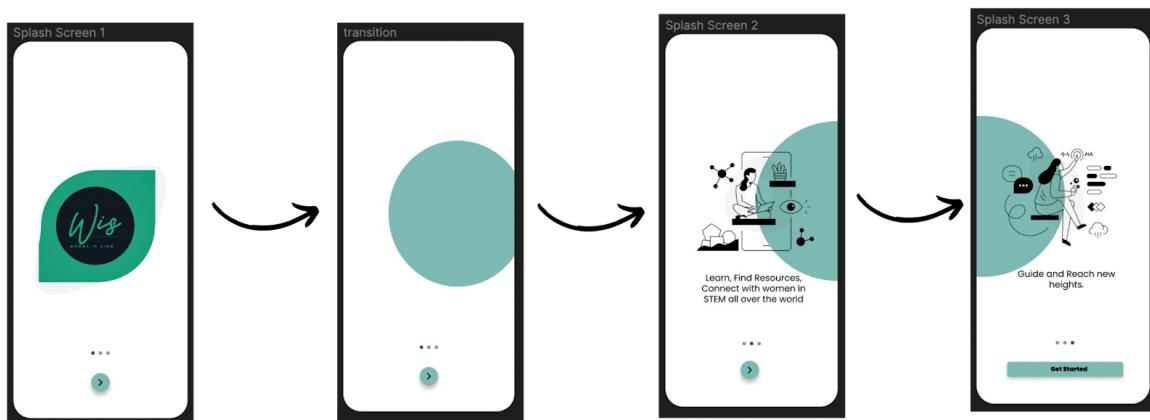


Navigating from the Home/Feed Page

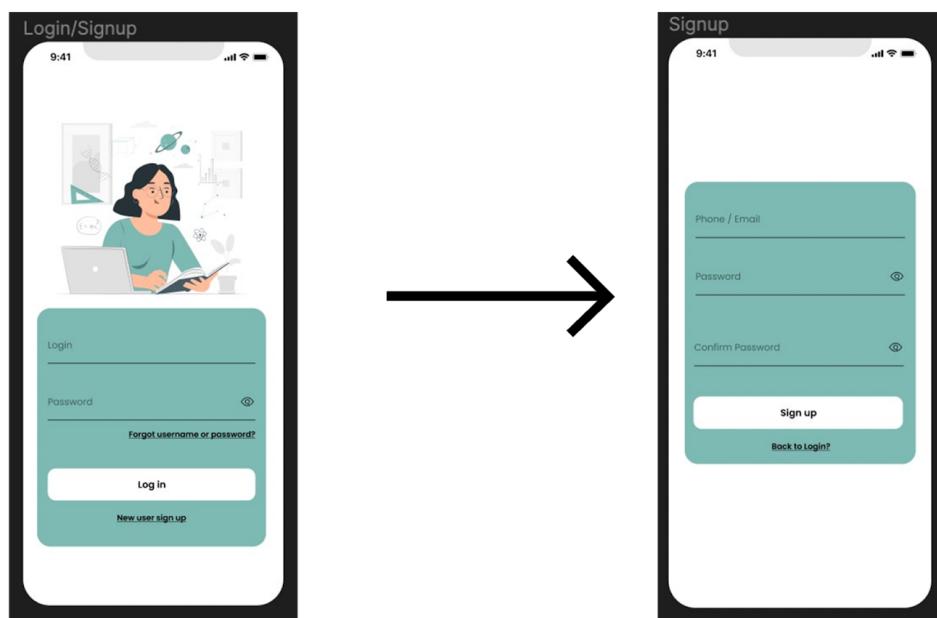


First wireframe design:

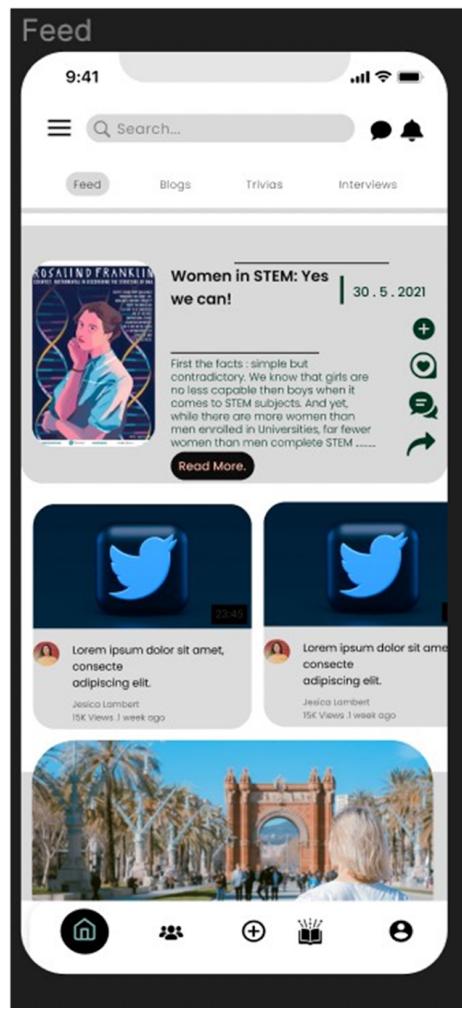
Getting Started



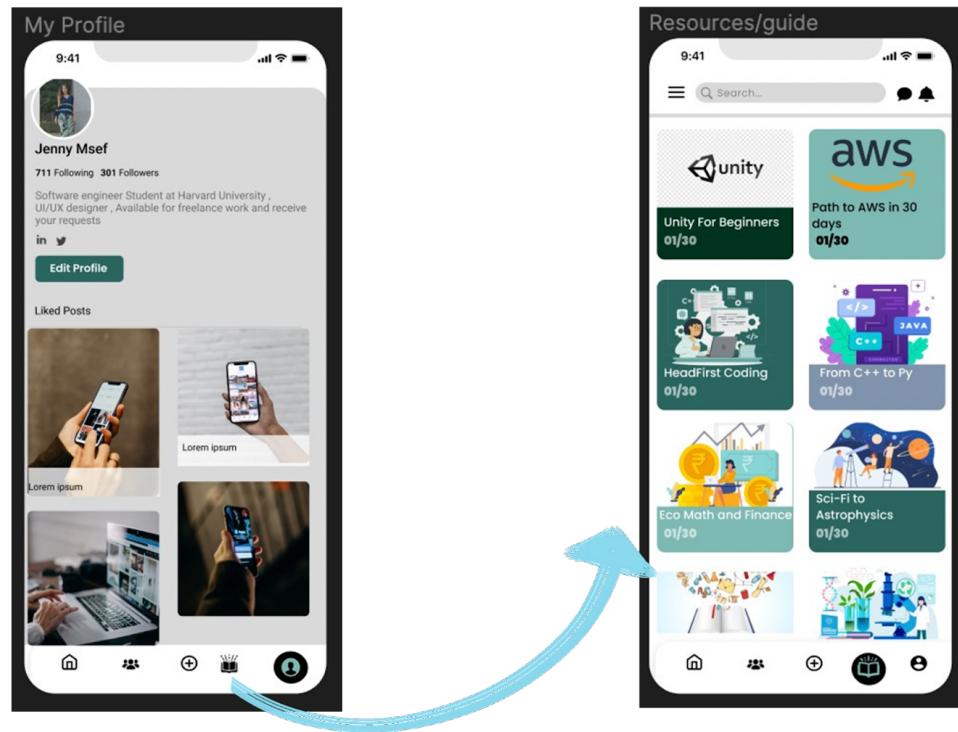
Login and Signup



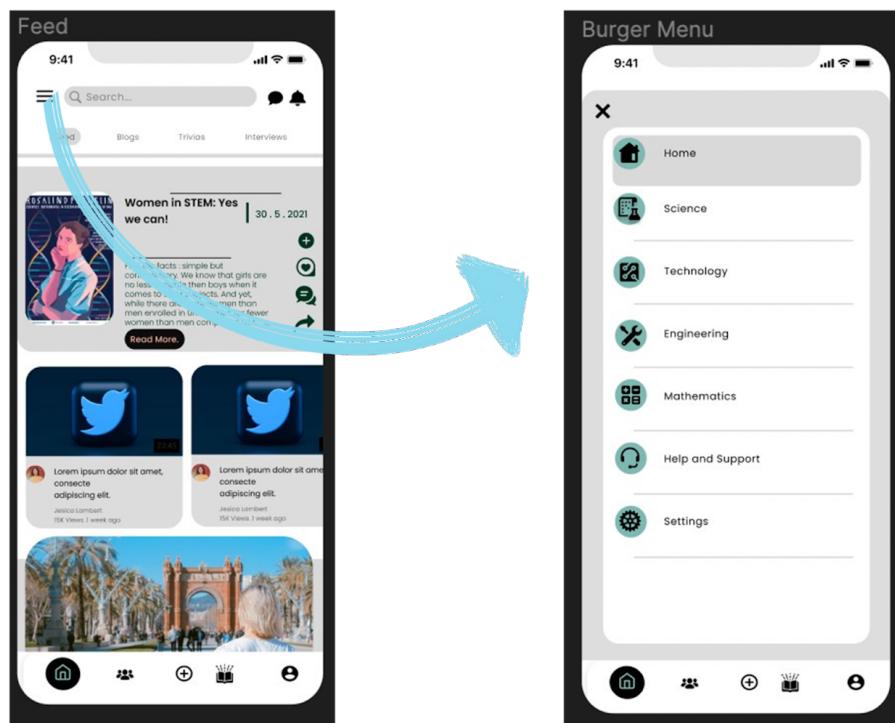
Feed/Home Page



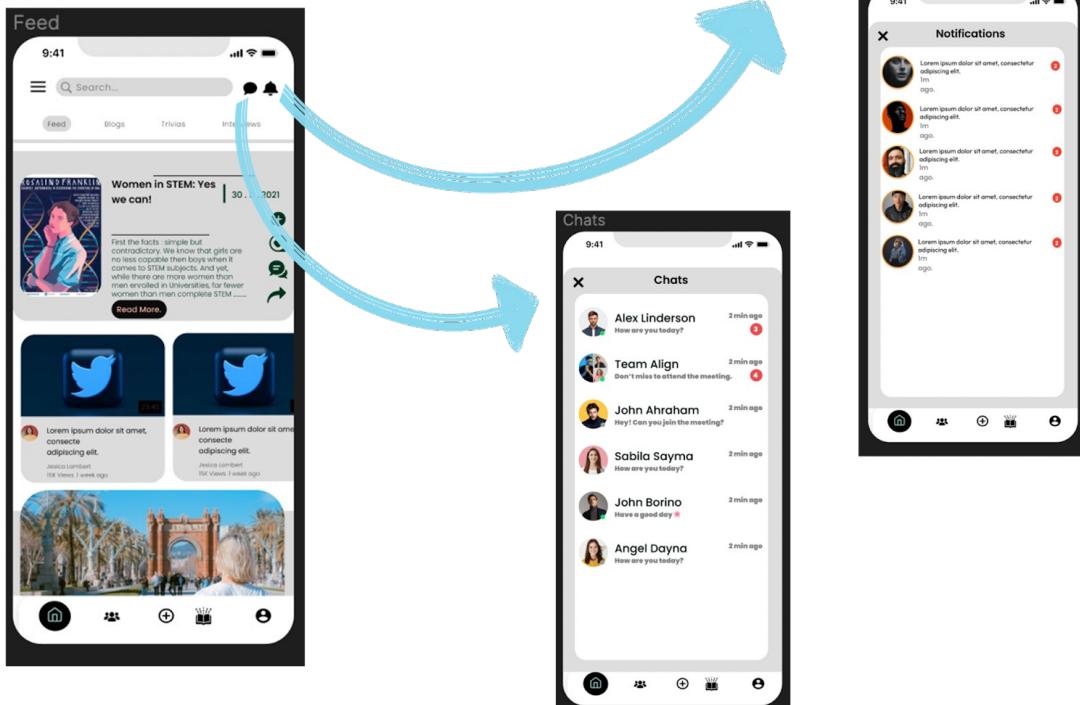
Profile Page and Resources Page



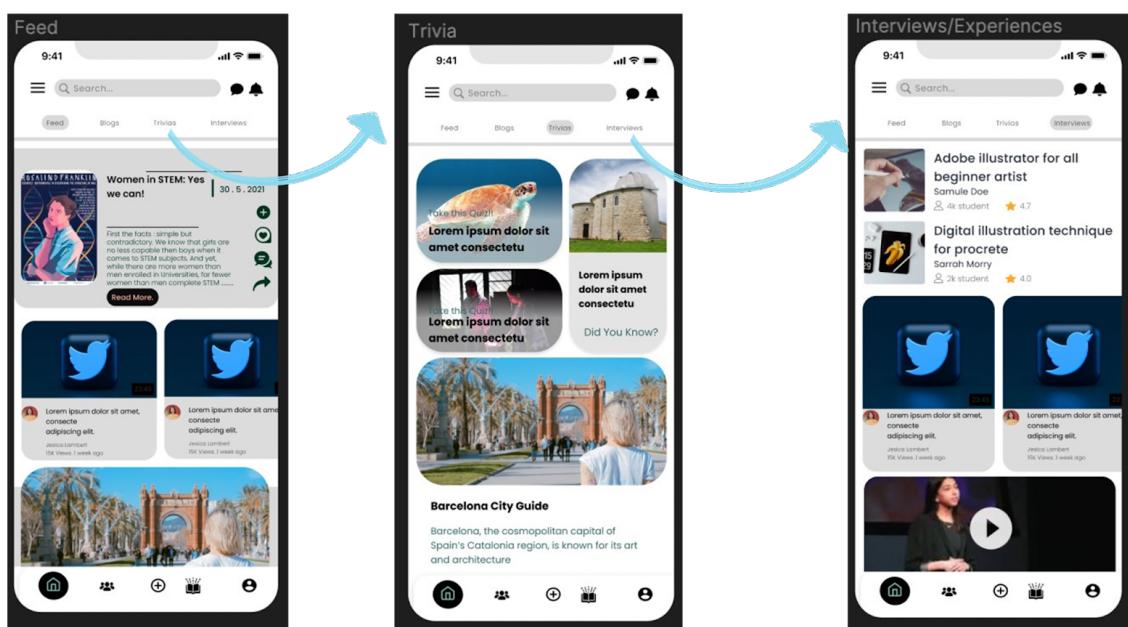
Menu Option in Home Page



Messaging and Notifications



Blogs , Trivias and Interview Experiences

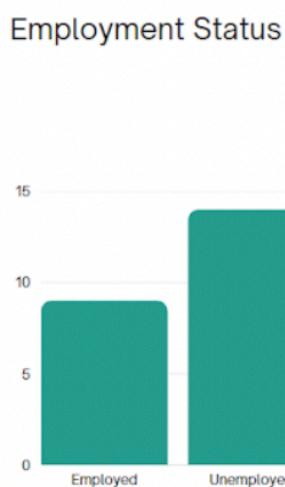
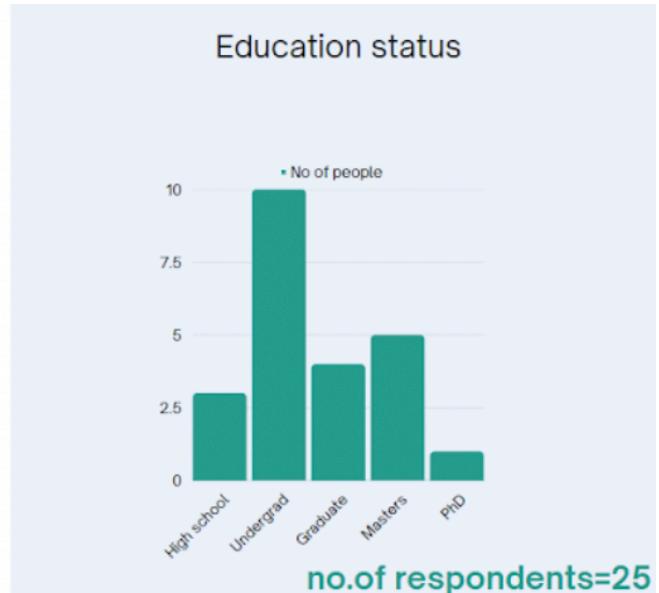


First Testing Phase

User base: 25 women were surveyed. Purposive sampling was used just like in the previous surveys. It was kept in mind who our target audience was. The user base was well diversified as shown in the analysis. Unlike last two surveys, structured observation was conducted along with one on one interviews.

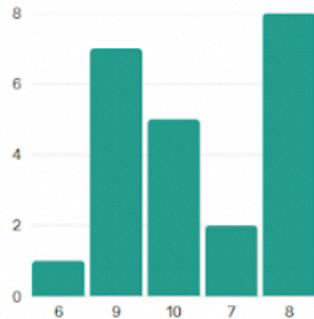
Analysis:

Results and Analysis



Ease of use (1-10)

How likely are you to use the app? (1-10)



Font style (1-10)

Role you would like to take up?



Font size (1-10)



Color Schema (1-10)



Terms understandability



Organisation of info on screen



Qualitative Analysis

Changes suggested by the respondents:

1. A more intuitive icon for resources
2. A more vibrant profile page
3. Subcategories of types of content (video, text, etc.) within each category
4. Options restricted to one or two parts of the screen
5. A design more consistent with other social media platforms

Additions suggested by the respondents:

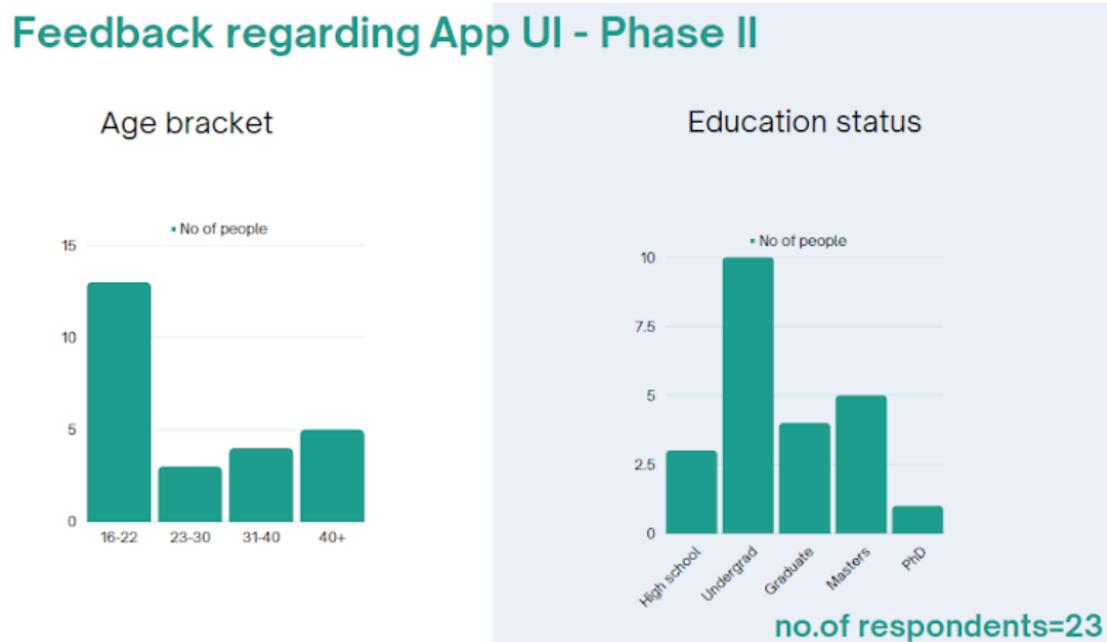
1. Add the option to create an account with google/FB sign in.
2. Enable the user to download resources for offline availability.

3. A job sub-category could be helpful.
4. Chat access restriction (public/private).
5. Q&A section
6. Error handling page with appropriate feedback, e.g for:
 1. Connectivity issues
 2. Page not accessible

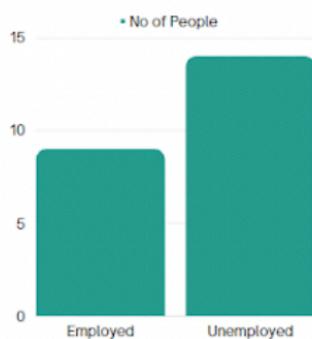
Second wireframe

<https://www.figma.com/file/XbkzIRzFEYPKc5wB4lzaRO/Women-in-stem?node-id=0%3A1&t=kC09j8VoGyOU7QJ6-1>

Screenshot of pages that were changed:



Employment Status



Icon understandability



Employment Status



Icon understandability



Ease of use



Font style



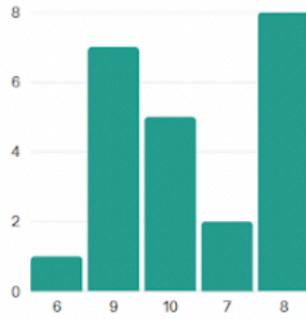
Font size



Color Schema



How likely are you to use the app? (1-10)



Role you would like to take up?



Qualitative Analysis

- Incentives for mentors could be added so that they stay motivated.

Evaluating Usability

Discoverability

Be it accessing resources, looking up trivia, checking inbox or changing profile information, the icons are visible irrespective of the page the users are viewing. This makes the features more discoverable, prevents users from getting lost, thus saving time.

Skeuomorphism

The bell icon for notifications, home icon for the home page, a person icon for one's own profile and a people icon for the network are examples of skeuomorphism i.e. mapping the icons to real-world objects. This makes it intuitive for the users by creating mental models.

Memorability

None of the functionality requires a concrete sequence of steps to be remembered. This reduces the cognitive load on the users. It won't be hard to navigate even after not using the app for a significant time.

Error Rates

There is no scope for major catastrophic errors in the application. In case of minor mistakes like typos in the post or posting a wrong video, the edit/remove option is always there.

Satisfaction

Apart from some specific suggestions, our respondents in the survey commented in general that the app UI looks pleasant.

Learnability

The UI has been designed keeping in mind the familiarity and consistency principles. Features like a network and notifications are available on most popular platforms, which makes it easier for the users to habituate to using this app.

We have ensured consistency within the application in terms of formatting and labels.

Colour Schema

The colour schema used by us is a mix of analogous and complementary. Complementary colours are used for emphasis. Analogous colours include different shades of blue and green. These two colours create a soothing effect (important for user satisfaction). The blue also helps users trust the platform more and gives a calming effect.

In line with trends for 2023

We implemented the following elements predicted to flourish in 2023.

1. Rounded corner buttons
2. Inspirational quotes, aka daily statistics on the splash screen

Conclusion

In this report we have shown how we have navigated from designing, to prototyping and testing while following the principles of the double diamond model. According to us, this platform has the potential to encourage women to start , shift, excel in STEM. This platform has been specially curated after rigorously surveying with a diverse group of people. We have tried to refine the design as much as possible however there's scope for adding more features in the future.

