

# KinX

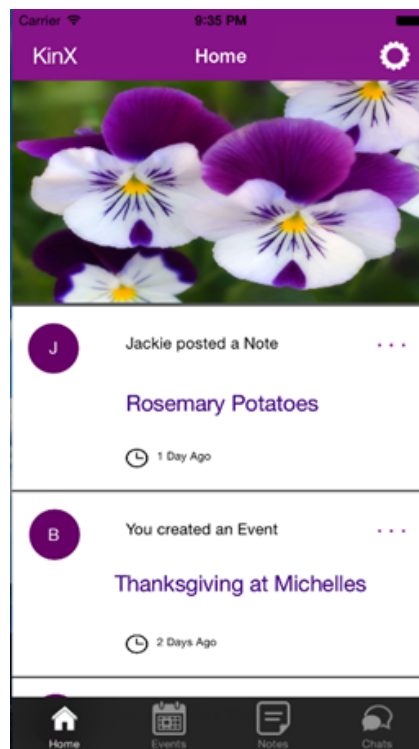
*Bringing families together*

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## PROBLEM & SOLUTION OVERVIEW

The family as a social group lacks a platform for sharing, discovery and aggregation of information. The workaholic culture and online communications have exacerbated this problem, causing families to spend less quality time together. The explosion of data in the context of family has created a new opportunity for better management and social connectivity. KinX is a mobile application which addresses the aforementioned problems in three broad categories:

- *Family* - help families member communicate with each other
- *Organization* - help families operate, such as planning events, parenting, assigning tasks and creating reminders
- *Connection* - help families communicate with other families and get reviews of everyday services



## TASKS & FINAL INTERFACES SCENARIOS

- **Task 1: Send a message(easy)** - Sending a message is our most simple and frequently used feature. We chose task 1 as message sending because handy access to a family chat is crucial to facilitate intra-family communications. The user accesses the Chat screen from the Home screen by tapping the speech bubbles in the upper left corner and then selecting the group to chat with. After the selection, the user is presented with the standard messaging screen found on the iPhone. See Fig.1.

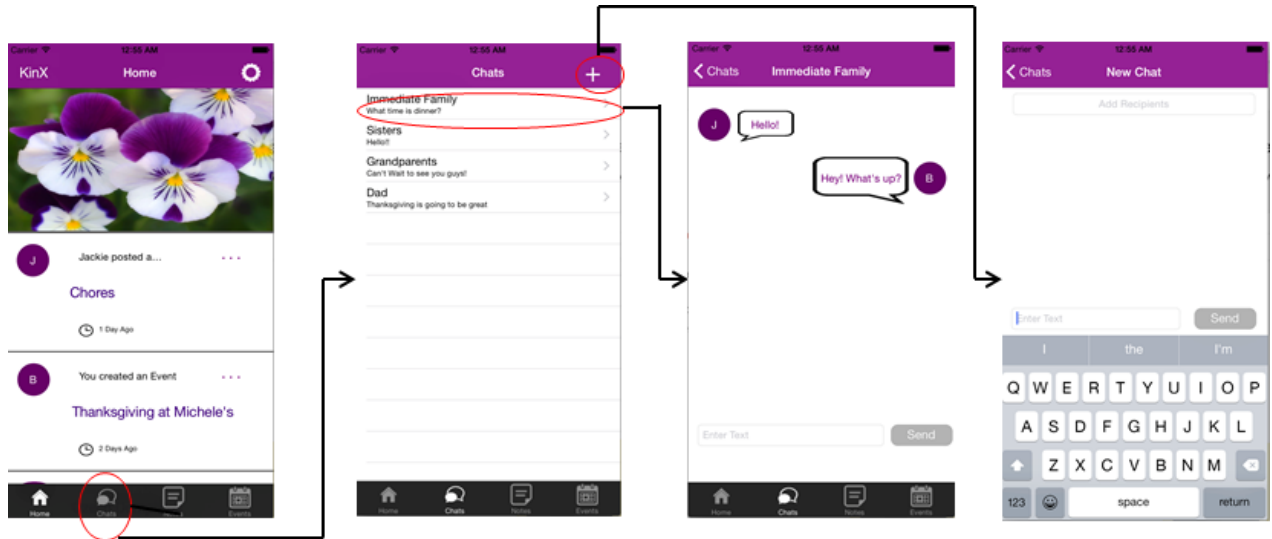


Figure 1 Screenshots of Task1

- **Task 2: Send a calendar invite (medium)** - The second task is more complex because it involves creating an event, notification and sharing option. We chose task 2 as notifying families of a reunion because organizing an event involving multiple family members plays an integral role in planning and operating family life. The user accesses the Events screen from the Home screen by tapping the calendar icon below the search bar. From the Events screen, the user may review current events or create a new event. See Fig.2.

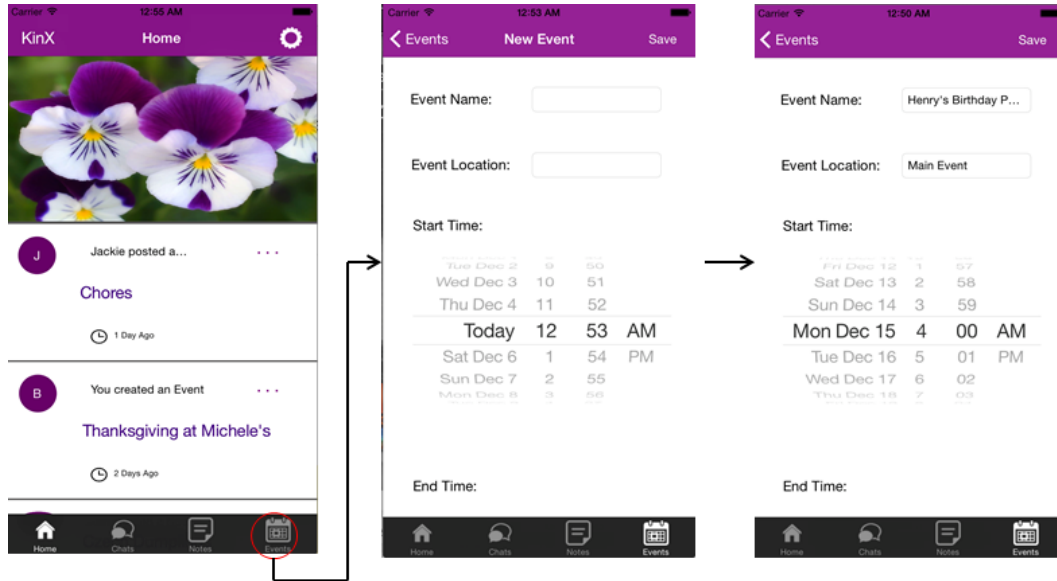


Figure 2 Screenshots of task2

- Task 3: Share a recipe (difficult)** - The hardest task is to share a recipe on the family forum, which could be extended to the sharing and reviewing of various family services and activities. Task 3 represents a core value of our project to bring inter-family information channels into play. To share a recipe, the user need to create a note first by tapping the note icon below the search bar. Similar to Events, the user may review current notes or create a new note. Lack of a dedicated recipe screen makes the creation process more difficult, see Fig.3.

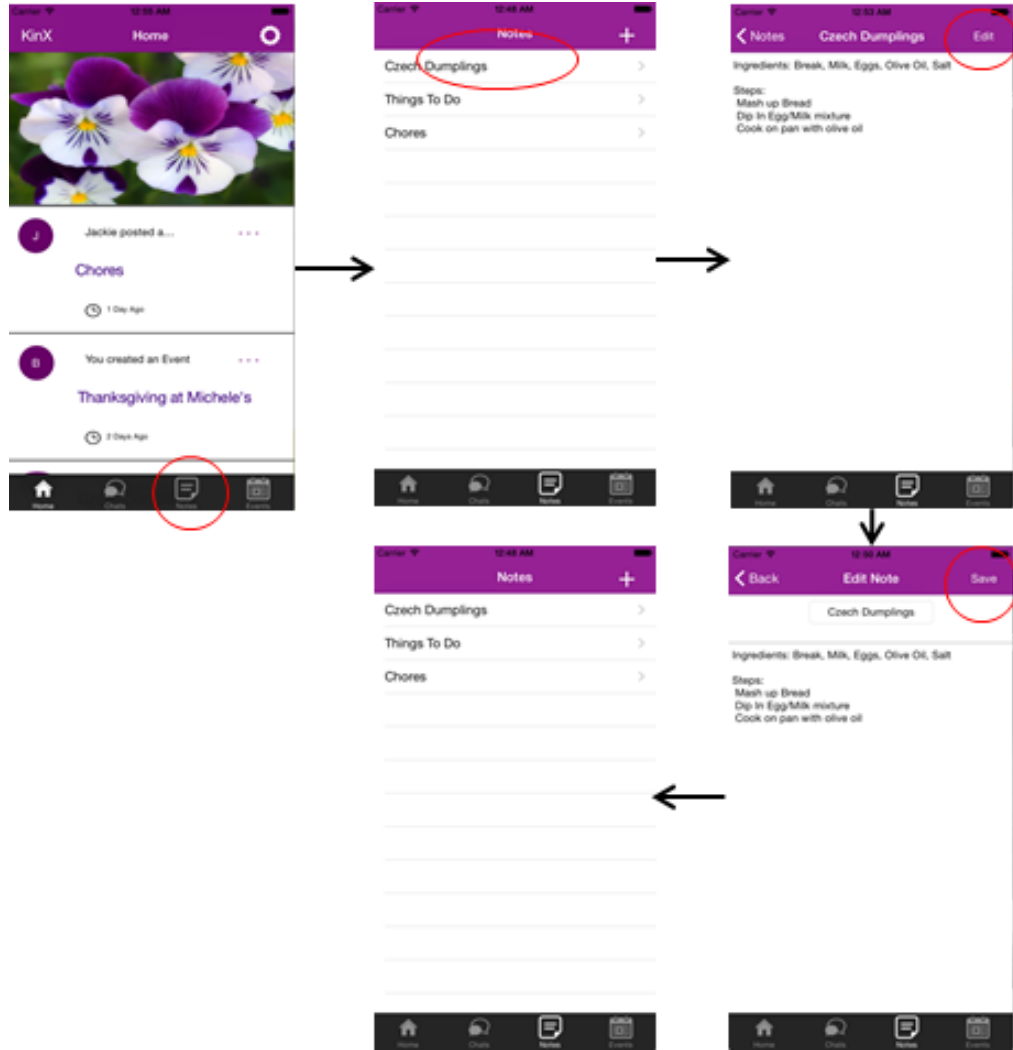


Figure 3 Screenshots of task 3

## MAJOR USABILITY PROBLEMS ADDRESSED

- [H2-4 Consistency & Standards] [Severity: 3] [No.: (1)]

The current location of the chat button is confusing. Since the family chat is a distinct function of the app, it should have its own tab probably on the bottom of the UI. The top right side of the UI should instead be used for metadata or settings.

In the hi-fi prototype, we move the chat button from the upper right corner to the bottom and replace it with a setting button, shown in Fig.1.

- [H2-8 Aesthetic and minimalist design] [Severity 3] [No.: (2)]

A user might be confused by the choice to see more options by clicking the “>” icon at the right of the row across the top of the screen (containing “Note”, “Album”, etc.), or by clicking on the menu icon in the upper left corner.

We remove the row altogether to eliminate ambiguity and maximize screen real estate for the news feed. The most frequently used features “Notes” and “Events” are moved to the bottom tab bar along with “chats”, shown in Fig.4.

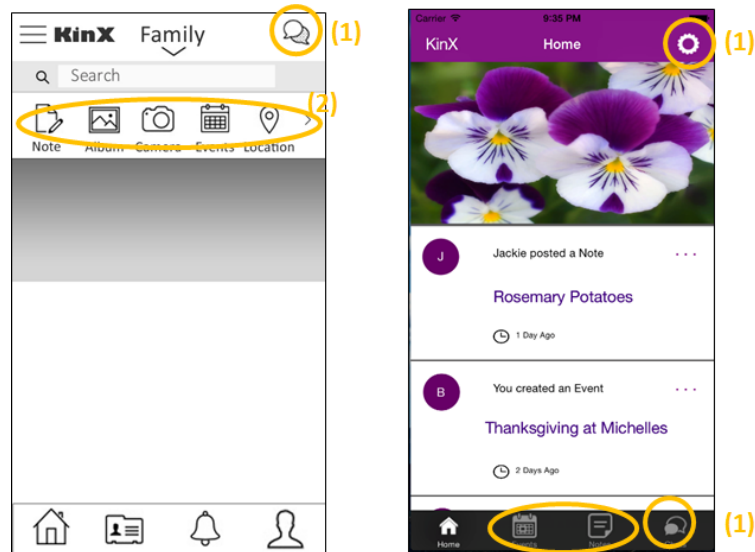
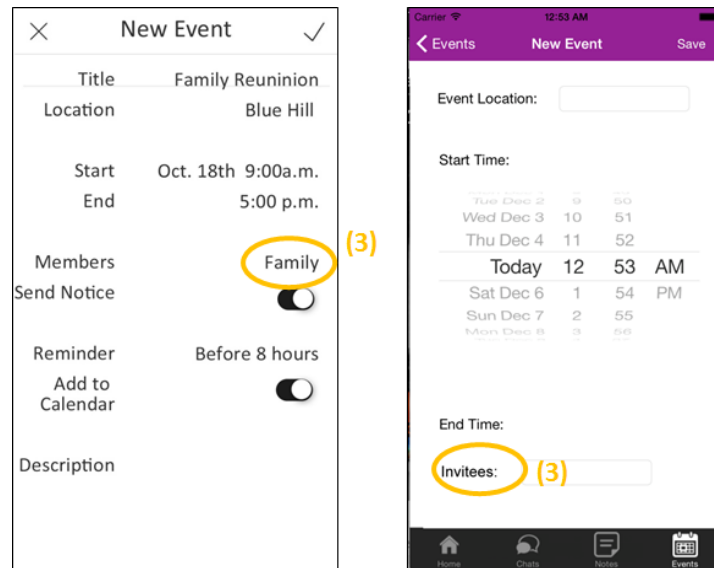


Figure 4 Usability problems(1), (2)

- [H2-8 Aesthetic and minimalist design] [Severity 3] [No.: (3)]

The only function currently implemented is to create an event, and invite all the members of the group (in this case, “Family”). The user should have the option of inviting another group to an event page without having to remake the event.

The mid-fi prototype only allows for a fixed-path task. In the high-fi prototype we are able to make room for revising the event after the user creates it, see Figure 5.

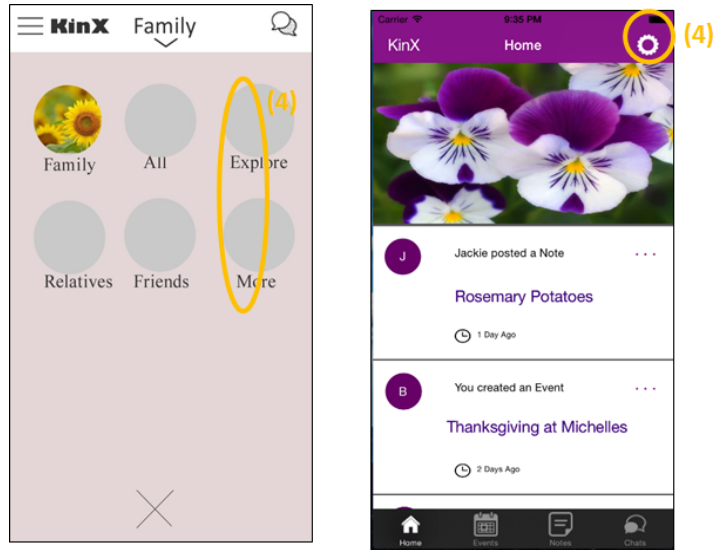


**Figure 5 Usability problem(3)**

- [H2-4 Consistency and standards] [Severity 3] [No.: (4)]

We attempted to integrate connection among different families and automatic recommendation of family services into the daily news feed, but it led to a confusing hodgepodge of irrelevant tasks for users who mainly focus on intra-family communication. Particularly, the naming of “Explore” and “More” on the dropdown list does not accord with the type of other icons which are all names of groups.

Temporarily we cut off the cumbersome features on family service reviews and a broader range of social connection with other families to keep our app concentrated on the core utility functions, but we are still open to the possibility of finding new value in the information shared within a family. The advanced configuration would be found in “Setting”, which is currently left out. The changes are shown in Fig. 6.

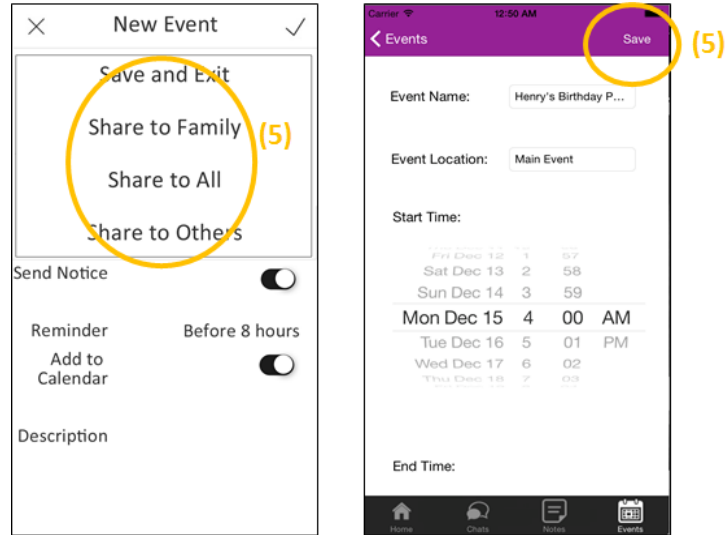


**Figure 6 Usability problem(4)**

#### Other changes

- [H2-7 Flexibility & Efficiency of Use] [Severity: 2] [No.: (5)]

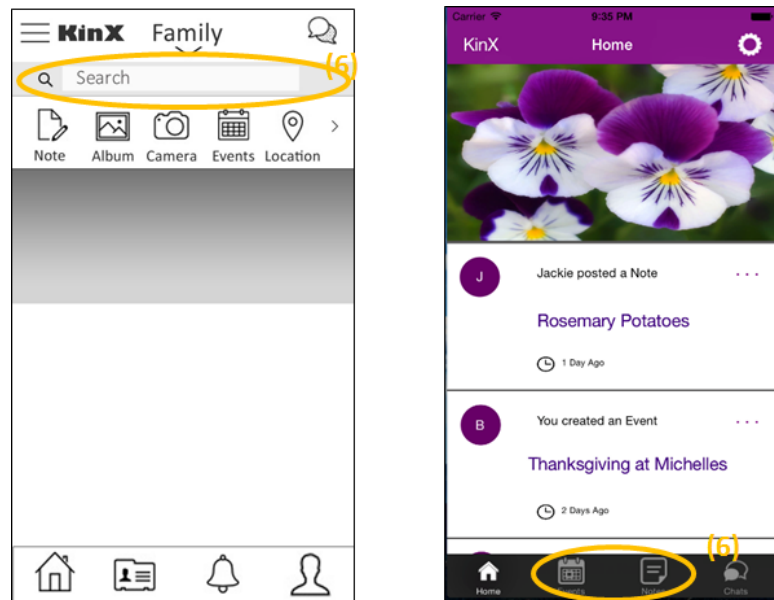
There used to be some ambiguous naming of the options listed within the event feature. For example, in the mid-fi design we left the room for the user to choose a distinct group to share his/her updates with, but this turned out to be redundant as we realized that inside the family members form a highly entrusted social circle where privacy issue is not a main concern. What was worse, the user may feel confused by “Save and Exit” or “Share to X” and question if saving action automatically leads to sharing on the family forum. In the hi-fi prototype the share parameters were designated in the creation of the event, instead of chosen when the user taps to confirm, shown in Fig. 7



**Figure 7 Usability Problem(5)**

- [H2-7 Flexibility & Efficiency of Use] [Severity: 2] [No.: (6)]

The search bar in the home page suggesting an omnibox of sorts (members, events, notes, etc.), which could be confusing for the users. In the hi-fi prototype, we removed the search bar from the home screen. Specific search functions within a particular feature such as events or notes could be implemented inside the tab.



**Figure 8 Usability Problem (6)**



## DESIGN EVOLUTION

### Start with low-fi prototypes

Based on the contextual inquiry results, we started off with a paper-based low-fi prototype. The prototype is composed of a series of screens (iPhone 5 size) to accomplish the three pre-defined tasks, including starting a family chat, sending an event to all family members, and posting a note on a family forum. A complete view of all screens is shown in Fig. 9.



**Figure 9 Overview of the low-fi prototype**

### From low-fi to mid-fi

We conducted user interviews with our low-fi prototype, recorded their using process as well as verbal responses. Based on the user feedback, we refined the prototype in the mid-fi stage from the following aspects.

- Familiar icons and labels
- Navigation illustrating information architecture
- Options for personalization
- Smooth transition between tasks and the Home screen

Our mid-fi prototype is a series of screenshots drawn in Photoshop and connected in inVision. The high-resolution design along with distinct iOS kits match up with the users' knowledge of the mobile phone and make the UI interfaces more intuitive and understandable.

First, we redesigned the navigation menu to make the Note screen more easily discoverable. In the old interface, shown in Fig. 10a, the Note screen had to be accessed using the "+" in

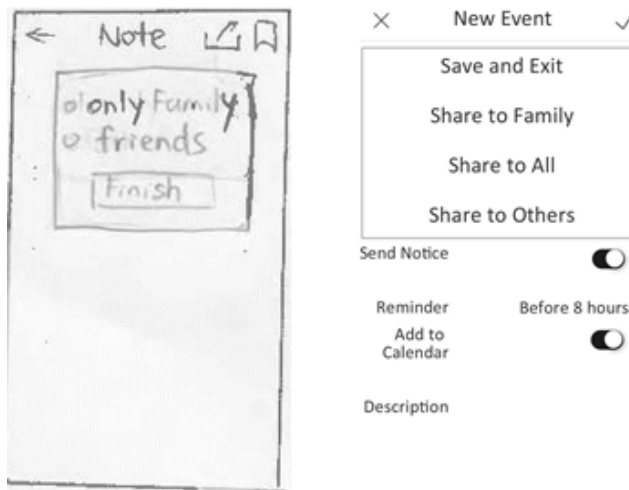
the lower-middle part of the screen. Provided that most interviewees did not figure out how to access the Note feature, in the revised design, we placed the options in Fig. 10b directly under the search bar to provide immediate user access. Second, we learned from testing that our icons were not representative of their functions. As a result, we replaced a majority of the icons with frequently used iOS icons, including Chat, calendar and etc, as shown in Fig. 10c.



**a. Low-fi home screen   b. Low-fi file category   c. Mid-fi home screen**

**Figure 10**

Another point of confusion for the users occurred after they have completed event creation. First, the users were expected to be taken back directly to the Home screen after they tapped “finished,” as shown in Fig 11a. In the old version, instead, they were brought to another confirmation page. After we removed this page, we brought user back to the home screen after creating an event, note and etc, which is indicated by the selection of a sharing option demonstrated by Fig 11b.



**a. Low-fi event page   b. Mid-fi event page**

**Figure 11**

Fig. 12 is a full view of the mid-fi prototype.

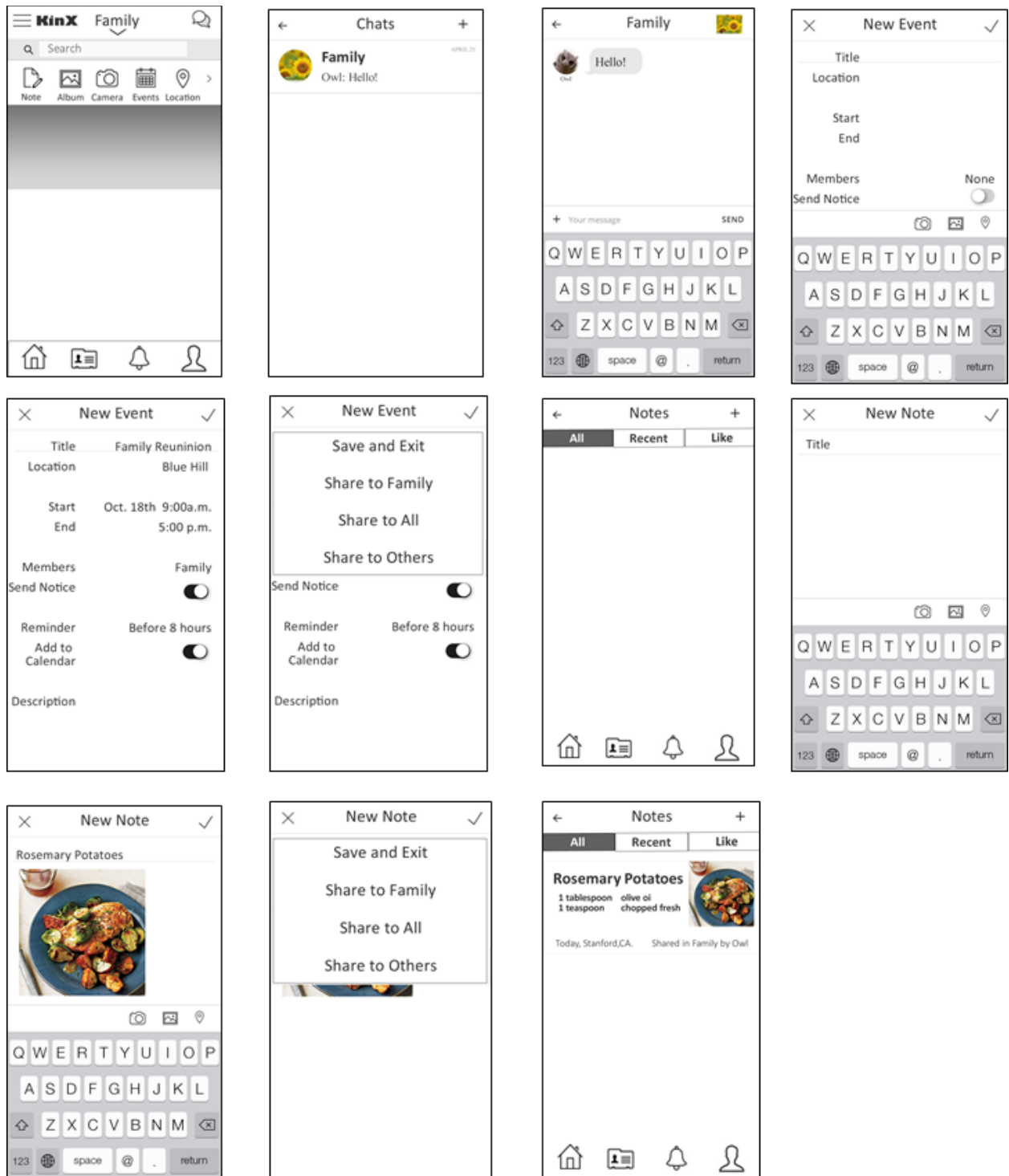


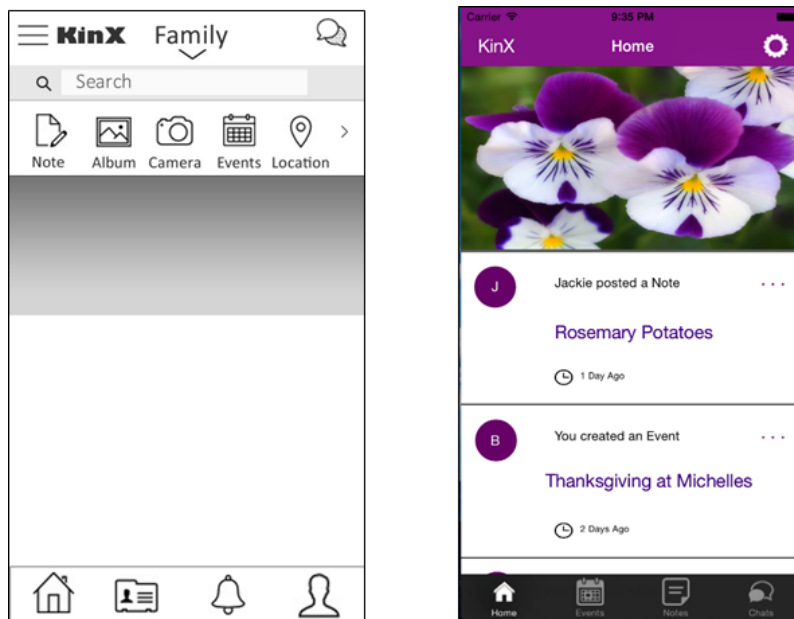
Figure 12 Overview of the mid-fi prototype

## From mid-fi to hi-fi

The main usability problems pointed out in the report of heuristic evaluation included consistency, user control and aesthetic design. To address the issues above, we modified the mid-fi prototype from the following aspects.

- Added theme color of purple
- Removed non-core functionality (Album, Camera and Location). Kept Chat, Notes, and Events
- Moved Home, Chat, Notes, and Events to bottom of screen
- Replaced Setting in top left for Back functionality

First, the mid-fi prototype was in grayscale to display the information structure, in the high-fi prototype we applied purple color to help with navigation and indicate relative importance. Also the prior version suffered from a bunch of cumbersome features that did not specifically cater to family needs and did cause information overload for new users. So in the high-fi prototype we removed the redundant parts and focused on the core functionality of family communication, stressing the characteristics of quick sharing and frequent interaction inside a small circle of trust and intimacy. The major design change is shown in Fig. 13.



**Figure 13 Change in information structure and display**

The mid-fi prototype suffered from a redundancy of actions on the path of task 2 (creating events). Specifically, the multiple options of sharing are confusing and unnecessary for the information exchange confined to the scope of a family. In the high-fi prototype, we trimmed down the design and integrated posting to family news feed with the action of saving an event.

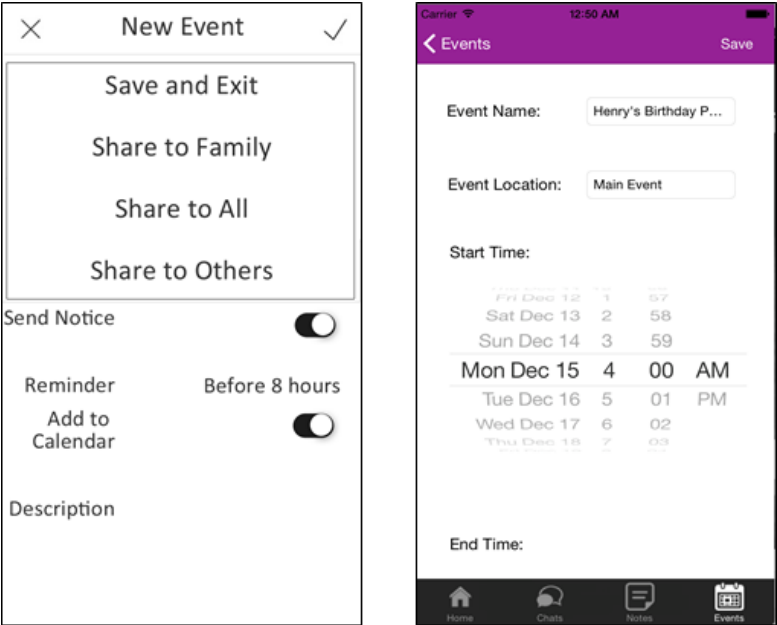


Figure 14. Change in creating an event

Fig. 15 shows an overview of the hi-fi prototype.

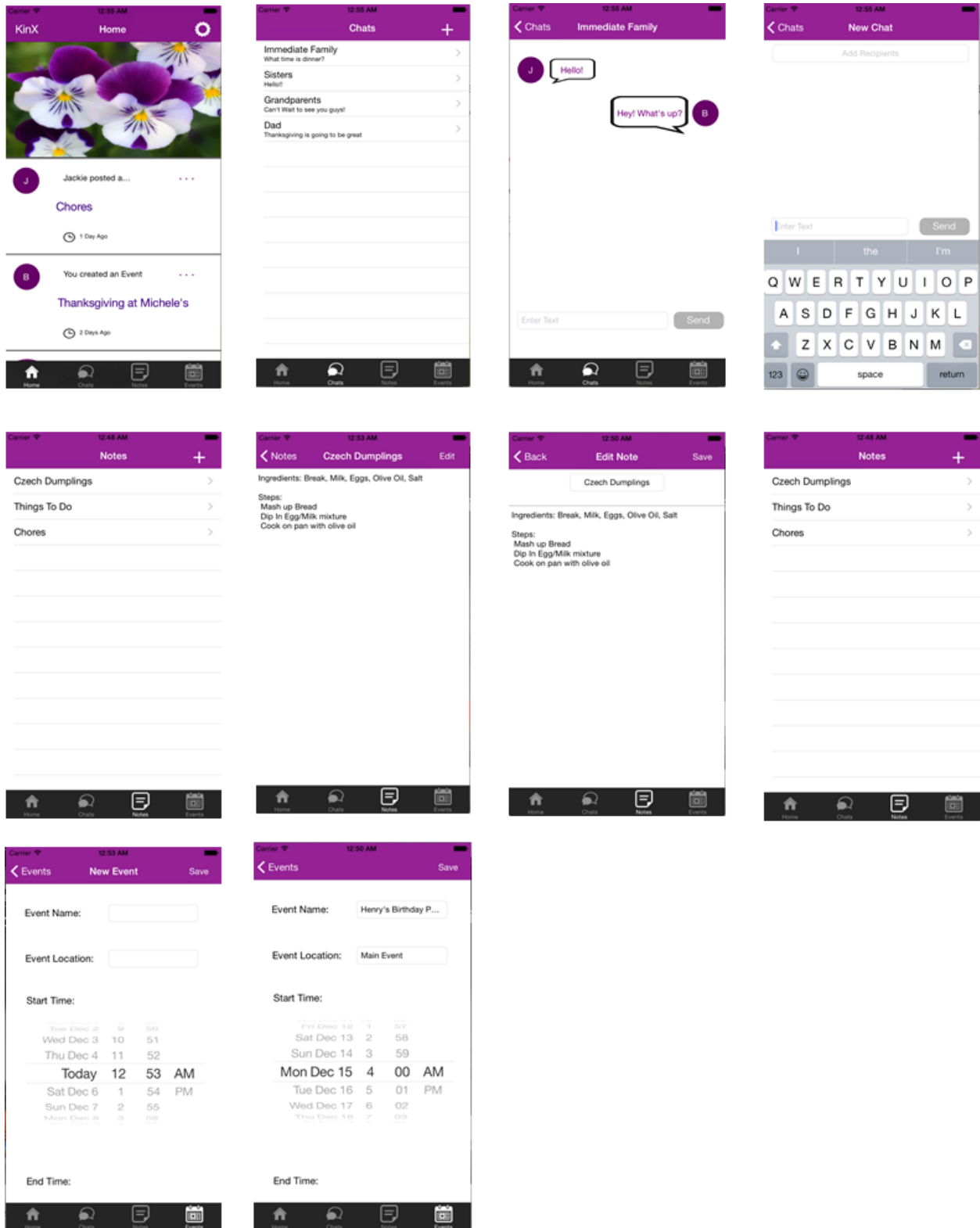


Figure 15. Overview of hi-fi prototype

## **PROTOTYPE IMPLEMENTATION**

### **Tools**

This app created using a Model View Controller architecture within Xcode:

**View** - For most of the visual design, I used the iOS storyboard provided. The storyboard helped make the designing process faster and more intuitive because it gave me a visual representation of what the app was going to look like. I did find the storyboard to be buggy at times, often making it difficult to position elements where they should have been. This was especially difficult when working with different dimensions (iPhone 6 vs 6 plus). Any design features that were very difficult to do in the storyboard, I used code as a supplement.

**Controller** - I was able to hook up elements of the storyboard into code so to make the app dynamic.

**Model** - Most of the information (notes, events) were manually populated within classes designed for storing information.

The MVC architecture helped separate the design and functionality of the app. Overall, the storyboard made things much easier, but some aspects of it made positioning elements quite difficult.

### **Wizard of Oz**

There are quite a few elements of the app that showcase the design of our app without actually functioning. For instance, you can go into the create a new chat/event/note section and fill in all of the information, but when you click save the data does not persist. Also, adding text to a chat and clicking send does not actually do anything but you are given the impression that it does by being able to type in the text field.

### **Hard-coded data**

We had to hard-code the screens that required user supplied-information. For example, in the note feature, we hard-coded the recipe information to allow the user to focus more on the creation and sharing process vs. selecting a picture and actually typing the details of the recipe. We also hard-coded the event details, since there many possible combination of event type, date and etc. In another instance, we hard-coded the family contact information, since a user could in theory create a variety of groups, such as family, grandparents, etc. In summary, we hard-coded features that was impossible for us to account for every use cases.

### **Left out**

We focused on the core product and implemented the critical features but left out certain supplementary features at this stage because of the time constraints. Temporarily, the absence of these features did not hinder users from completing tasks. The following features can be added in the future.

- A start page to help a new user orient through the application, either in the form of the annotations on the actual home page or a splash screen.
- Invite family members to the group. Currently we assume the availability of all the family members in the chat group.
- Syncing calendar with the user's working calendar. The built-in calendar could be useful only if it is synchronized with the user's working calendar, but at this stage we are unable to implement this due to its complexity
- Real-time reminder in the group chat. After the user creates a task and sends an invite of the group members, he/she can choose to send a pop-up reminder in the group chat. This could be especially useful in getting house chores done