

List Assist

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Conceptual Design

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Introduction

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The Conceptual Design phase of mobiQuad's ListAssist user interface was an interesting learning experience.

Usability goals and required features were prioritized by working as a team. The designs presented here, however, were conceptualized individually to eliminate peer influence. mobiQuad found this to be an effective method to use for the first design phase because it generated models that had great variation.

We found three dominant models emerged from the four individual designs (two were similar in theory, different in execution of details). Of the three dominant models, two were chosen to refine and describe for this report.

Project Parameters

Usability Goals

- 1] Easy to input/retrieve data
- 2] Efficient navigation
- 3] All user actions will provide appropriate feedback
- 4] Good legibility

Prioritized Requirements

High Priority

- 1] Users will be able to create, modify, delete multiple lists of items
- 2] Users may assign items in lists to different categories
- 3] Individual items on lists may be added, modified, and deleted at any time
- 4] Users may export/send their lists to other mobile devices (whether or not ListAssist is installed on the receiving mobile device)

Medium Priority

- 5] Users may allow any list to be updated by one or more other ListAssist users, with permissions set by list owner
- 6] Users may import/create lists of ingredients or materials based on recipes or instructions

Low Priority

- 7] For any item on any list, users may define a time to trigger an alert on the device regarding the item.
- 8] Ability to save and recall previous lists (lists that were completed in the past)
- 9] GPS enabled phones have the ability to signal reminder when user is in proximity of the store.

Conceptual Models

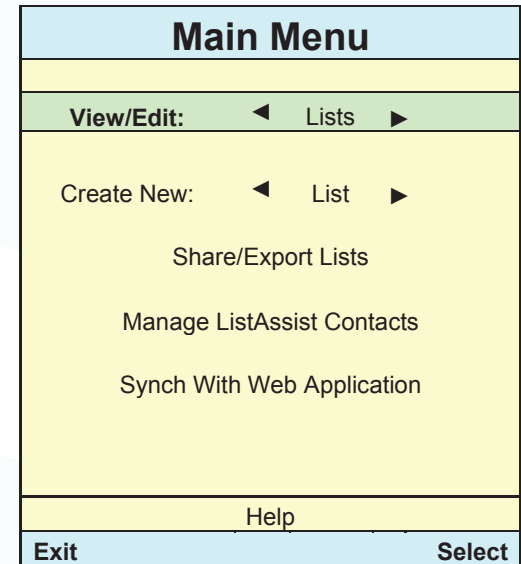
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Conceptual Model #1

The following conceptual model is intended to provide functionality that will enable users to have full control over the management of their lists if they desire to. Lists can be organized into different categories and each list contains items that can be categorized as well. Each item category defines a set of fields that the user wishes to track for items within that category. This enables users to sort the items in the lists by these fields or simply to see information associated with it. Each list can have a default item category set, so that each item in the list belongs to a category. For users who don't wish to have this degree of control, the categorization and field definitions are completely optional, allowing for simple lists consisting of item names.

ListAssist Start Screen

This screen introduces the main concepts of interacting with the application. Users select a menu option by using the arrow keys on their keypad. The green highlight and bold text indicate the currently selected option. The "<" and ">" indicate options that can be cycled through by using the left/right arrows on the keypad. Help can be accessed by highlighting the option and selecting it. The blue row at the bottom indicates the actions taken when the left/right soft keys are pressed. Users can View/Edit or Create New: Lists, List Categories, Item Categories (defines a set of attributes for each item that belongs in the item category).



Viewing/Editing Lists

View/Edit Lists	
Order By: ◀ Name ▶	
Books To Read (7 items) CDs To Buy (3 items) Groceries (18 items) Movies To Rent (4 items) To-do (3 items)	
Help	
Back	Reorder

This screen displays lists which the user has defined. A list in blue indicates the list has been marked as complete. Changing the "Order By:" option and selecting "Reorder" will rearrange the list. For example:

View/Edit Lists	
Order By: ◀ Category ▶	
Entertainment (3 Lists)	
Books To Read (7 items) CDs To Buy (3 items) Movies To Rent (4 items)	
Necessities (1 List)	
Groceries (18 items)	
(None) (1 List)	
To-do (3 items)	
Help	
Back	Reorder

When a list is highlighted, the "Reorder" option changes to "Select" and when clicked, the user has the option of viewing or deleting the list, like so:

View/Edit Lists	
Order By: ◀ Name ▶	
Books To Read (7 items)	
CDs To Buy (3 items)	
Groceries (18 items) Movies To Rent (4 items) To-do (3 items)	
View	
Delete	
Mark As Complete	
Cancel	Select

Conceptual Models

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Note that when a dialog appears, the color scheme changes to focus on the dialog options. When “View” is selected, the following appears:

View/Edit Lists	
CDs To Buy	
Add new item	
Order By:	◀ Name ▶
Achtung Baby Funeral The Joshua Tree	
Help	
Back	Select

Ordering can be done by any category for an item defined in the list (e.g. artist). When reordered, the items in the list will appear in a similar fashion to list names when they are ordered by category.

Adding/Editing Items

An item can be updated, or deleted by highlighting it and selecting “Options” (similar to viewing/deleting lists).

When an existing item is being edited, the screen appears similar to the following:

View/Edit Item Details	
Name: Achtung Baby	
Obtained:	◀ No ▶
Item Category:	◀ Music ▶
Artist: U2	
Genre: Rock	
Year: 1991	
Back	Set

The information can be manipulated by highlighting the appropriate option and selecting “Set”. For text fields, this will bring up the mobile devices built-in text entry mechanism and users can type in information with their keypad.

Other Functionality

The mechanisms shown in this conceptual model can be used for functionality not explicitly covered here. For example:

- Users will also be able to set reminders and GPS information from the View/Edit Item Details screen
- Adding an item to a list is exactly the same as editing an item
- Deleting an item from a list is the same procedure as deleting a list
- Creating a list entails entering a list name, and a default item category (any new item for the list will

default to this category unless the user changes it)

- Defining an item category and its attributes is very similar to creating a list and adding an item to the list.
- Managing the ListAssist contacts is similar to managing a list and items with attributes.
- Exporting/Sharing a list follows the mechanisms for viewing lists and selecting the “Export” or “Share” option.

Pros

- Many options from opening screen
- Items can be ordered by item's categorizations
- Help is accessible from all screens
- The left/right arrow select for on-screen options makes options evident

Cons

- Left/right on-screen options takes up a line of text, subtracts valuable real estate on smaller screens
- The number of options could be overwhelming to a new user
- Add new item is not an evident option from the main page
- Completion status may add complication to the program

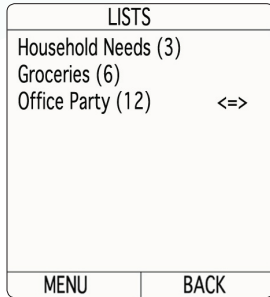
Potential changes to be made:

- Un-categorize lists, while still keeping items categorized in order to simplify data entry on the mobile device.
- Change default “add new” option to “item” so that it is initially apparent and less user actions to create a new item, which is the primary action a user will take on through the mobile application.

Conceptual Models

Conceptual Model #2

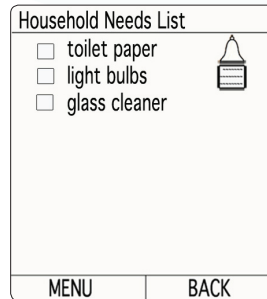
Screen 1: Lists



The user can highlight the desired list by scrolling with the up/down arrow keys on the keypad.

While a list is highlighted, the user can open the list detail page by pressing the center button on her phone. A list with the <=> image is a ListAssist list that is owned by someone else and is shared to the current user.

Screen 2: Household Needs List



Again, the user can scroll through the list by using the up/down arrow keys on the mobile device keypad.

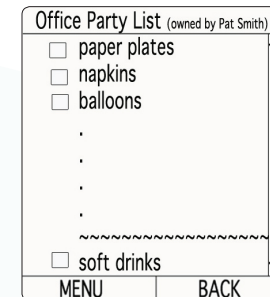
Once a list item is highlighted, the user can either press the center button to "check off" the item or press the "Menu" softkey which would give additional actions that can be performed on the item (the menu detail is shown on Screen 3). The bell icon indicates that a reminder has been set for this particular item (as shown on the "toilet paper" item listed). The list icon indicates that additional detail (a.k.a optional fields) contain data.

Screen 3: List Menu Options



This screen illustrates the options available by selecting the "Menu" softkey while a list item is highlighted.

Screen 4: Shared List



A shared list is a list owned by another ListAssist user. The owner of the list is noted in the header area of the screen. This

view also shows the scroll bar on the right side of the screen, which appears if more items than the length of the screen are on the list.

Screen 5: Add New Item (View/Edit Item)

The screenshot shows a mobile application screen titled "Add New Item (Household Needs)". The screen contains several input fields: "Name" (a text box), "Quantity" (a text box), "Size" (a text box), "Category" (a dropdown menu with a diamond icon), and "Notes" (a larger text area). At the bottom of the screen, there are two softkeys labeled "MENU" and "BACK".

The Add New Item screen contains all the fields that a user could fill out for creating a new item. The user can access this

from the “Menu” softkey within an existing list and selecting “Add New Item”. The name of the list is noted in the header of the screen. The only required field is “Name”. The actual fields are TBD.

The View/Edit Screen would look identical to this screen, with data already existing in the field(s).

Pros

- Icons used to provide information at a glance (i.e. reminder bell and additional detail indicator)
- Checkboxes for have/don't have
- Copy/move can be used to quickly create similar lists
- Simple interface, not overwhelming
- Softkeys are consistent throughout

Cons

- Small text in the headers may be difficult to read and are probably unnecessary, such as: the owner of shared lists (could be used as a list property), and the list name when adding new item (considering the way the screen is accessed, the user most likely knows the list name)
- It may not be clear to users how to save a new/edited item

Potential changes to be made:

- Represent a completed item with a thin red line instead of a checkbox. Our research has shown that this representation would better align with the pen and paper shopping list metaphor. It would also save on horizontal real estate.
- Add prioritization by numbering items
- Add voice recognition option on menu for easier entry of new item
- Add keypad shortcuts for quicker navigation

Contributions

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Conceptual Design #1

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Introduction, document design

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mobiQuad

Each mobiQuad member suggested their own conceptual design. Everyone participated in prioritizing usability goals and features and provided feedback on all four designs. All members edited the final document.