



COMP2044 Human Computer Interaction

Coursework 1 - Prototype and Justification

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Chapter 1

Introduction

This report presents a low-fidelity prototype of the UNNC event discovery and RSVP mobile app, designed to facilitate students and staff to discover, explore and register for various university events. The app needs to integrate seamlessly with existing campus services.

The key features of the app include personalized event recommendations based on user preferences, RSVP, and department affiliation. Ability to RSVP to events, view event invitations in the calendar and receive real-time notifications about updates or cancellations. To ensure privacy, only users attending the same event can access the attendee list, connect with peers, and participate in event discussions, which can promote social interaction and communication. If users do not want their information accessed, they can set it to anonymous participation in the settings. In addition, the app is designed with accessibility in mind, ensuring that users with disabilities are met. Finally, a map function has been added to allow users to find event venues based on their location quickly. A warning interface is also added to alert the user that an error has occurred.

The user interface follows the university's brand identity and fonts to maintain consistency with the institutional visual standards.

Chapter 2

Prototype

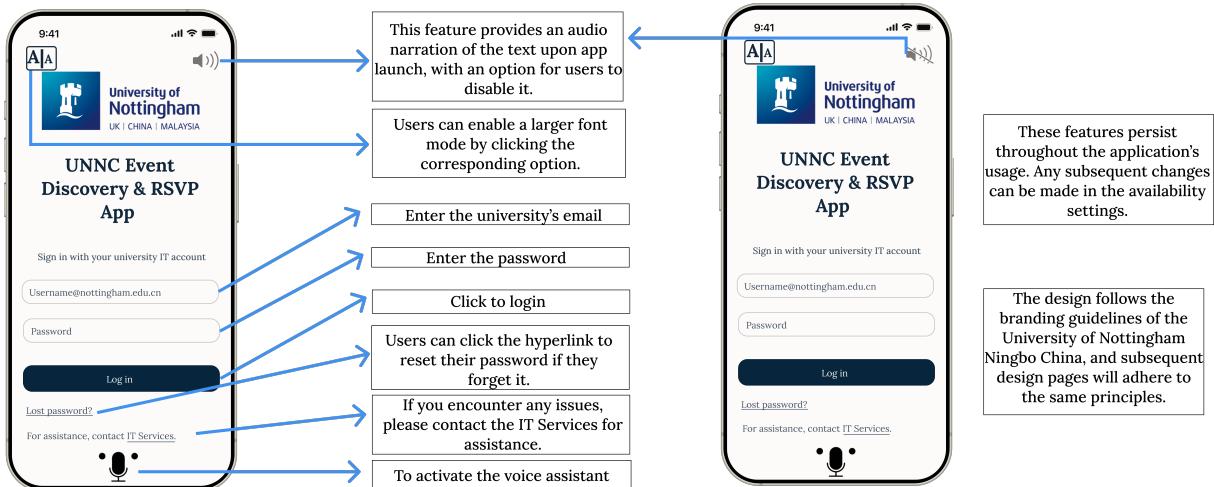
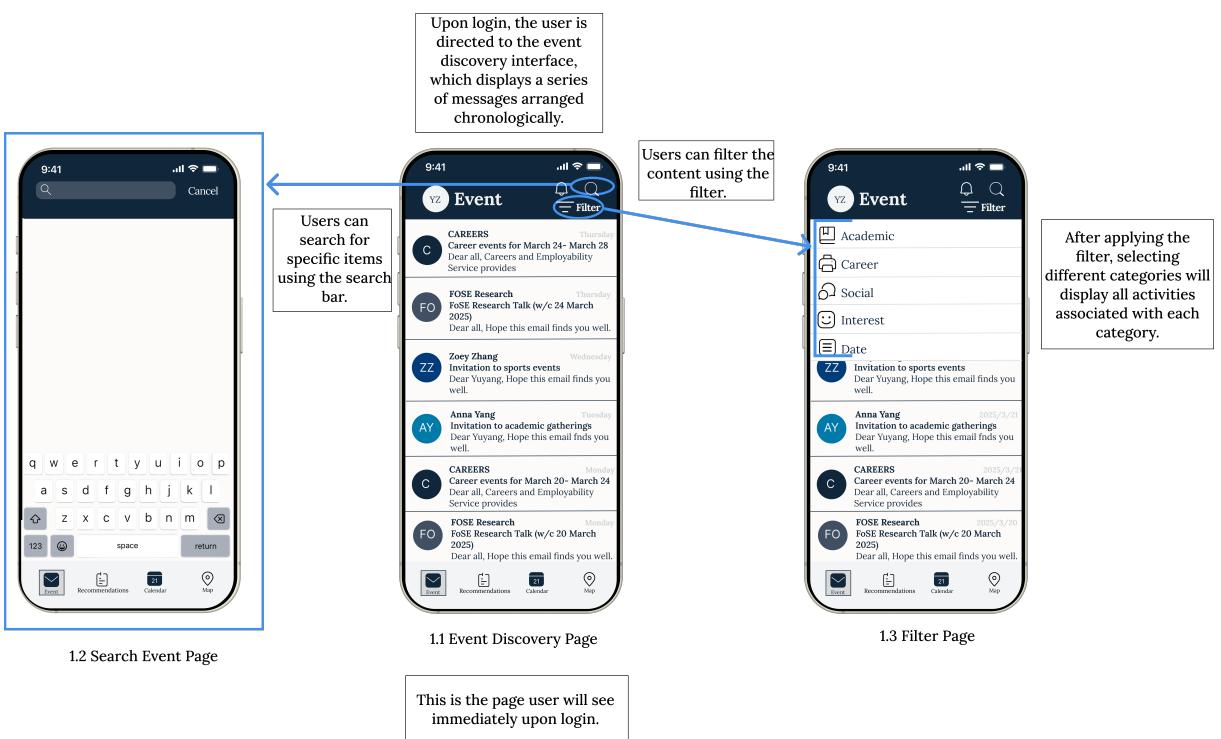


Figure 2.1: RQ7: Look and Feel(Log In and Accessibility)



1.2 Search Event Page

1.1 Event Discovery Page

1.3 Filter Page

Figure 2.2: RQ1: Event Discovery Interface

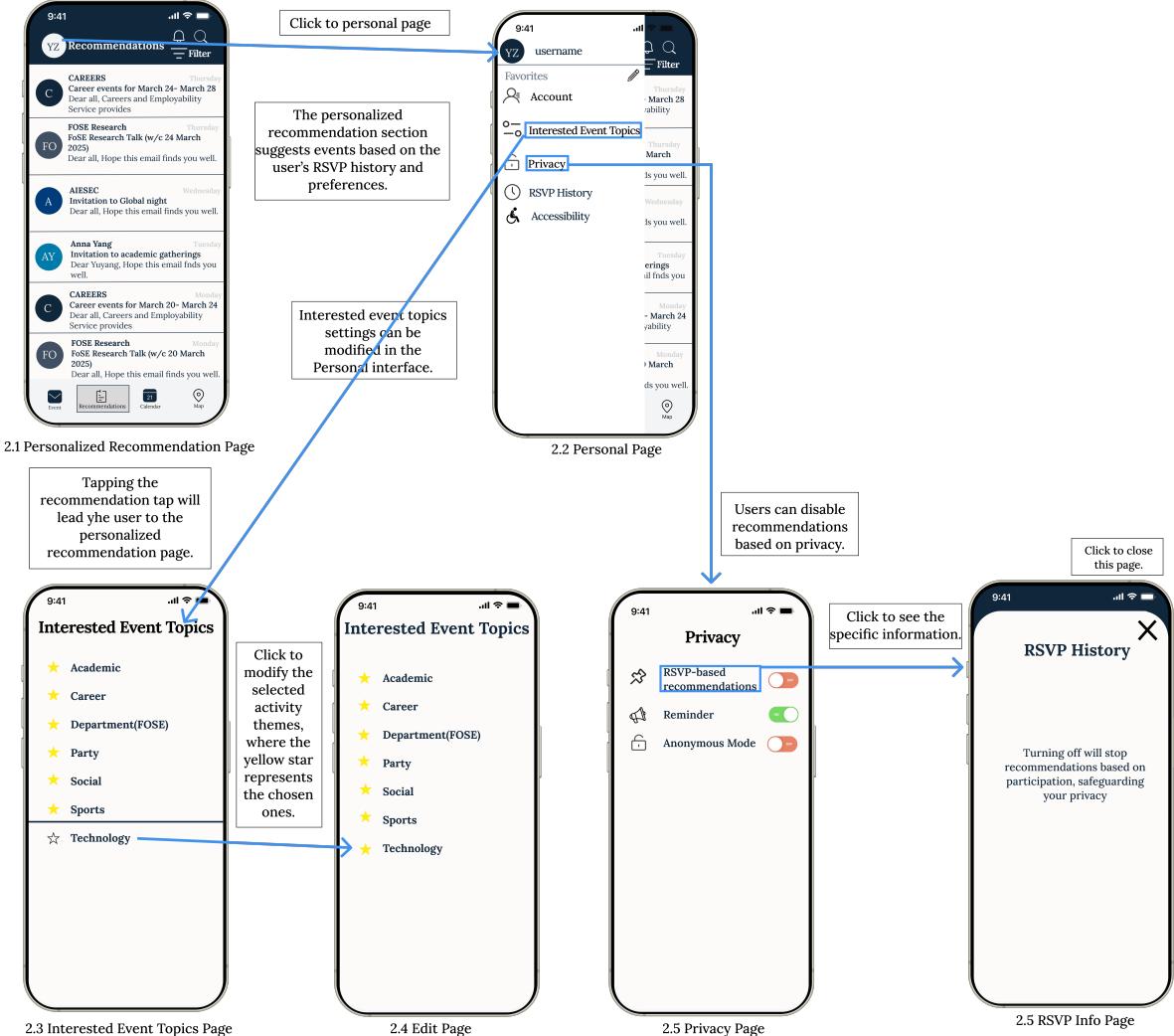


Figure 2.3: RQ2: Personalized Recommendations

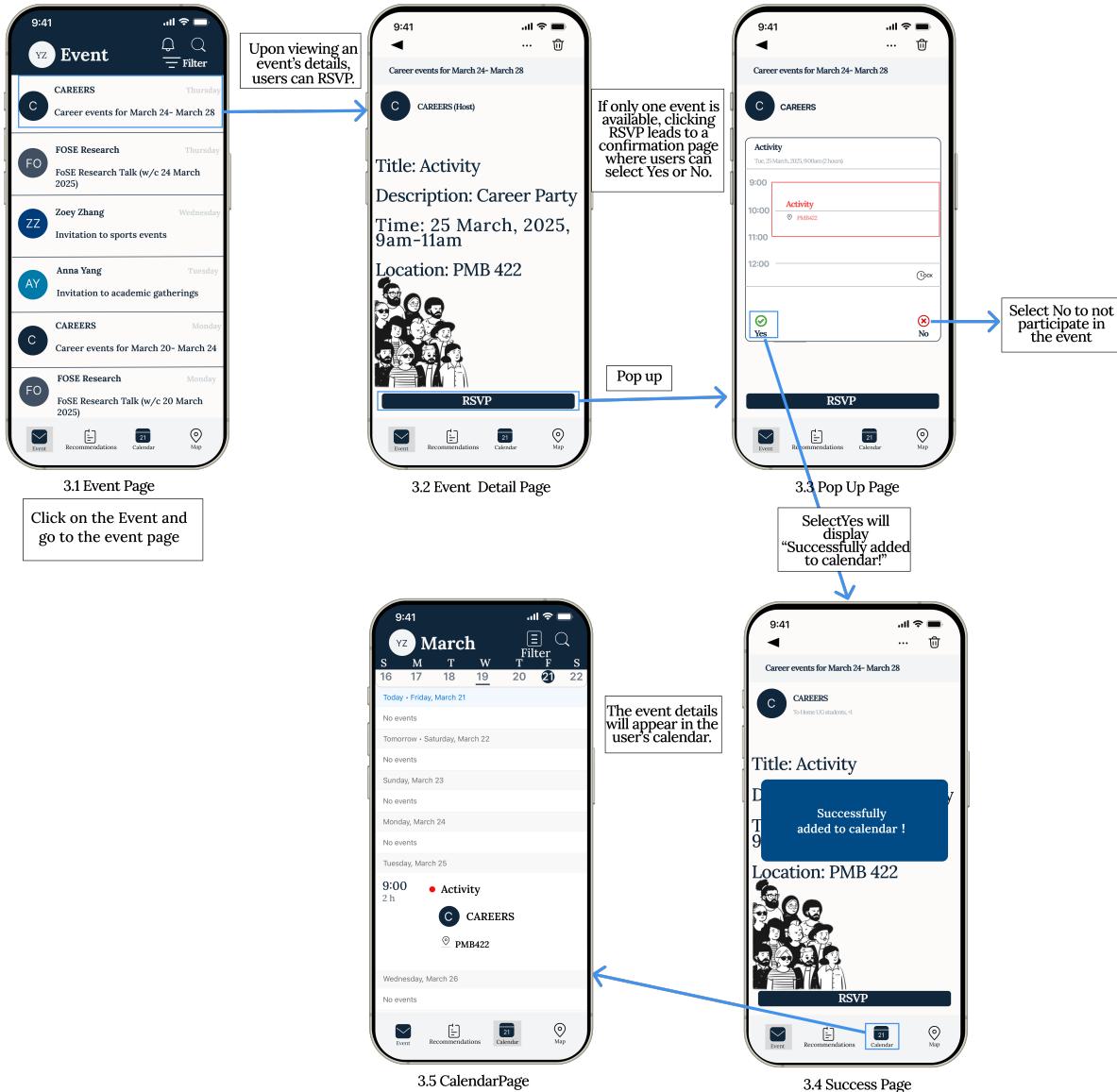


Figure 2.4: RQ3: RSVP(Single Event RSVP)

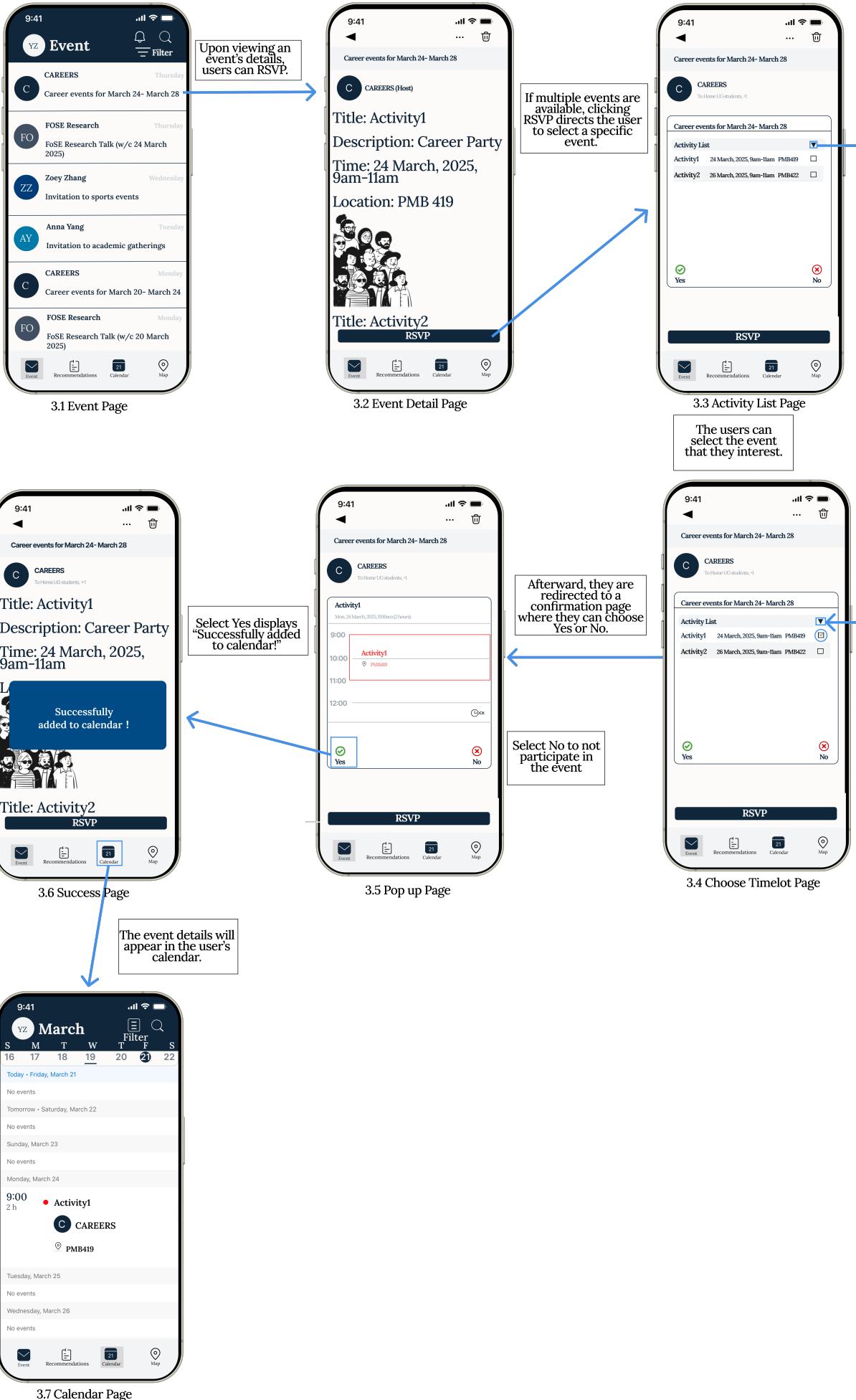


Figure 2.5: RQ3: RSVP(Multiple Event RSVP)

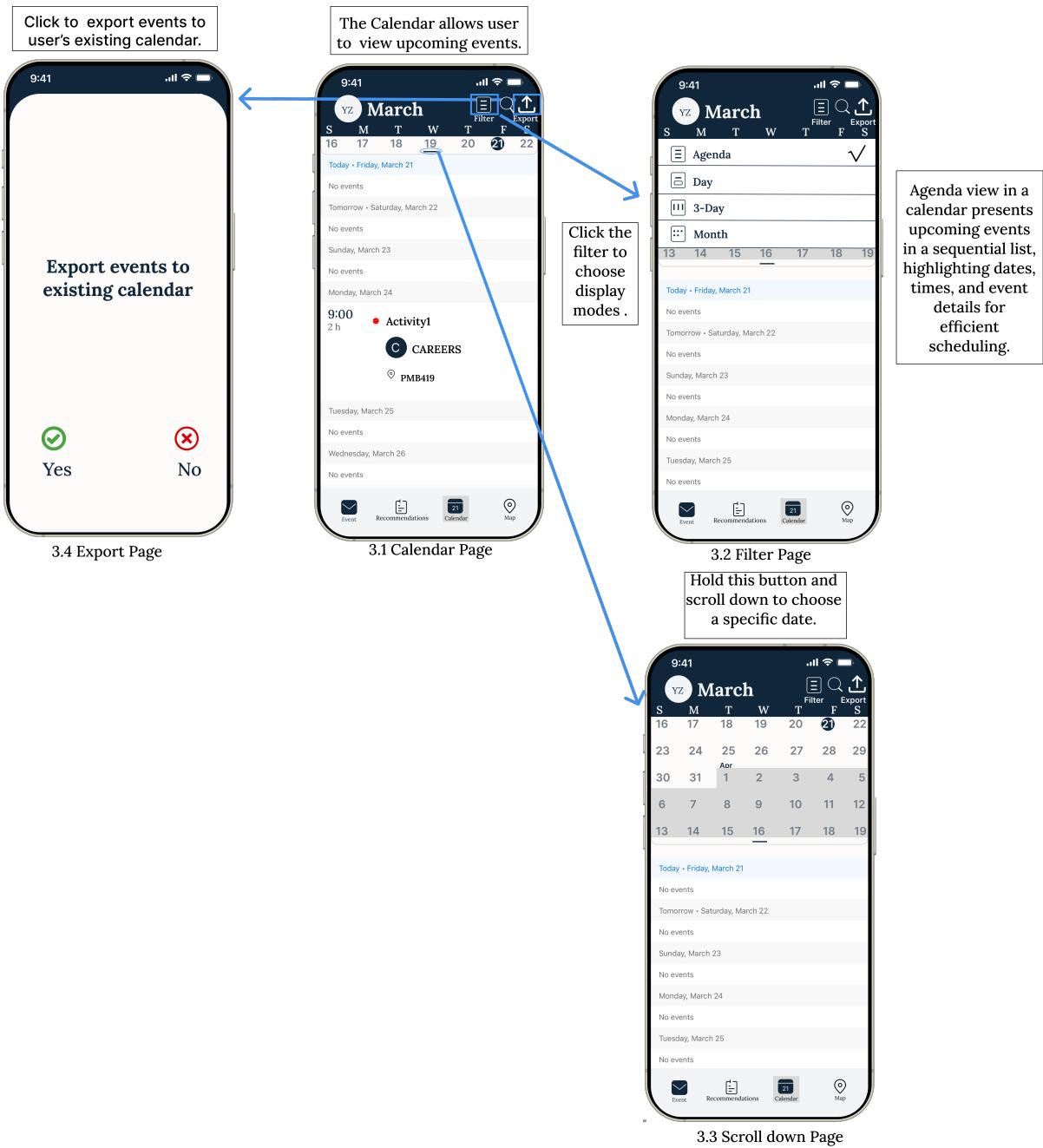


Figure 2.6: RQ3: Calendar

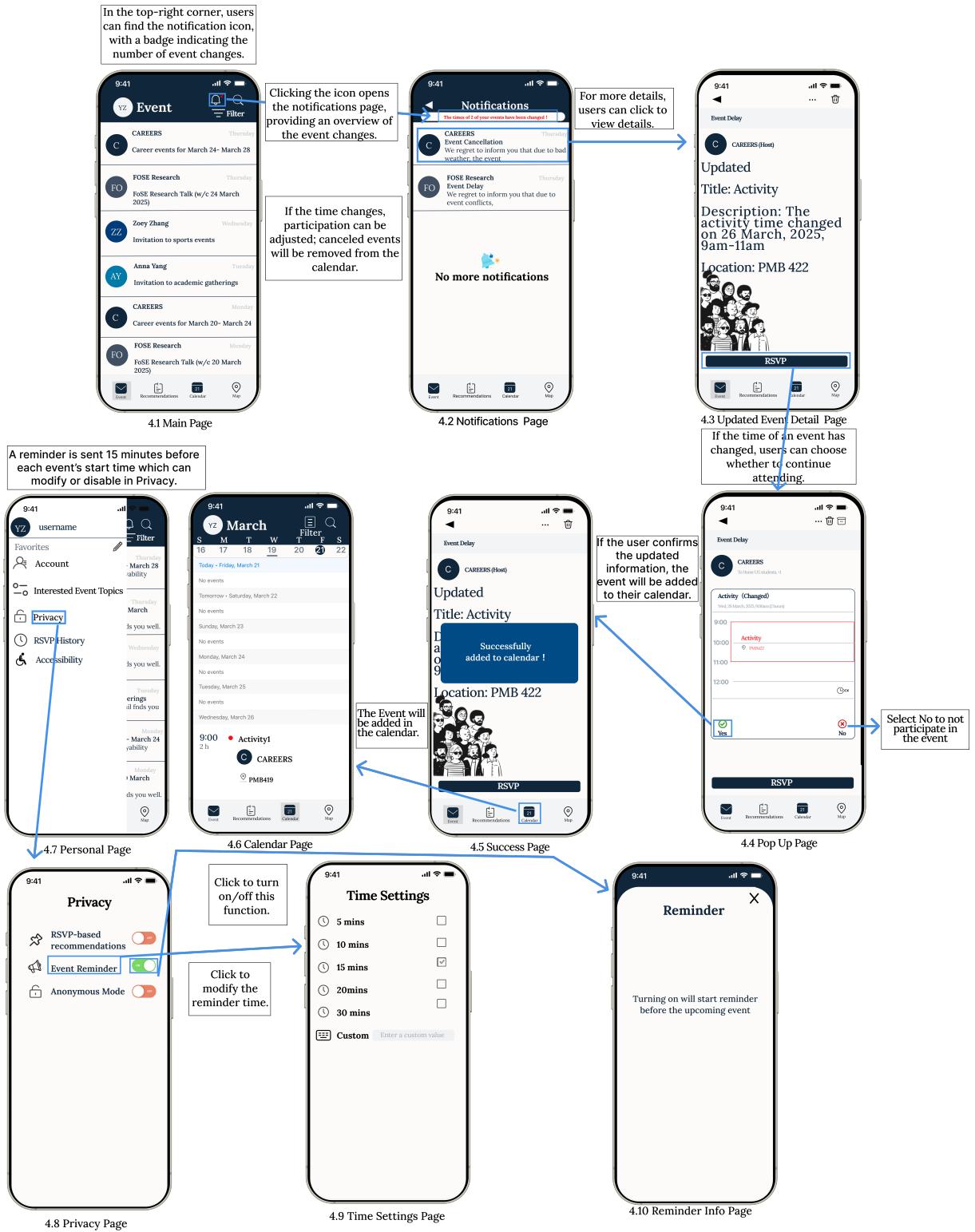


Figure 2.7: RQ4: Upcoming Event Display, Updates and Reminders

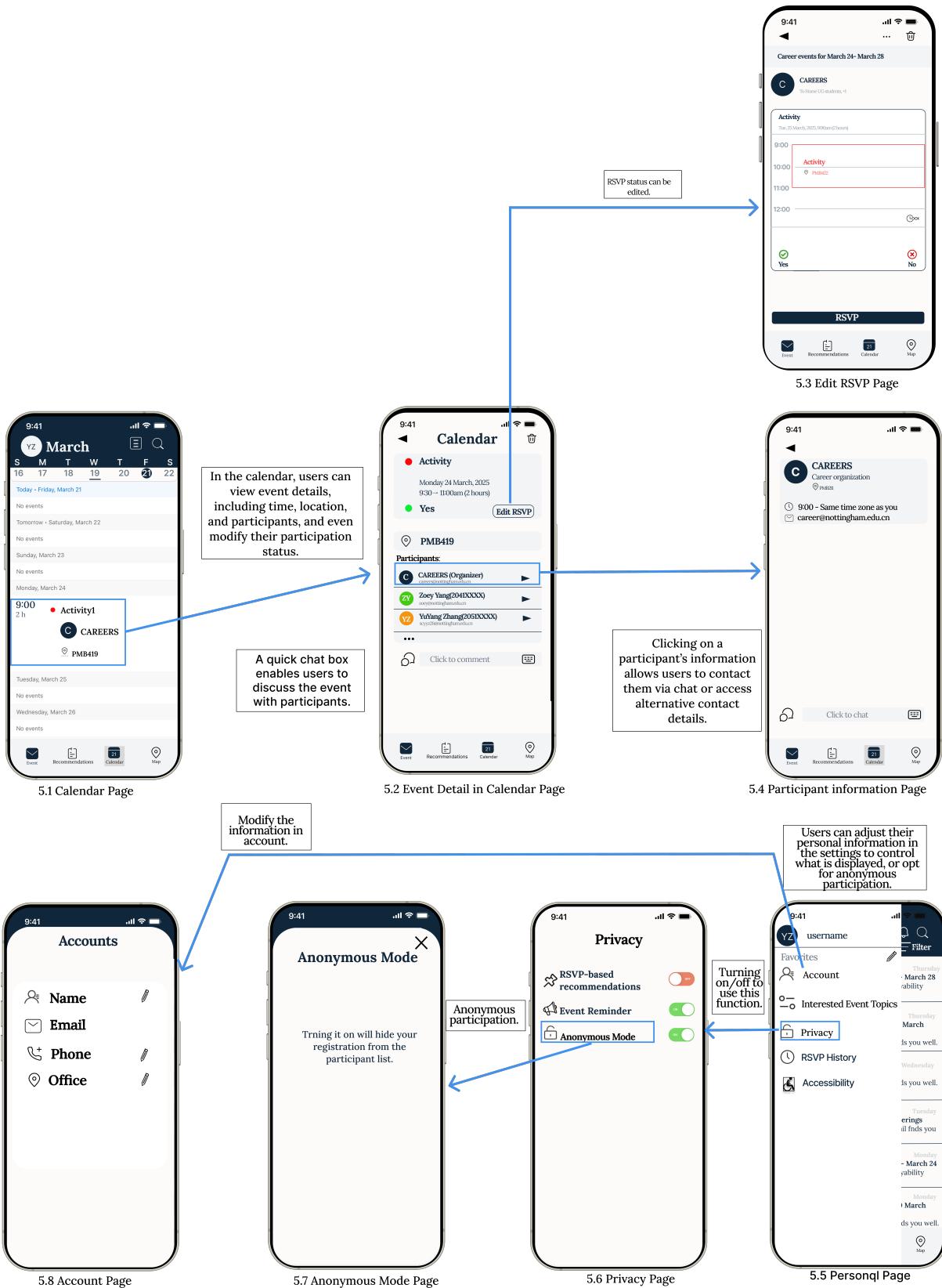


Figure 2.8: RQ5: Social and Networking Features

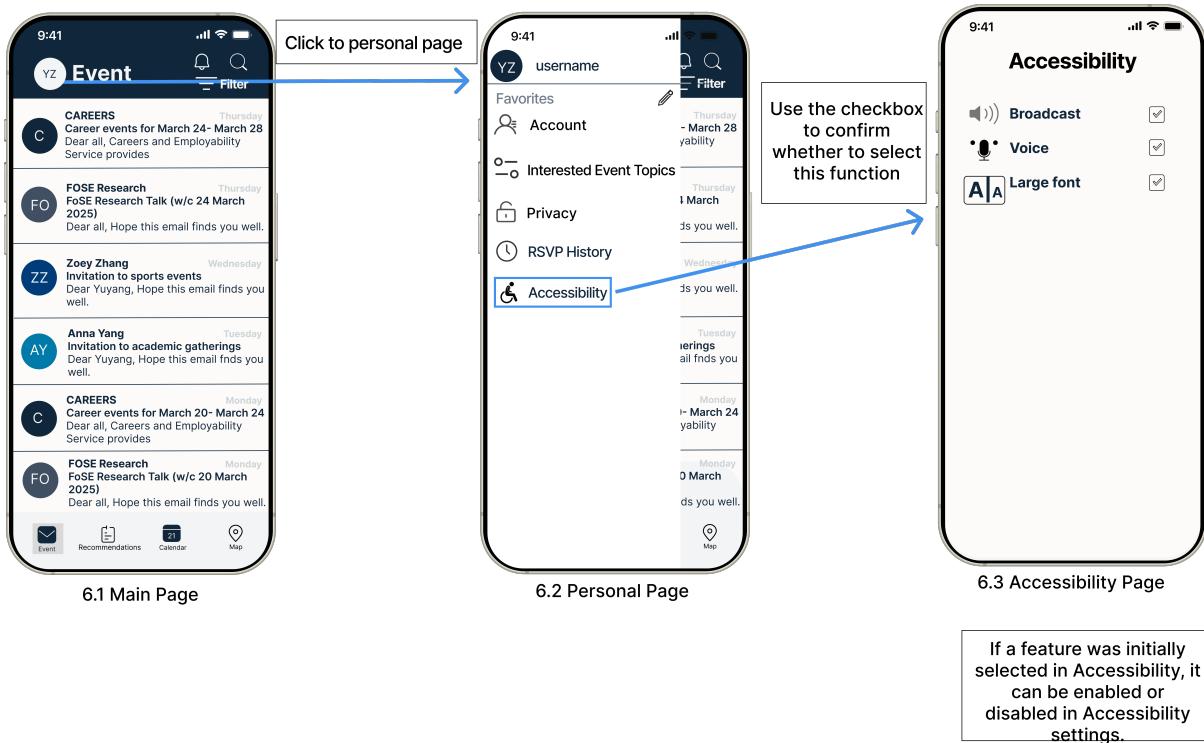


Figure 2.9: RQ6: Accessibility

This could be a built in or third party map interfaced.

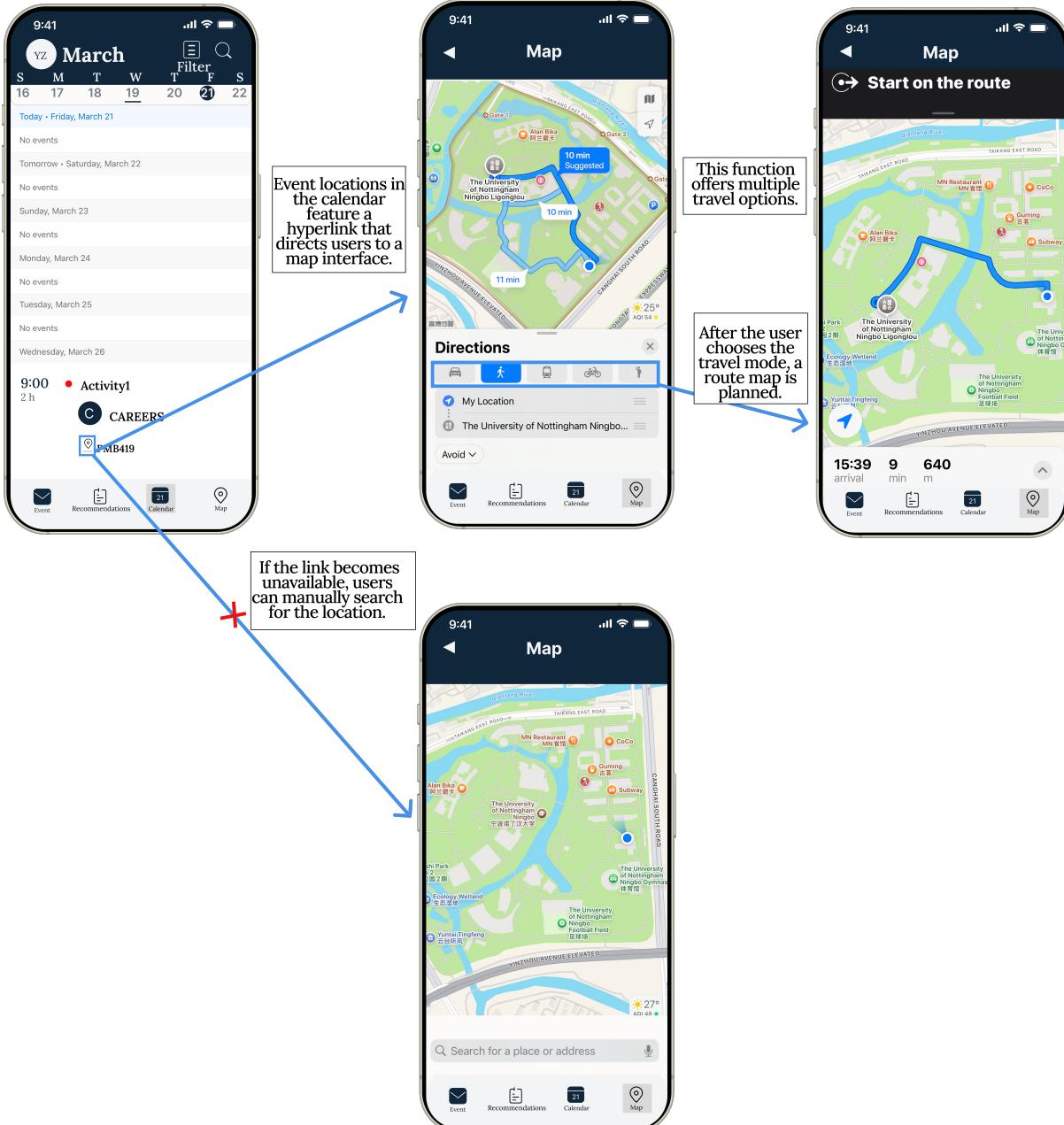


Figure 2.10: Extra Feature: Map

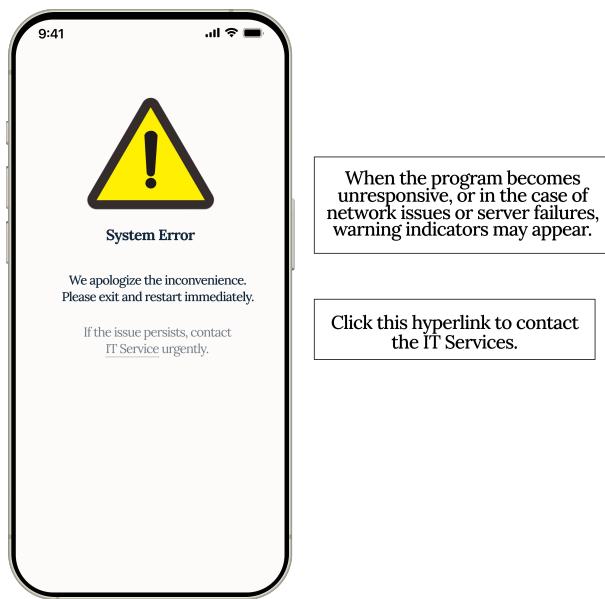


Figure 2.11: Extra Feature: System Error

Chapter 3

Design Decisions

3.1 Look and Feel

Given that the human visual system has a limited ability to effectively process a variety of colors, too many color variations in the interface can cause visual confusion and make it difficult for users to distinguish key elements (Ware, 2010). To address this issue, a blue color and the ‘Lora’ font that are consistent with the brand of the University of Nottingham Ningbo China were chosen as the main color and font. By brand guidelines, other parts use lighter tones within the same color system to avoid color clutter.

3.2 Login Interface

User authentication in computer systems has always been the cornerstone of computer security. The concept of user ID and password is a cost-effective method for maintaining a shared secret between users and computer systems (Conklin et al., 2004). However, due to the diversity of password formats, the complexity of passwords, and different passwords for different accounts, users are likely to forget their passwords (Moallem, 2011). Consequently, I added the “Lost Password” feature to enable users to efficiently recover their passwords and regain access to the system, thereby enhancing user convenience and system security.

3.3 Accessibility

In a contemporary society that places a high value on inclusion and diversity, enhancing the accessibility of technology has become a vital issue (Khan et al., 2024). Mainstream mobile devices often require a lot of visual and physical interaction, which is particularly challenging for visually impaired people (Hakobyan et al., 2013).

To accommodate visually impaired users, I designed three optional features: the voice broadcast function which can read out different elements on the screen, the voice assistant that allows the user to give voice commands to navigate the application, and an adjustable font size button that can improve readability, which would be especially helpful for the elderly population who may experience reduced vision (Tu & Luo, 2024).

Furthermore, to accommodate color-blind users, web and interface designs should combine text labels with color palettes (Herlina, 2024). For example, for yes and no buttons, text is explicitly placed at the bottom of these colored buttons to specify the action. This practice helps mitigate the challenges of color blindness, regardless of color vision limitations.

3.4 Event Discovery

Information architecture is an important determinant of design usability. Providing logically structured web pages and interfaces can help users find information and complete tasks (Rosenfeld & Morville, 2002). In this context, the events are listed chronologically, with the latest published event at the top. This conforms to people's natural expectation of viewing the latest information first, just like receiving text messages or emails. This also aligns with Nielson's second usability heuristics of matching the system with the real world (Nielsen, 1994).

With the digitalization of work and private life, information is provided in large quantities in digital form; information overload has become a common problem (Arnold et al., 2023). To mitigate this, I designed filters and the search bar to reduce information and cognitive overload. Filters can be classified according to academic, social, career, interest, and date, while the search enables the user to directly search for the relevant information they seek.

3.5 Personalized Recommendations

Personalized recommendations based on user historical RSVP records improve the accuracy of recommendation systems (Perugini & Gonçalves, 2002). In the prototype I designed, user engagement and the accuracy of personalized recommendations can be improved by setting personal preferences and enabling historical RSVP records. In the personal preference settings, the user can select the categories of interest, such as academic, career, department, social, and others. This decision is made because both (Nielsen, 1994)'s third user heuristic and studies indicate that recommendation systems that give some control to users receive more positive reviews (Harper et al., 2015).

3.6 RSVP and Calendar

Miller (1968) emphasized that quick responses can significantly improve user efficiency and satisfaction. This is taken into account for the RSVP user flow to provide swift responses, where minimum steps are involved to confirm(two/three clicks for single/multiple time slot events). For the calendar interface, I followed Nielsen's fourth usability heuristic of being consistent with common standards (Nielsen, 1994). Therefore, the calendar interface is intentionally similar to mainstream calendar layouts. User can also export the event to other calendar apps on their device.

3.7 Upcoming Event Display, Updates, and Reminders

The Upcoming Event Display, Updates, and Reminders feature is designed to enhance time management and user control in the application. Calendar reminder messages will remind the user 15 minutes before the event starts by default. Users can customize or disable this setting in settings, which again complies with Nielsen's third usability heuristics of user freedom and control (Nielsen, 1994). For notifications of event changes, the number of updated events will be displayed prominently in the upper right corner of the

notification. After clicking on it, a prompt message provides a summary of the changes, followed by detailed information. This hierarchical organization of information, such as providing a summary first and then providing details, helps users process content efficiently without being overwhelmed. In all of these user flows, I put a back button on the top left corner so that the user has the flexibility to redo or step back to the last page, which complies with Nielsen's third usability heuristics (Nielsen, 1994).

3.8 Social and Networking Features

Oesch et al. (2022) surveyed 996 users in the United States and the United Kingdom to understand their perceptions of security and privacy in group chats. The study identified that group chats face unique challenges, such as managing group members, building trust with new members, and filtering shared content (Oesch et al., 2022). Based on these findings, my design incorporates three features that protect user privacy after registering social events: 1) participants can only view relevant participants in the same event. 2) Restriction on communication methods: only quick dialog boxes are allowed for brief communication to avoid privacy leaks. 3) User can also turn on anonymous mode in their privacy setting so that others cannot directly message them.

3.9 Icon

In the HCI course, I learned that unrelated functions should look different. Accordingly, each button with a unique function was assigned a distinct icon.

Familiar icons, such as those for the homepage, filter, and search, enhance user comprehension and reduce cognitive load, as they are widely recognized and do not require translation (Harley, 2014). In my design, I use these popular icons to avoid overly lengthy text descriptions. In addition, icons like stars are often used to represent favorites and bookmarks (Harley, 2014). Therefore, I used a star icon in the category selection to indicate the selected category, improving usability and understanding.

Research shows that yellow is more valuable as a warning sign than other colors (Gopang et al., 2024). Therefore, when an app error occurs, using yellow as a warning sign is more

suitable for indicating an emergency.

3.10 Color, Space and Punctuation

Red attracts attention more than other colors (Kuniecki et al., 2015). In this case, I set important text in red, such as information about events in the calendar, notification text, and notification symbols, so that users can quickly process important information.

In designing the interactive interface, adequate spacing is essential to prevent crowding, which could lead to errors (Harley, 2019). Therefore, there is enough space between each function to avoid accidental touches.

Furthermore, exclamation marks not only generate emphasis, but also signal critical information (Hazrat, 2022). I added an exclamation mark to the text design of "Successfully added to calendar!" to underscore the significance of this positive notification.

3.11 Map

In a highly mobile digital culture, the design of map applications must cater to individual preferences and usage contexts (Bartling et al., 2022). To support this, location hyperlinks are used in each location section. Clicking the hyperlink jumps to the device's default map interface, which is also what the user is familiar with.

3.12 Warning

Effective error feedback is crucial in design (Bargas-Avila et al., 2010). Therefore, when the app becomes unresponsive, experiences a system crash, or a page is not found, I have implemented a warning interface to inform the user of the issue.

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