Democratizing Event Management: Developing a Mobile User Interface Tailored for College Students

CS4991 Capstone Report, 2023

Jay Chadha
Computer Science
The University of Virginia
School of Engineering and Applied Science
Charlottesville, Virginia USA
jrc7qt@virginia.edu

ABSTRACT

Low stake events in a collegiate setting continue to rely on wristbands or guest lists for authentication, resulting in inefficiencies related to wristband distribution and guest check-ins, increasing the chance for unauthorized guests to gain entry. Using Flutter, my team and I developed DoorList, a cross-platform mobile application tailored to the collegiate market, featuring a continuously changing QR code unique to each user to permit entry to an invitation-only event. DoorList enables customers to host events, invite other university social organizations, and monetize their events. The application's user interface underwent a strategic transformation with a specific emphasis on repositioning features and buttons to enhance user engagement. This undertaking yielded an increase in feature usage and an observable upswing in the conversion rate to paid customers. As the application continues to grow in both the number of users and features, redesigns of functionalities within the application are inevitable to meet the evolving customer needs.

1. INTRODUCTION

DoorList is a mobile application focused on democratizing event management for college students, satisfying the distinct requirements of the student demographic and collegiate social organizations. DoorList allows customers to host events, monetize their events, and invite entire social groups at their university in one click. Each DoorList user has a unique continuously changing QR code that they use to enter any event they are invited to. The QR code is invalid if screen-shotted or screen-recorded, ensuring that only the invited users can attend the event. This dramatically increases the security compared to wristbands or guest-lists, which can easily be circumvented.

2. RELATED WORKS

Babich (2020) discussed the importance of keeping a mobile app useful and intuitive as a solution to the problem of cluttered UI that plagues so many apps. He mentioned "cutting out the clutter" as a major selling point to an app. Features that are not critical for the user to see right away should be placed in submenus or hidden. A drawback to this approach is the increased number of submenus required to house these features. I utilized Babich's approach when redesigning DoorList, by putting many of the noncritical buttons and features that into submenus. I addressed the issue of making too many submenus by thoughtfully combining several related features and placing them into a single submenu.

King (2023) discussed the importance of creating consistent UI patterns across an app to standardize features. He mentioned that creating such standards improves the usability

of the application as the user is familiar with the design patterns. A drawback to this approach is the amount of time required to redesign non-critical features to match the design patterns which may not have a high return on time investment. I utilized King's suggestion of creating consistent designs when redesigning DoorList. Most of DoorList's UI was inconsistent between pages. I created standardized modals that are now used throughout the app, making it feel familiar each time a different feature is used. I addressed the issue of inconsistent design, by implementing design changes slowly over time. I focused on redesigning the most critical features first.

3. PROJECT DESIGN

When I joined the company in March 2023, a year after the app's initial launch, my first task was to redesign the UI. Several changes needed to be made to improve the customer experience making functions such as creating events and creating or joining organizations simpler to use. These changes are documented below.

3.1 Challenges with Previous DoorList UI

Being focused on finding product-market fit, the initial UI was not designed to be a visually appealing product. Instead, the goal was to build out a functional utility solving a common issue college students faced. Most of the initial UI did not follow Apple's Human Interface Guidelines (HIG). HIG helps developers learn how UI elements should be used within their app. Not following HIG resulted in DoorList being plagued by unconventional UI practices.

Instead of using HIG's recommended UI element, a picker, the initial version seen above in Figure 1 uses an action-sheet, which is used for confirming the deletion of items within an app. Therefore, its usage for selecting a host for an event is not in line with its intended use case.

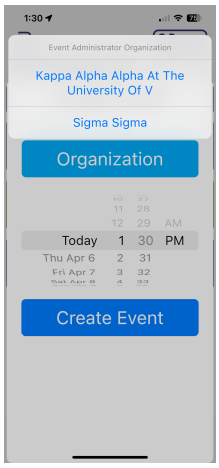

Figure 1: Initial Event Creation Page

Another aspect that hindered the application was long text overflowing off the screen or getting cut off in its parent container. This is attributed to both the font size being too large and the textbox not properly scaling down text to fit the container. Lack of adequate space for text forced some organizations to use acronyms to display properly (Figure 2).

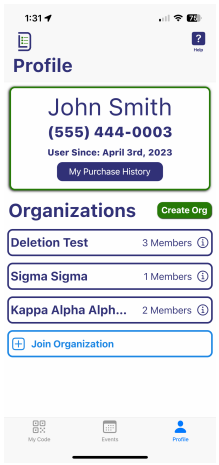

Figure 2: Profile Page

Besides the aesthetics of the application not being uniform, the app was not user friendly. When creating an organization, the textbox for selecting which school one is affiliated with did not appear until after submitting their organization name. To the user it is not clear that another textbox would appear, which was confusing (Figure 3). Figure 3 shows the school selector not present.

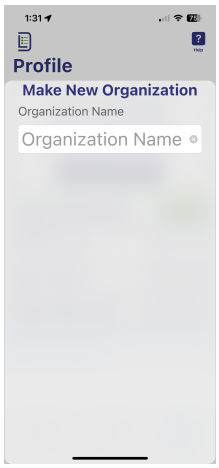

Figure 3: Organization Creation Page

3.2 Requirements during the Redesign

One requirement I set for myself was to reduce the number of accent colors used throughout the app to just the two found in the now previous logo design. Reducing the number of accent colors takes attention away from less important elements within the application.

The second requirement was to simplify common actions taken by users. To do this, I followed design patterns used in other mobile applications. For example, in the new event creation page, Figure 4, I took inspiration from the event creation page in the iOS calendar app.

The last requirement was to keep functionality of the app roughly in the same places. This ensured that existing customers would still know where to find functionalities they are accustomed to using.

3.3 Potential Solution

After doing a review of the app and defining the requirements of the redesign, I started to mockup a few pages of the application to build the foundation for the next version of the app. These pages consisted of the main tabs of DoorList that users saw every time they opened the app. I drew inspiration from these mockups when building out other submenus and features. They proved to be extremely helpful as a reference for redesigning the rest of the app.

4. RESULTS

After completing the initial mockups, the redesign of the app commenced. The redesigned event creation page, Figure 1, I decided to move away from the action-sheet used for selecting an organization. Instead HIG suggested using a picker (Figure 4). A picker is more versatile as it can handle much more options than an action-sheet.

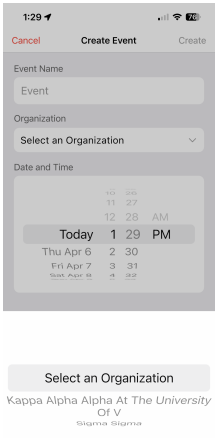

Figure 4: Redesign Event Creation Page

The redesigned profile page which replaces Figure 2. In this redesign, I addressed the text overflowing problem and reduced the number of accent colors on the screen (Figure 5).

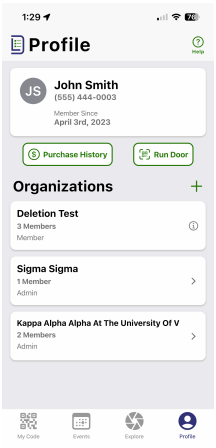

Figure 5: Redesigned Profile Page

I fixed the issue mentioned for Figure 3, included the school selector being hidden until a user inputted an organization name. The redesign also has the action button for creating an organization on the top toolbar instead of being hidden. In addition, the redesign of the organization creation page (Figure 6) matches the buttons, colors, and layout of the redesigned event creation page seen in Figure 4.

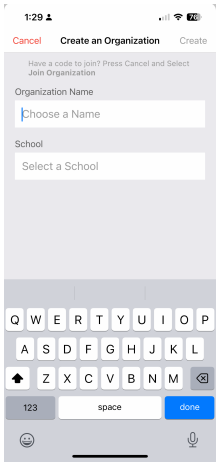

Figure 6: Redesigned Organization Creation

Overall, the newly redesigned app increased customer satisfaction and sparked redesigns of other features throughout the app. Releasing this update also sparked more communication between customers and the team. We received feedback from customers, acknowledging the app's improved user-friendliness. As time went on, customers began suggesting new features or improvements to the application. We found that simplifying the UI led to fewer accidental actions by customers; for example, creating an organization, when they were trying to join an organization. Improving these workflows through UI redesigns proved to be one of the best ways to improve the user experience.

5. CONCLUSION

DoorList's redesigned UI has been critical to the application's success as simple and intuitive design increases the adoption rate at other universities. I put a lot of effort and thought into redesigning these buttons and functionalities, which went through several designs and iterations leading to the app's current form. These changes have been instrumental in laying the foundation for the application to continue its growth into new markets.

6. FUTURE WORK

Since these initial changes were released in the spring of 2023, the app has gone through even more UI changes that has streamlined functionality within the application. Future work for the application would be to redesign more features such as the admin pages and refine event creation pages. Other future work would be improving accessibility adding text that scales when a user selects a larger device font size.

REFERENCES

Babich, N. (2020, July 24). Mobile UX design: Key principles. Medium. https://uxplanet.org/mobile-ux-design-key-principles-dee1a632f9e6

King, M. (2023, July 13). Mobile app design guidelines. Business of Apps. https://www.businessofapps.com/app-developers/research/mobile-app-design-guidelines/