

# BLOSSOM

BLOSSOM INTO THE  
WORLD OF STEM

**Class:** INFO 360 Design Methods

**Authors:** Bryan Ahaneku, Yuemin Cao, Matthew Herradura, and Kayla Tounalom

**Date:** March 10th, 2022

We are **Blossom** and we are going to discuss the journey from the beginning to the end of our mobile applications design process.

## **Problem:**

Women are massively underrepresented in STEM (Science Technology Engineering Mathematics) education and jobs. According to the American Association of College Women, “women make up only 28% of the workforce in STEM, and men vastly outnumber women majoring in most STEM fields in college” (AAUW, 2020, para. 2). The gap is wider in Computer Science and Engineering fields (two of the most lucrative and socially empowering disciplines) as “only 21% of engineering majors and 19% of computer science majors are women” (AAUW, 2020, para. 4). STEM gender inequality boils down to cognitive (conscious and subconscious) stereotypes about female adeptness and belongingness in STEM. Dr. Master (2021) summarized his research findings on this topic by saying: “gender-interest stereotypes that STEM is for boys begins in grade school, and by the time they reach high school, many girls have made their decision not to pursue degrees in computer science and engineering because they feel they don't belong” these misconceptions determine woman **engagement** (connotes involvement, commitment, passion, enthusiasm, focused effort, and energy). Research suggests that **role models** heavily influence engagement because they inspire, motivate and prompt stronger engagement behaviors among students (Valero et al, 2019). However, “people often choose role models among close people from their own social group” (Valero et al, 2019). To support this, Valero’s research article displays substantial evidence that perceived similarity (e.g., in gender and ethnicity) between role models and students is a key factor in achieving the beneficial outcomes of role modeling. Therefore, we hypothesize that connecting young woman students to woman role models in STEM will help bridge the gap between gender inequality in the STEM field.

## **Solution:**

For our design approach, we decided to tackle this problem through a mobile application that aims to encourage more women to pursue careers in STEM. In a way, this application is similar to LinkedIn where users can set up profiles with their work/project experiences, career/grade, interests, etc. The app's main focus is on users and their specific role as either a mentee or mentor as well as the relationships between the two. Mentors act as a "role model" that students can connect with and utilize as inspiration to help them continue their path within STEM careers. Students can also find other resources through projects, events, meet-ups, etc. Having these resources in a centralized app on their phone will encourage more young women to gain experience and feel encouraged to continue in the world of STEM. In our preliminary user research, we found that the high standard of professionalism in services such as LinkedIn as well had the tendency to intimidate users. To combat this, we are approaching this design in a more "fun" and inviting way through the use of a more visual color scheme and playful fonts.

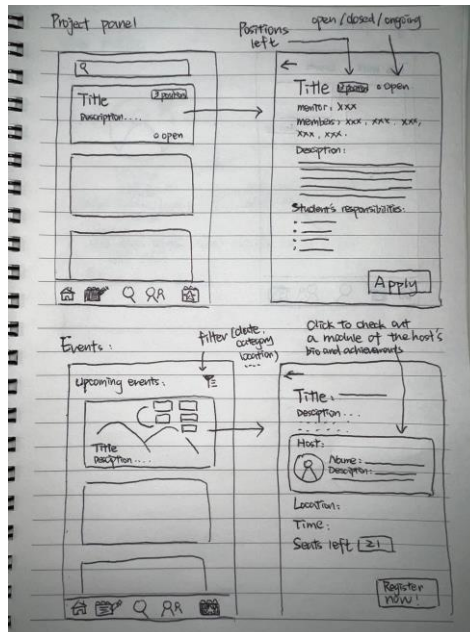
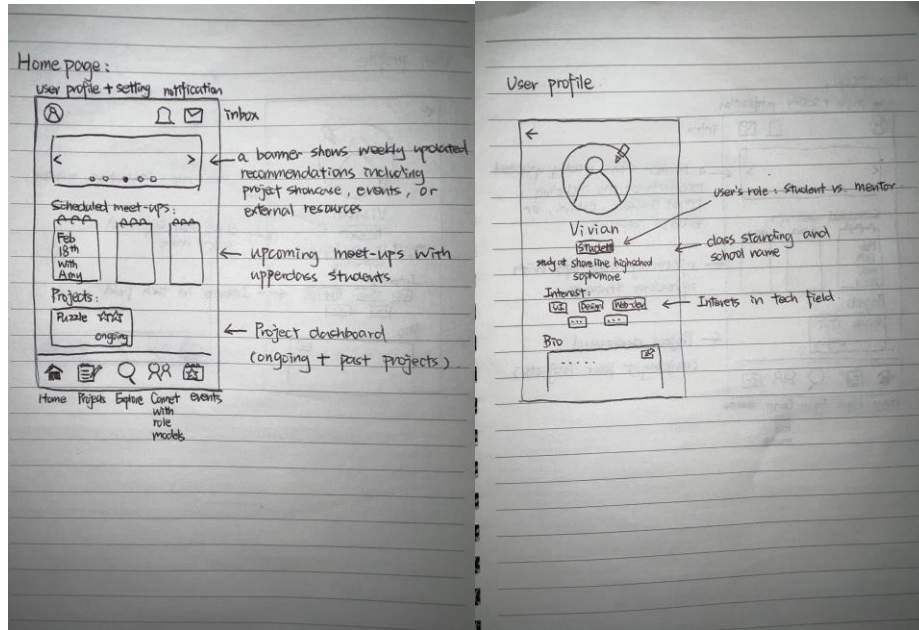
# Our Planning Process:

We created notes and planned out what each screen would need to include.



## Sketches:

Sketches helped us organize our ideas and thoughts.



## Low Fidelity Designs:

Our low fidelity design started from simple placeholders and a layout of what our application screens would look like.



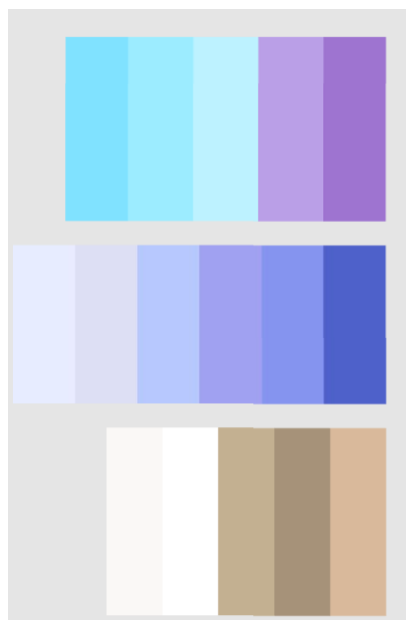
**Decisions Made:**

## Our Target Audience:

Our target audience is young women in high school. Choosing a specific audience allowed us to be clear and specific in our design process, creating a solution that fits our users. A research article about teens' interaction with mobile/web applications stated that "teens encountered the greatest challenges on large sites with dense content and poor navigation schemes." (Teenager's UX: Designing for Teens, 2019). To enhance focus, engagement, and clarity, we as designers chose to use easy-to-read simple text, clear icons, and a clean minimalistic slate. This approach to our design ensures our users don't lose focus and instead enjoy the process of interacting with mentors, finding events, and creating new connections.

## Color Scheme:

An important factor of our design was the color scheme. We decided to use the colors **blue and purple** as the main color scheme because of accessibility reasons. As learned in the Adobe, UX of Color Palettes article,



blue signifies calmness, reliability, and trustworthiness. (UI Color Palettes & Color Schemes | Adobe XD Ideas, n.d.). Also, we chose this color in order to make the app accessible to users living with color level deficiency, who may find it relatively harder to see certain colors. Author Joe Clark discussed that "red and green are the colours most affected by colour-vision deficiency. Almost no one has a blue deficiency. Accordingly, nearly everyone can see blue, or, more accurately, almost everyone can distinguish blue as a colour different from others". (09. Type and colour, n.d.) Due to learning about color-

vision deficiency, we decided to use some aspects of the color blue in our design.

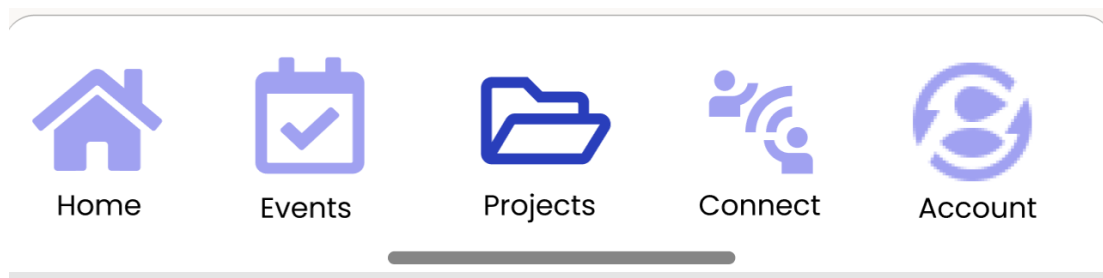
## Typography:

We decided to use the font **Poppins**. Poppins derive from the San-Serif typeface. From the Article, 10 best fonts for UX/UI, we read over the list of fonts suggested. We gleaned that the font Poppins “is very popular for website design and mobile apps design.” (Top 10 most used fonts for UI UX design – SkillyPro, 2022). Based on user testing and this article we chose to go for a popular font that would be pleasant to the eye for the user interface.

# Poppins

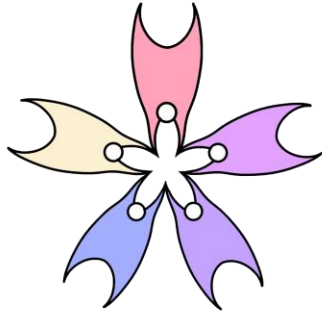
## Iconography:

For the usage of icons in our design, our main goal was to make sure all icons are universally recognized and did not cause ambiguity. For example, in the navigation bar, we used the universal symbol for a home for the home screen, and under each icon we included text.



## Logo:





### **Our logo sends 3 messages:**

1. It resembles a flower blossoming as our target audience will blossom into a new dimension of STEM by utilizing our application.
2. Our application is focusing on student networking as the petals of the flowers resemble people holding hands together.
3. The vibrant yet harmonic color palette shows that we want to make sure that every user will feel included and treated

equally. We welcome people from all backgrounds.

### **Name of the application:**

The name of the application was decided based on simple searching and throwing out creative ideas at one another. We decided to name our application **Blossom**. We chose Blossom because we believe that once the young women in high school use our mobile application, their insights and curiosity about the STEM field will blossom into a full flower. Blossom also ties into the acronym STEM, as they both make reference to the flower analogy.

### **Evaluations:**

For our user testing, we wanted to interview a high school student and a college student. The reason we wanted to do an interview was to make our design **participatory and empathetic**. Discussing our plan with the two students from the start to the end was our goal to ensure we took into consideration all feedback and focused on our target audience.

We chose **two** students to work with because we had already conducted user testing on them from the start of our project. With our low fidelity design we interviewed **Annie** who is a high school junior who does not know what she wants to do in the future, however, she does show curiosity in the STEM field and wants to learn more. The second student we did this evaluation on is **Abby** who is a current first-year college student who has an interest in mentoring and being a role model for younger students.

Based on our first user testing interviews, we found out from Annie that she feels intimidated to learn or pursue STEM, **“I don’t want to try new things and go into STEM if I don’t know others who want to try them with me.”** Based on this feedback we decided to implement our design and include a feature that allows users to find and meet other women students who show an interest in STEM. From Abby’s responses we learned about her perspectives on the STEM field, **“STEM seems hard. This doesn’t make me want to try for STEM.”** From Abby’s interview response, we decided to implement a project and events features that will allow users to navigate our application and explore the STEM field.

From our final user testing interviews, we wanted to gain feedback based on the overall usability, aesthetics, organization, and effectiveness of our design. Abby discussed how our mobile application is similar to other apps. **“I like how this is like LinkedIn and Handshake but it’s focused more on the target audience”**. Abby also brought up feedback about her past after going through the different screens. **“I wish this app existed when I was in high school, it would’ve been helpful”**. From Abby’s feedback, we were able to empathize with her and understand that it is indeed a struggle and hard to

navigate the STEM field when there aren't resources such as our app Blossom. The feedback we received from Annie was a lot of praise for the overall minimalist and clear design. **"A lot of people wouldn't want to use "ugly" apps such as myself"**. Based on our prior research about our target audience it is indeed true that visual design encourages more engagement on applications. Annie also brought up how it's quite hard as a high school student to find resources and projects to work on with minimal experience, to begin with, she said, **"I like how all projects and resources are all in one place making it easier to search for opportunities"**. All in all, it was an engaging experience to interview Annie and Abby and see their feedback and observations from the beginning to our final design.

## **Limitations:**

Throughout the design process we researched and came up with possible limitations of our design:

- Focused on women in steam.
  - Those who are not in the stem, identify as men, not really meant for them
- The app is only usable by English speakers.
  - The design doesn't yet accommodate other languages.
- Based in the Seattle area only.
  - Right now, the app is limited to the Seattle area due to the reach of our network
- Small testing data.
  - We only interviewed two students (who also doubled as testers). Though the decisions we made were supported by empirical research data, our small sample size forces us to hope our assumptions are scalable to the rest of our target audience.
- The app is not inclusive of mid-experienced students.

- The current design focuses on technically inexperienced female students in late high school/early college.
- The current design does not include the role model's point of view.
  - Ultimately, we plan to have two slightly different designs: One for students and another for mentors (similar to Canvas)
- Current design fails to achieve our goal of being engaging, entertaining, "chill" and fun for our young female users.
  - Research participants expressed their need for a less tense and uptight and intimidating professional networking environment (compared to LinkedIn).
  - MMGuardian, a leading parental control app, published the top used apps based on average daily usage time, followed by the percentage of children with the app:
    - 1.) TikTok: 105.1 minutes. 32%
    - 2.) YouTube: 102.6 minutes. 69.7%
    - 3.) Roblox: 90 minutes. 24%
    - 4.) Amino: 89.5 minutes. 1.18%
    - 5.) Avakin Life: 86.6 minutes. 1.32%
    - 6.) YouTube Kids: 85.8 minutes. 6.9%
    - 7.) Wattpad: 80.6 minutes. 2.9%
    - 8.) Netflix: 80.6 minutes. 27.4%
    - 9.) IMVU: 72.8 minutes. 1.3%
    - 10.) Hulu: 71 minutes. 9.2%
  - Two trends emerge from this list: Videos and avatar chat rooms (the latter is more common).
    - In future versions of the design, we will add short videos as an additional way of delivering information. We don't want everything to be text-based.
    - We plan to make avatars for the users. These avatars will be customizable, and they will be used for chatting. Also, we plan to implement a reward system whereby users are

gifted points/tokens to improve/edit their avatars based on specified completed tasks.

### **Future Development Plan:**

After our live presentation in class, we reevaluated some of the features according to the feedback we received and developed a future plan for potential adjustments of our application.

- Expand the scope of our audience
- Collaborate with recruiting/volunteering resources to provide our audience a platform to utilize the skills they acquire from Blossom
- Add meet-up feature along with the connect feature
- Add more dimensions to the events tab
- Provide mentorship program opportunities for the users

### **High-Fidelity Prototype:**

## Prototype Link: [BLOSSOM PROTOTYPE](#)

Here are our final high fidelity prototype designs where you can take a look into the development of each screen.

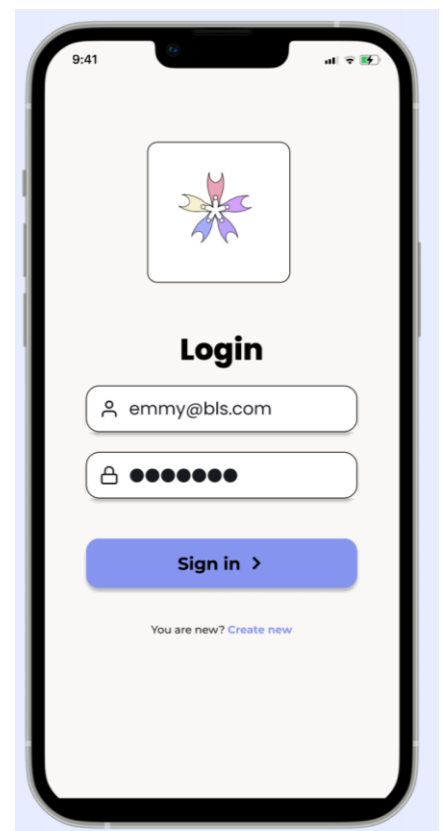
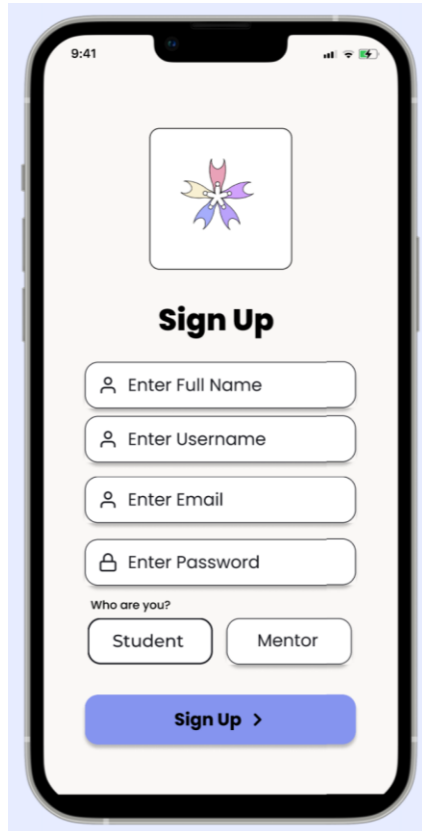
### Welcome:

- Welcomes users to get started with their usage of the mobile application.



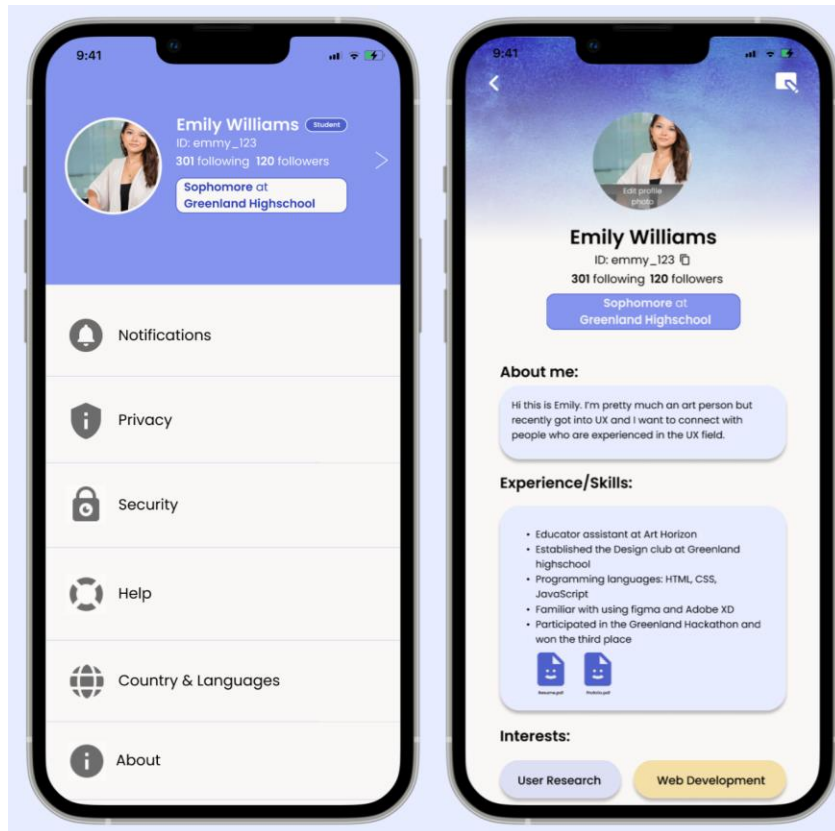
### Welcome:

Welcomes users to get started with their usage of the mobile application.



### Sign Up/ Log In:

- **Sign up:** This allows users to sign up with their name, username, email address, and choose if they are a student or mentor.
- **Sign in:** Email Address and password.



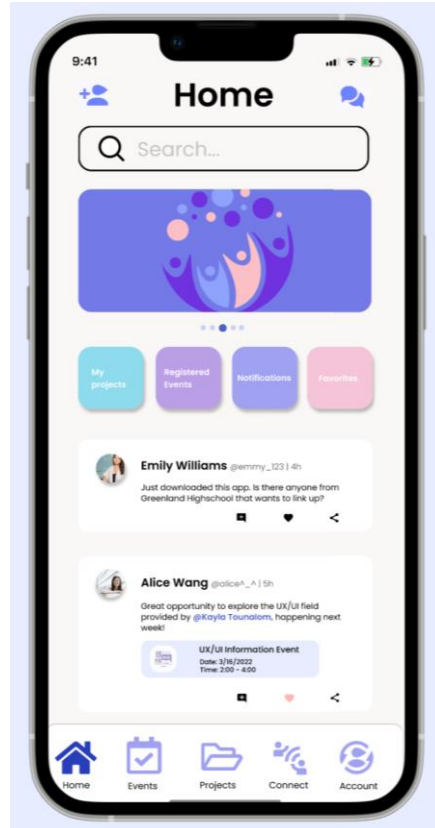
### Account:

- Consists of a user profile, following, followers, notifications, privacy, security, help, country & languages, about, and sign-out icons.

### User Profile:

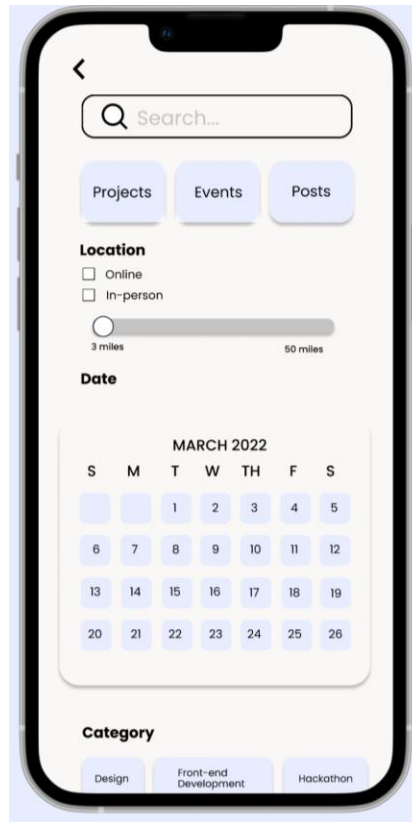
- User profile showcases an about me section, experience/skills, interests, and projects they have worked on.





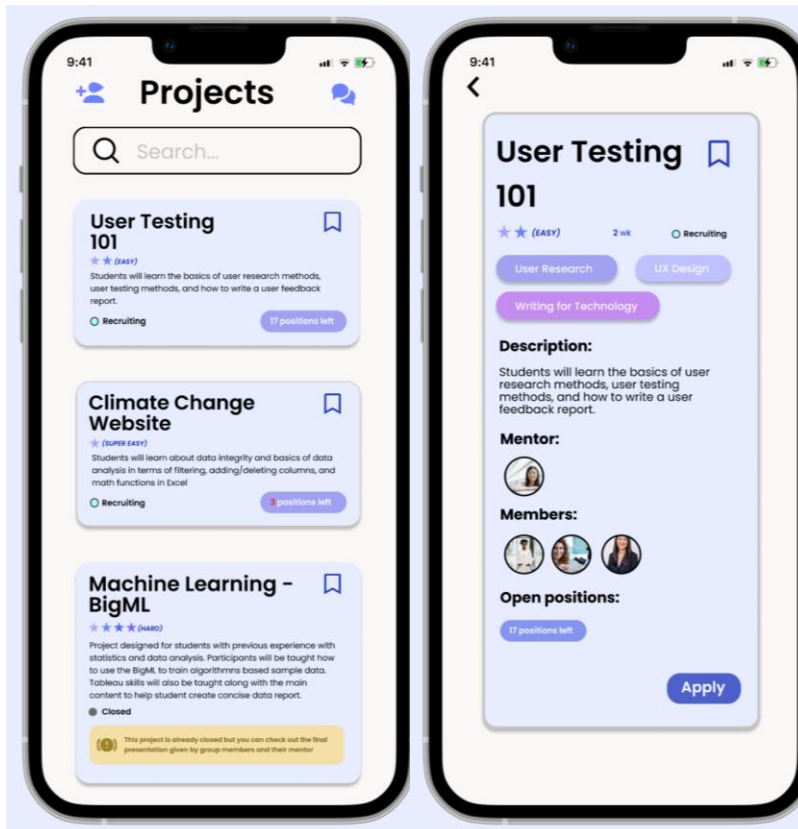
## Home:

- The home page consists of projects, registered events, notifications, favorites, and posts from other users.



### **Search Engine:**

- The search engine allows for filtering for projects, events. Especially you can filter by location, dates, or categories.

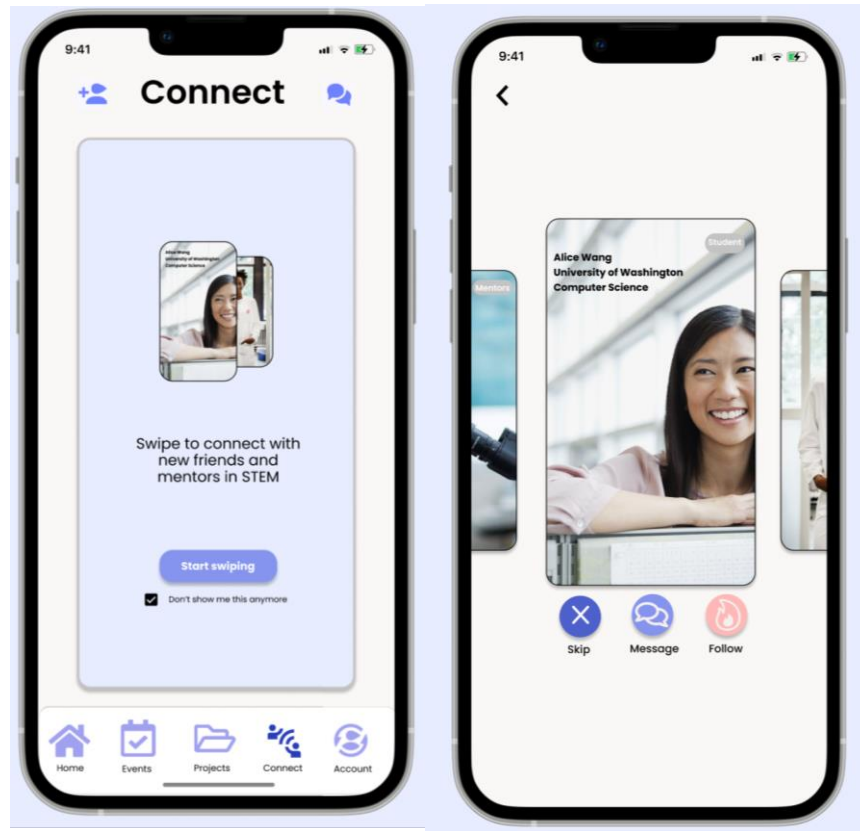


## Projects:

- Projects screen showcases project postings where students can view projects to join and be mentored. Projects range in a difficulty level from 1 star-5 star. Users are able to see if there are open positions and if the specific project is recruiting.

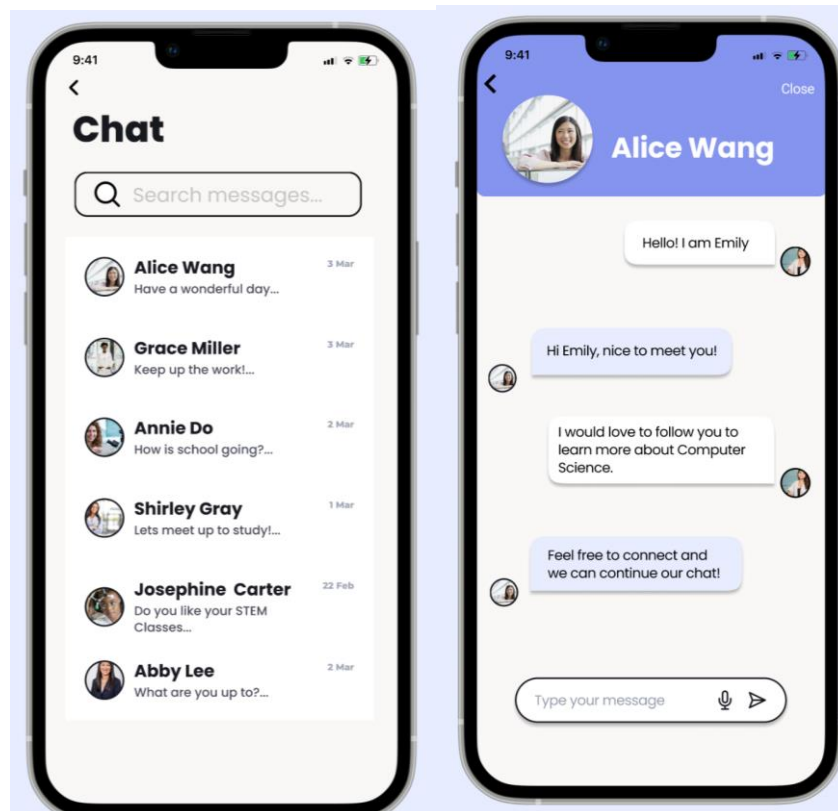
## About Projects:

- Users will learn more about projects and decide if they want to apply to join the project.



**Connect:**

- Connect allows users to swipe through different students or mentors to connect, spark a conversation, and make new friends.

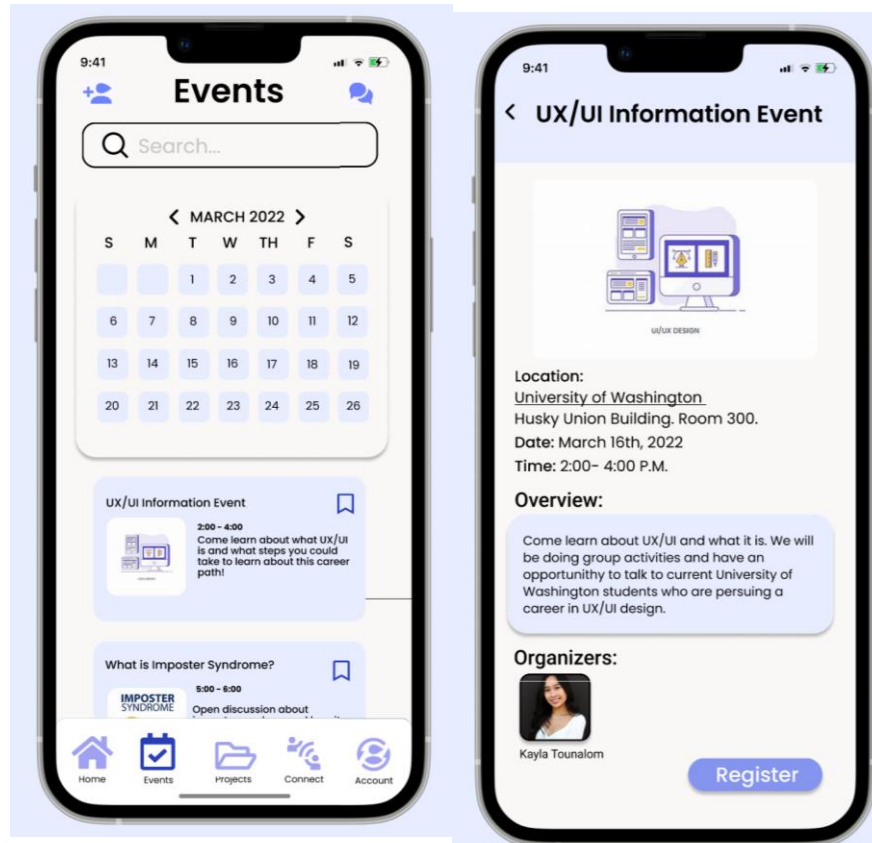


### **Quick Message:**

- Quick message connects to the user's direct messaging and allows users to start conversations with mentors or other students.

### **Chat:**

- Chat refers to the chat settings where users can view previous messages or conversations.

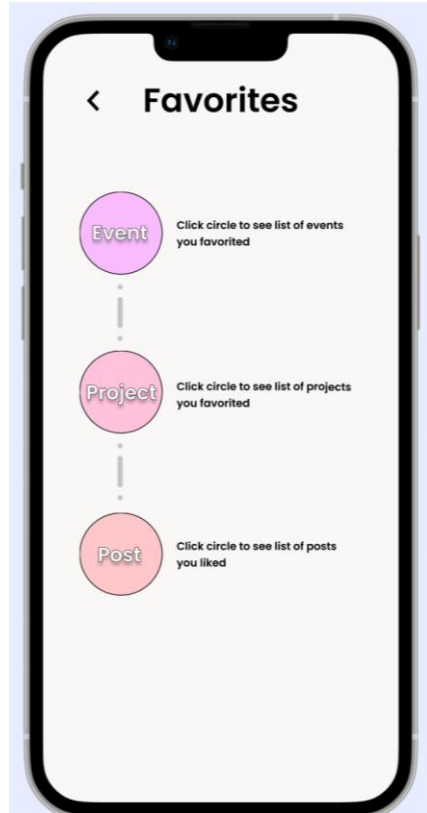


### Events Page:

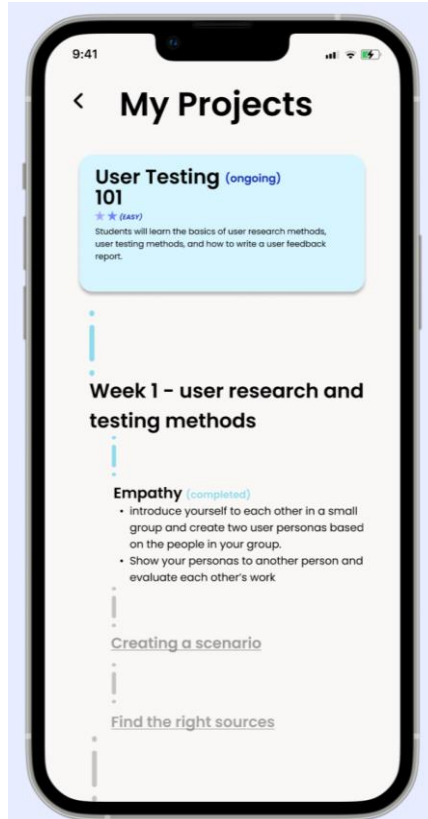
- Events allow users to scroll through a calendar and attend events relating to the STEM field. Users can then favorite/save the event if they want to attend.

### View Events:

- View events help users learn more about the specific event based on date, time, location, overview, and who is hosting the event. View events allow users to make the last step to register.

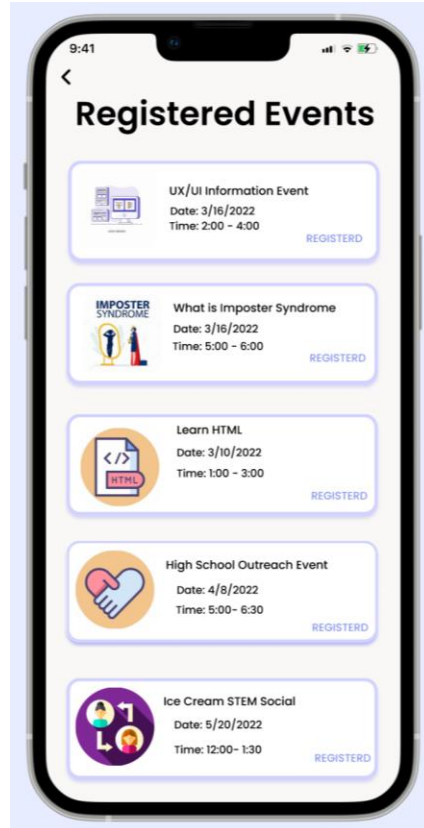


**Favorites:** Includes users favorited posts, projects, and events. Users can find their favorites from their homepage.



**My Projects:** Users will be able to see the projects they are currently working on and the progress of their projects





**Registered Events:** Users will be able to see the events that they registered for.

## **BIBLIOGRAPHY:**

AAUW. (2020). *The STEM Gap: Women and Girls in Science, Technology, Engineering, and Math – AAUW: Empowering Women Since 1881*. AAUW: Empowering Women since 1881.

<https://www.aauw.org/resources/research/the-stem-gap/>

Master, A., Meltzoff, A. N., & Cheryan, S. (2021). Gender stereotypes about interests start early and cause gender disparities in computer science and engineering. *Proceedings of the National Academy of Sciences*, 118(48). <https://doi.org/10.1073/pnas.2100030118>

Stereotypes in STEM fields start by age six: Gender stereotypes in computer science, engineering. (n.d.). ScienceDaily. Retrieved March 4, 2022, from

<https://www.sciencedaily.com/releases/2021/11/211122172716.htm>

Teenager's UX: Designing for Teens. (2019). Nielsen Norman Group.

<https://www.nngroup.com/articles/usability-of-websites-for-teenagers/>

Top 10 most used fonts for UI UX design – SkillyPro. (2022, January 16).

<https://skillypro.com/top-10-most-used-fonts-for-ui-ux-design/>

*UI Color Palettes & Color Schemes | Adobe XD Ideas*. (n.d.). Ideas.

<https://xd.adobe.com/ideas/principles/web-design/ux-of-color-palettes/>

Valero, D., Keller, A. C., & Hirschi, A. (2019, April 23). *The perceived influence of role ... – sage publications inc*. Sage Journals9. Retrieved March 3, 2022, from

<https://journals.sagepub.com/doi/full/10.1177/0894845318763905>

*09. Type and colour.* (n.d.). Joeclark.org.

<https://joeclark.org/book/sashay/serialization/Chapter09.html>