



Writing: Viswanathan Kumaragurubaran

User Testing: Sanjana Prasain

Program Manager: Jia Le He

Design: Kegham Bedoyan

1. Problem and Solution Overview

Public transit is often the desirable form of transportation where it be because of the problem of parking or rising cost of gas or preference to go green. However, public transit riders often need to plan their trips in advance to optimally utilize their time. Publicly available schedules of transit systems (such as the bus schedules) provides just the scheduled time for each stop which might be different than real time information. Applications such as OneBusAway have solved this problem by extracting real time information provided by transit officials and presenting it to users through the web, voicemail, texts and applications on smart phones. Although this application provides pertinent information in a timely manner, there are couple problems with the existing OneBusAway which include useful features being hidden and less user friendly nature of the app for the first-time user. The numerous useful features that are accessible in less obvious places within the app avoid it from being used regularly even by experienced users. We aim to obviate this problem through a user interface redesign for the current OneBusAway iOS application to ensure that OneBusAway provides an intuitive and streamlined user experience. Of specific interest in the redesign is promoting the alerts notification feature. We also acknowledge that OneBusAway application tends to be less user friendly for first-time users of the application or for infrequent bus riders who may not be familiar with the Metro routes numbers, stops and terminals. To ensure that the app is easy to use by everyone, we plan to include a trip planning feature where the application incorporates Google Maps with Directions that would be useful to search for buses based on the destination place of interest such as restaurants. This ensures that the app user does not have to remember stop numbers, route numbers or addresses and has access to all transit related information in a single app.

2. Tasks

Easy Task

A: You work as a businessman in an office. You have just started using the OneBusAway application and want to 'Favorite' a bus route at a particular stop that you frequently use. The route you frequently ride is Route 72. Add a favorite for the stop where route 72 passes through it.

B: Now that you've added this stop, look up the status of your 72 ride to see when you should be leaving the office.

Medium Task

You are at the U-District. You receive a call from a friend to meet him at the Cheesecake factory

at Downtown Bellevue as soon as possible. Use the OneBusAway application to help you get to your destination.

Hard Task

A: You take Route 68 at 3:30PM every Tuesday and Thursday to go to work after classes. Sometimes, you forget to leave campus on time, so you set an alert in the application to remind you of the bus' arrival.

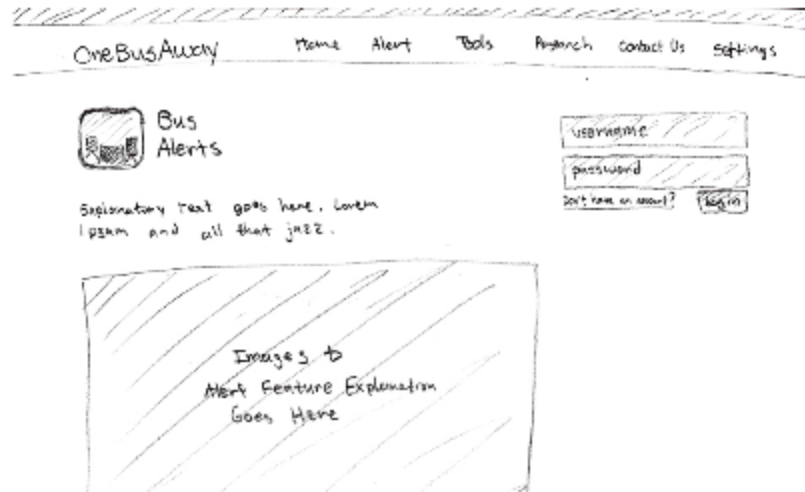
B: Today, just as you're getting ready to leave for work, your manager calls to inform you that you don't need to come into work until a half hour later than usual (you want to take the 4:00PM bus). An alert will still pop up at 3:30PM, handle the alert and ensure that you will be notified for your modified 4:00PM departure time.

3. Interface Revision Sketches

Our project started out with the huge focus on the alerts. Thus, our initial design followed the pattern of existing OneBusAway system and provided the mobile, text and web options to receive alerts. One of the focus of that design included the dependency of mobile to the web for its use since the account was linked with web version (Fig 3.1 and 3.2).



3.1: Mobile version of the sketch for setting various alert notifications



3.2: Web version for setting alerts: Login page and general information about Alerts

During the presentation of the Contextual Inquiry, it was brought to our attention that some of the mobile platform supported alert features. Thus, after this, we shifted our focus from just alert to making system more organized such that those features are more visible for example Alerts is tab by itself (Fig 3.3). Also, based on the Contextual inquiry, we learned from the users that they thought trip planning feature would be very helpful addition to the existing system. Thus, we added Trip Planner following the pattern of Google Maps (Fig 3.5).



3.3: Alerts in a separate tab

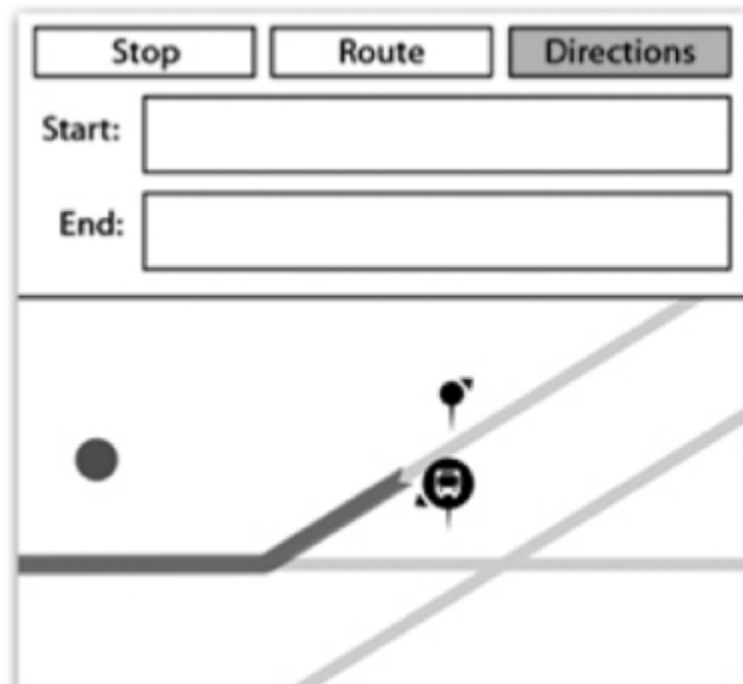
Martin L King Jr Way S & S Othello St
NW Bound

Filter Routes
★ Favorite Stop

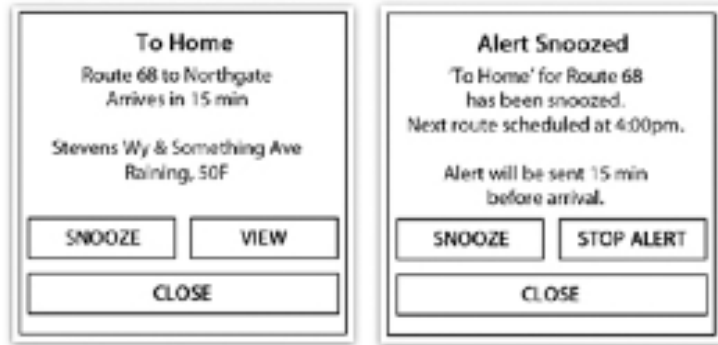
	Route	Destination	Time
★	72	Downtown - 1:51pm, on time	-4
★	72	Downtown - 1:51pm, on time	6
★	72	Downtown - 1:51pm, on time	29

+ Load More

3.4: Making Filter Routes (existing feature) more prominent

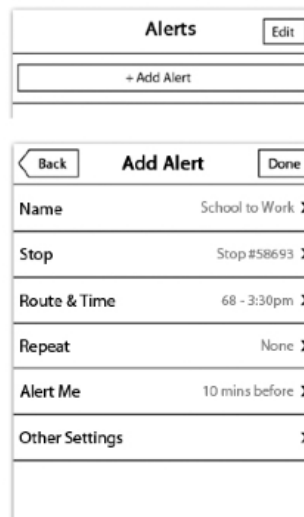


3.5: Trip Planning Feature

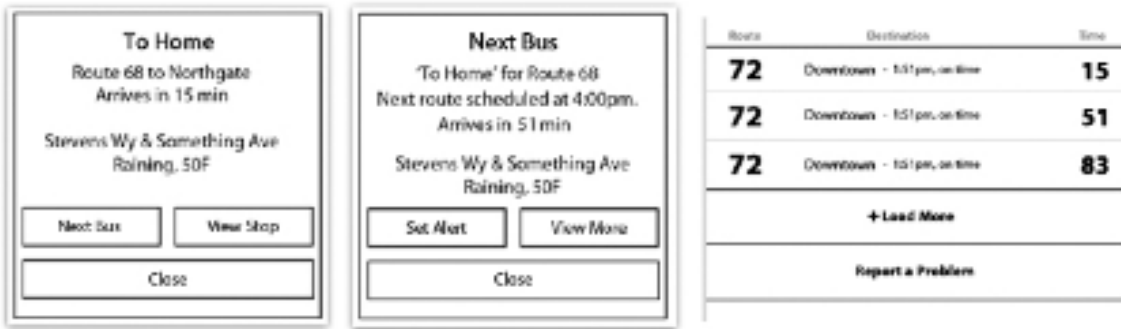


3.6: Snooze feature to get alert for next bus

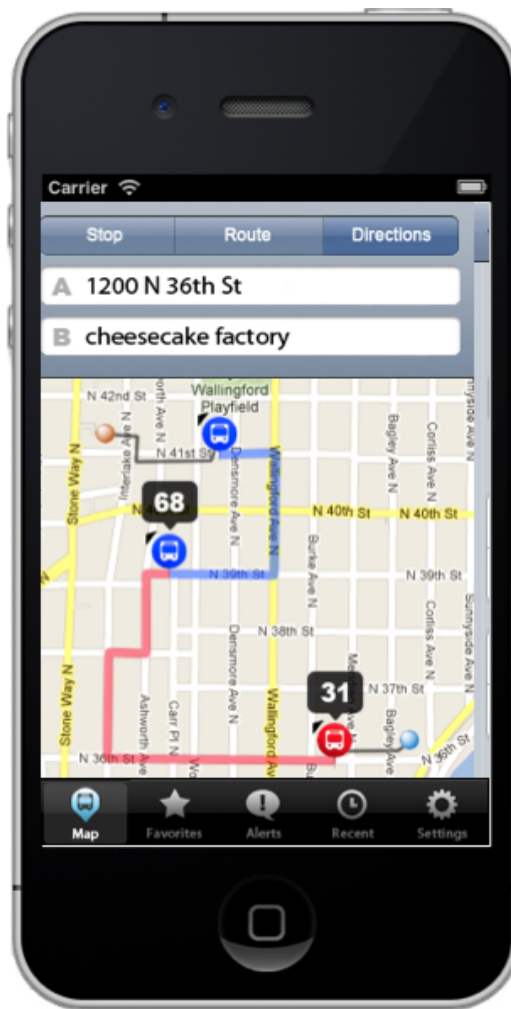
We did our user testing with the refined version of prototype with above mentioned changes. Couple of things that were pointed out during the testing were: alerts were confusing since selecting alert would take to maps, snooze wasn't clear and map was not clearly labelled. To address these issues, we changed the functionality that when alert is selected, it would take to the page with alert setting (Fig 3.7). Similarly, we maintained the functionality of snooze, but named it "Next Bus", thus indicating its real purpose of setting alerts for the next bus (Fig 3.8). Furthermore, the concerns was with the map especially with the trip planning with transfers. To make transfers clear now, map uses different color for different transfers and also the number of bus on the top of bus-icons (Fig 3.9).



3.7: "Add an Alert" takes to Alert Setting instead of map



3.8: "Snooze" is now changed to "Next Bus"



3.9: Maps with different colors and bus route number

4. Prototype Overview

Based on a lot of user feedback, we made a lot of design changes in addition to the change of focus of our project. Our main focus now is still alerts in addition to integrating trip planning and maintaining all the existing features with a little bit of organization.

a) Overview of implementation

Our prototype implements Alerts and Trip Planning features. Alerts include setting alert and interacting with it. For example if you miss the bus, it has the function of “Next Bus” that will give information about the next bus. Trip Planning is another major feature of our prototype. It follows the Google Pattern to provide bus information with the well labeled maps about various bus to take to reach the destination.

b) Scenarios for 3 tasks

Easy: You have used the OneBusAway application before and now want to set up a new ‘Favorite’ for all buses heading southbound on Route 72 that go through a nearby bus stop.

- Open up the 'OBA2' application.
- Select 'Route' on the map's integrated search bar.
- Enter in 'route 72' into the text input area and press 'Return'.
- Choose the nearest southbound stop.
- Select 'Favorite Stop' and save the favorite's name as '72 to Home'.
- Your filtered search/stop is now ‘favorited’ for easy access.

Medium: A friend calls you up and tells you to come over to the Cheesecake Factory ASAP. Having no idea how to get there, you use OneBusAway2 to find a bus to your destination.

- Open up the 'OBA2' application.
- Select 'Directions' on the map's integrated search bar.
- Your current location is automatically set, so you simply enter 'cheesecake factory' into Point B and press 'Return'.
- Finally, select the first bus stop on your route (marked with a 31) to view the earliest bus to begin your trip.

Hard: You add an alert for your routine commute on Route 68 Mon, Wed, Fri at 3:30pm to work. Later in the day as 3:30pm draws near, you find yourself running very late. Your alert pops up and you can't make it to the alerted bus. Interact with the alert to find out when the next bus is coming and set an alert for it.

- Open up the 'OBA2' application.
- Select 'Alerts' on the navigation bar and press '+ Add Alert'.
- Choose 'Stop' and select the closest stop to you.
- Next, select 'Route & Time' and select 3:30pm.
- Change other settings for your alert and then press 'Save' when done.

- Your alert pops up after a while. Select 'Next Bus'.
- Press 'Set Alert' to set a temporary alert for the next buss and press 'OK' on the final notification.

c) Description of tools used

To build our interactive prototype, we first fleshed out our low fidelity prototype with the appropriate visual aesthetics found in OneBusAway and iOS. These many UI elements and pieces of our prototype were created in Photoshop and later exported to be put together using HTML, CSS, and Javascript (jQuery). Since our ultimate goal was to present this prototype on our project website, we thought utilizing web-based scripting languages would be sufficient.

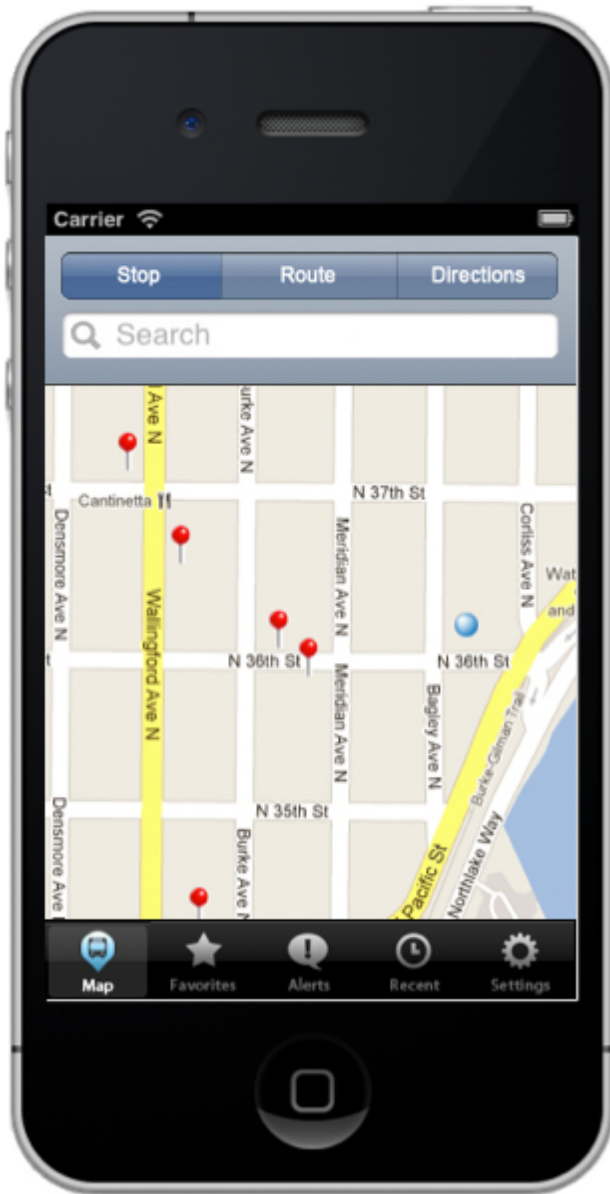
In retrospect, it would have been nice to have used an application that promotes faster prototyping. Photoshop provides a great way to create visual elements and we had no issues with creating our visual elements in it. The only problem that arose was with Javascript. This scripting language was more than sufficient for this class's project, but it's still a bit time consuming and not flexible enough for rapid prototyping, especially if drastic changes are needed to be made. Alternatively, an application like Sencha Animator would have been more beneficial. This program does not require any scripting and simply generates CSS3 animations/connections through a drag-and-drop/timeline-based interface. Unfortunately, Sencha is only supported in WebKit based browsers, leading us to stick with Javascript.

d) What was left out of the prototype and why:

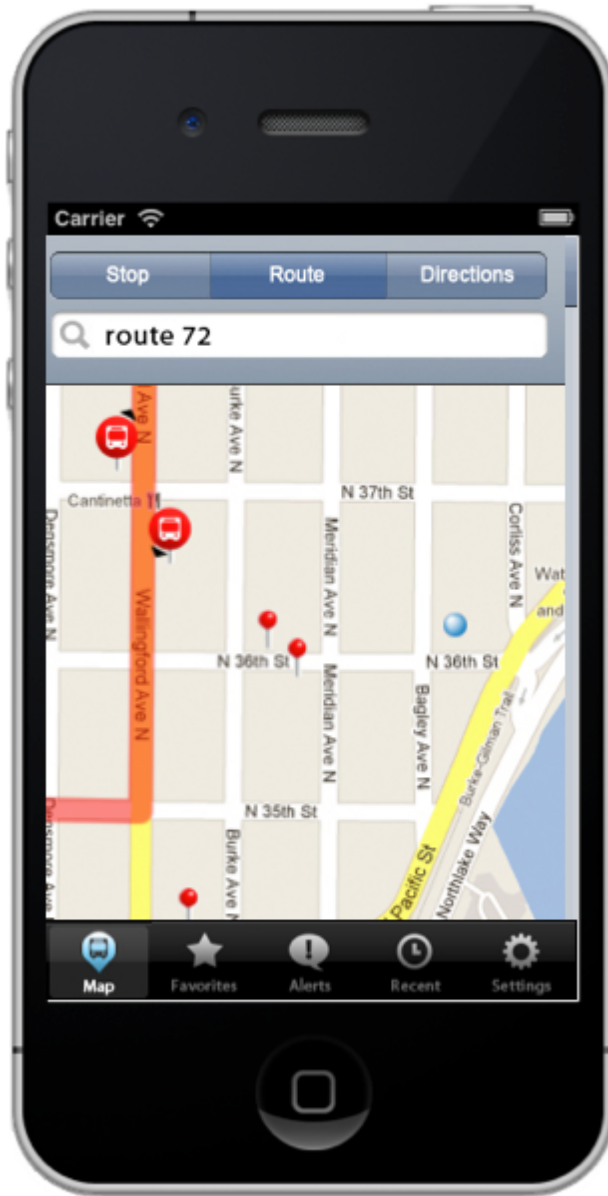
Our tasks are relatively open-ended, so to help guide users throughout tasks, portions of the prototype are unavailable. Additionally, some features are unavailable due to the fact that these restricted features are unchanged from the original OneBusAway application.

6) Prototype Screenshots (as many as needed)

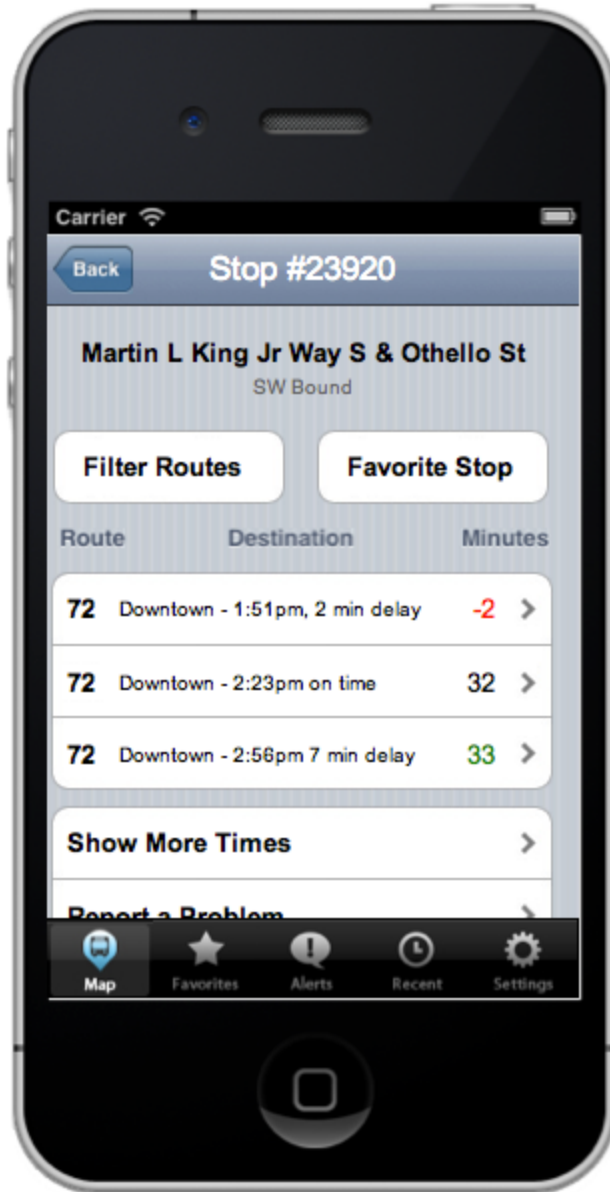
Easy Task:



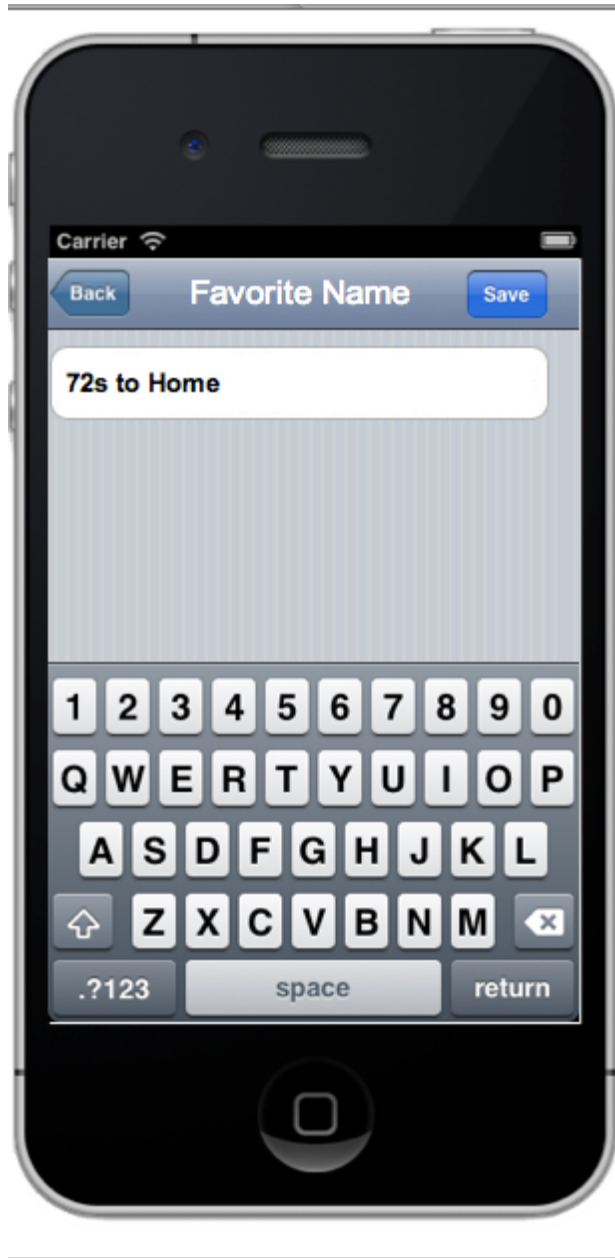
4.6.1: Open Route



4.6.2: Enter route number

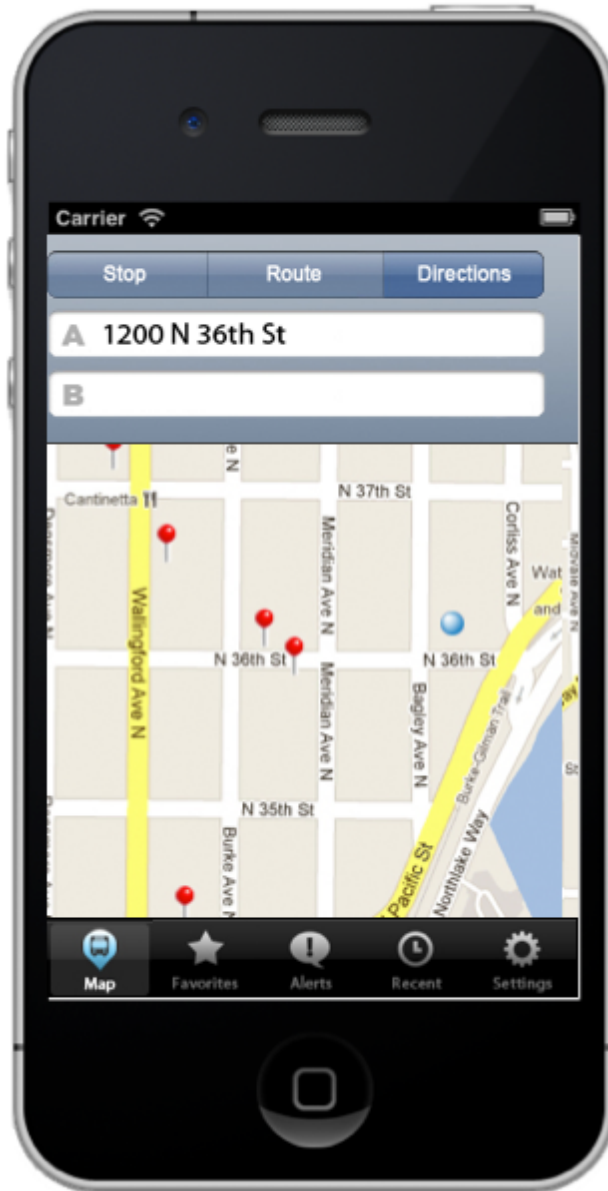


4.6.3: Select Southbound Bus stop and this screen will open up

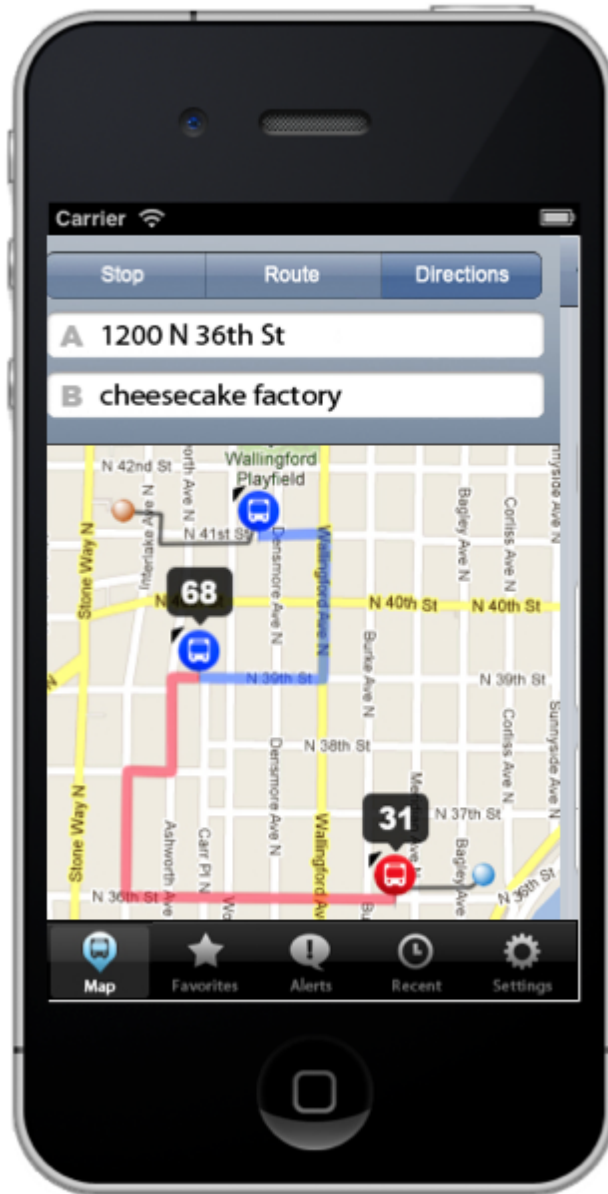


4.6.4: Favorite the stop and stop will be added to Home

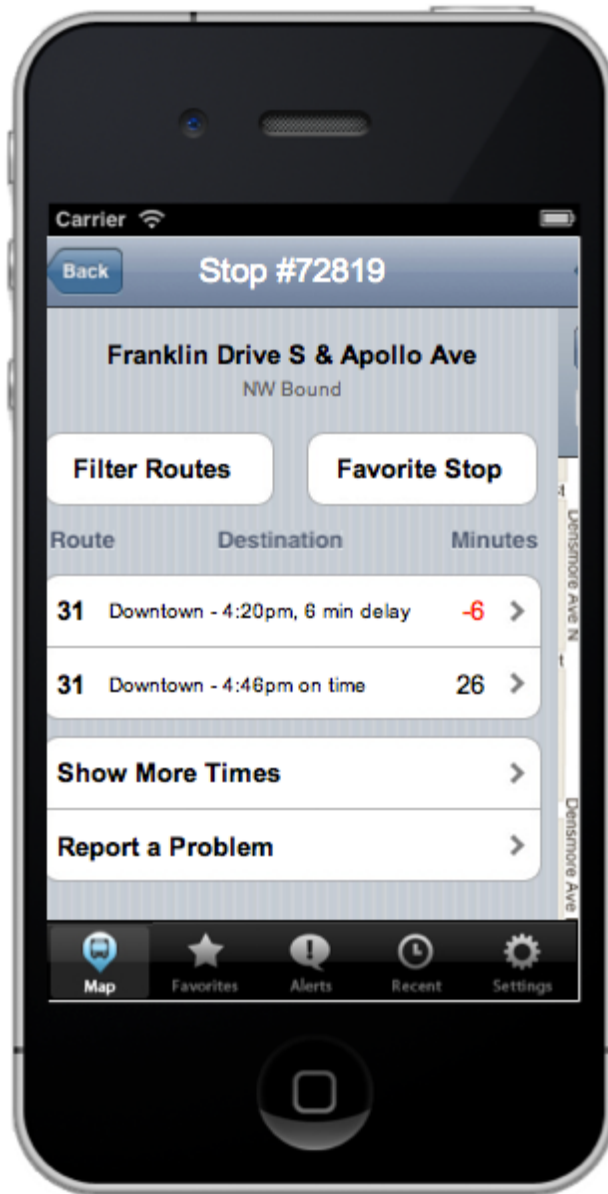
Medium Task:



4.6.5: Select 'Directions' on the map's integrated search bar (Your start place will be set to current location by default, but you can change it, if necessary)

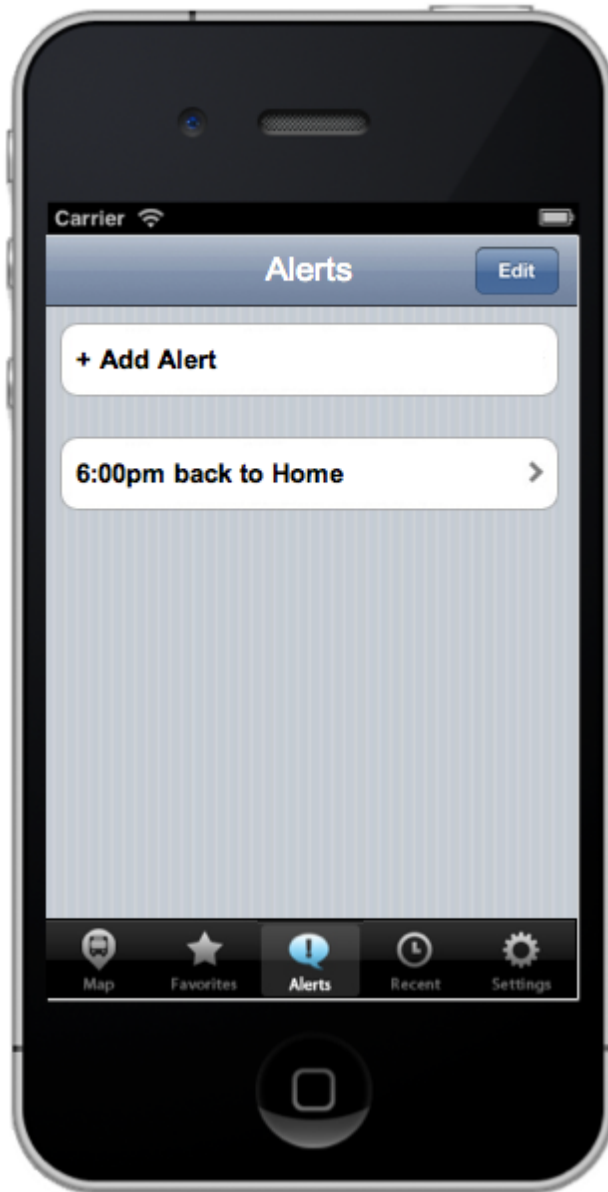


4.6.6: Add End Place

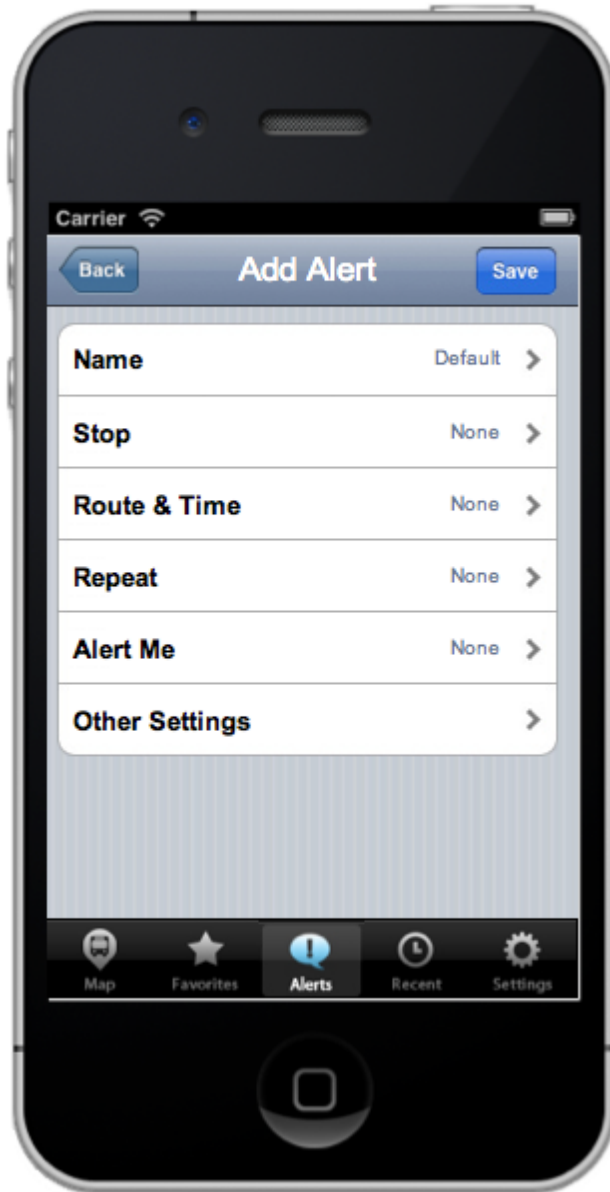


4.6.7: Select the first bus stop on your route (marked with a 31) which lists information about the earliest bus stop

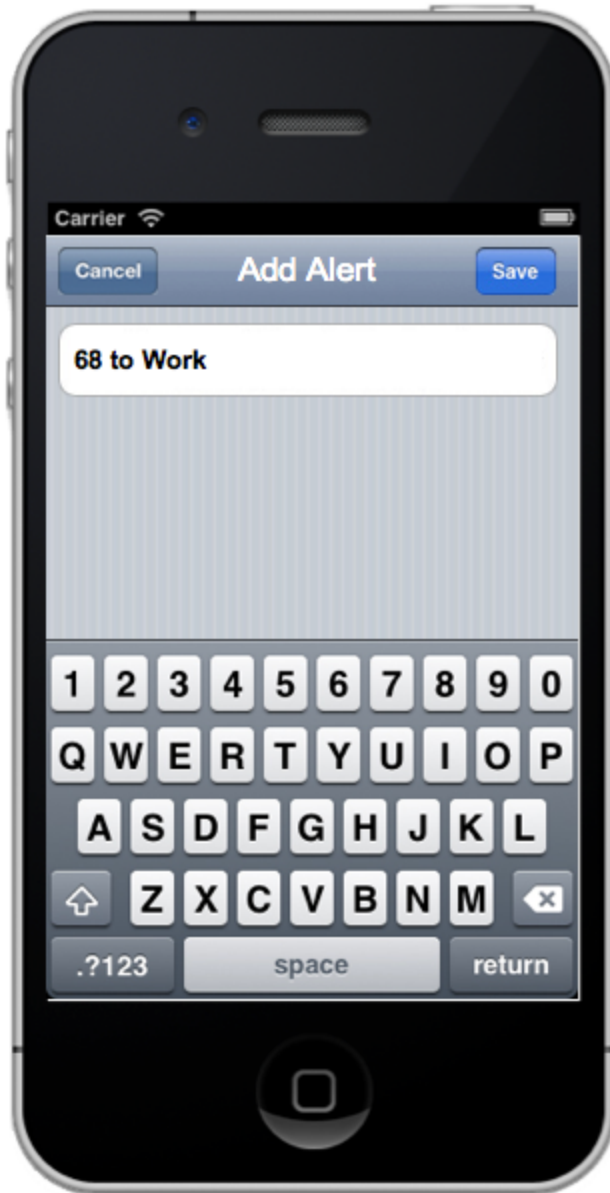
Hard Task:



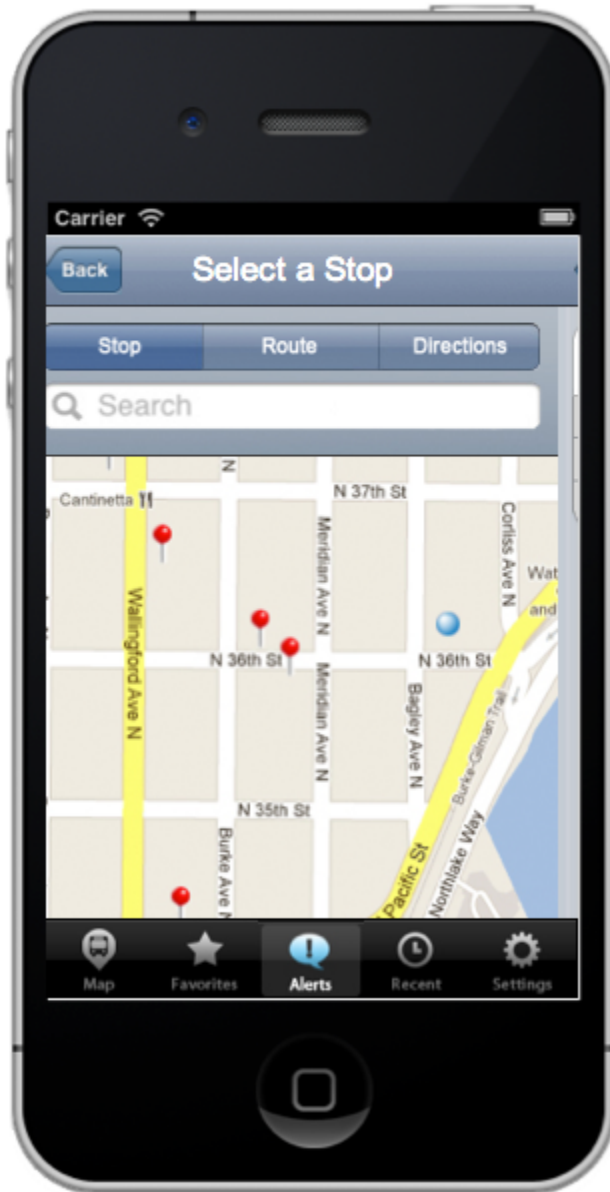
4.6.8: Select 'Alerts' on the navigation bar and press '+ Add Alert'.



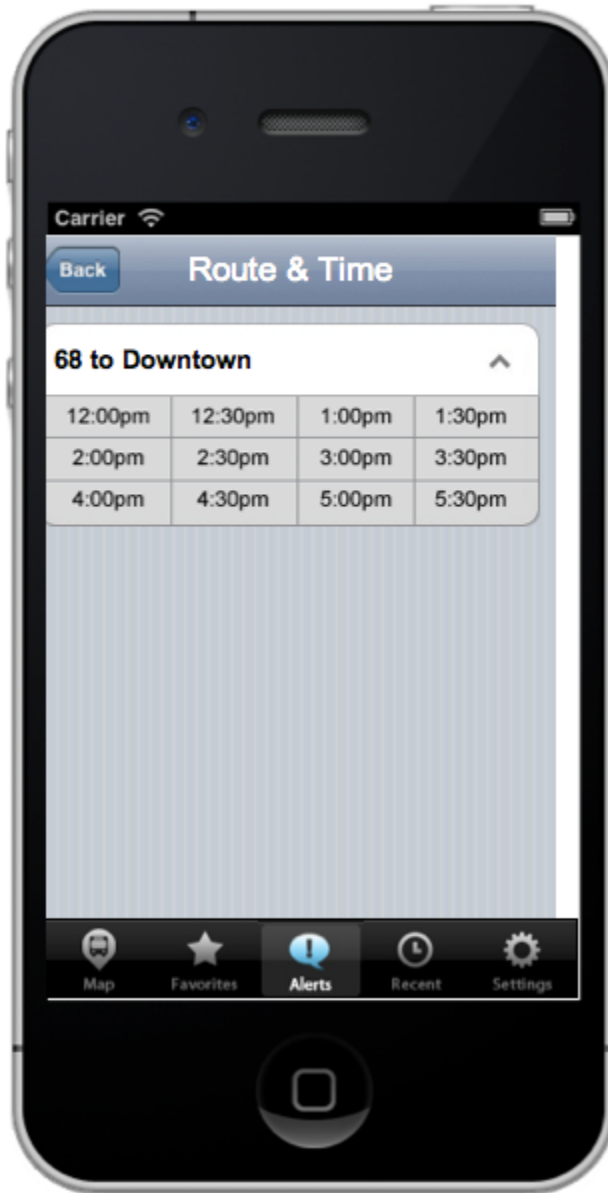
4.6.9: Displays the alert setting page



4.6.10: By default, it will set the bus route, you can make changes if required



4.6.11: Choose 'Stop' and select the closest stop to you.



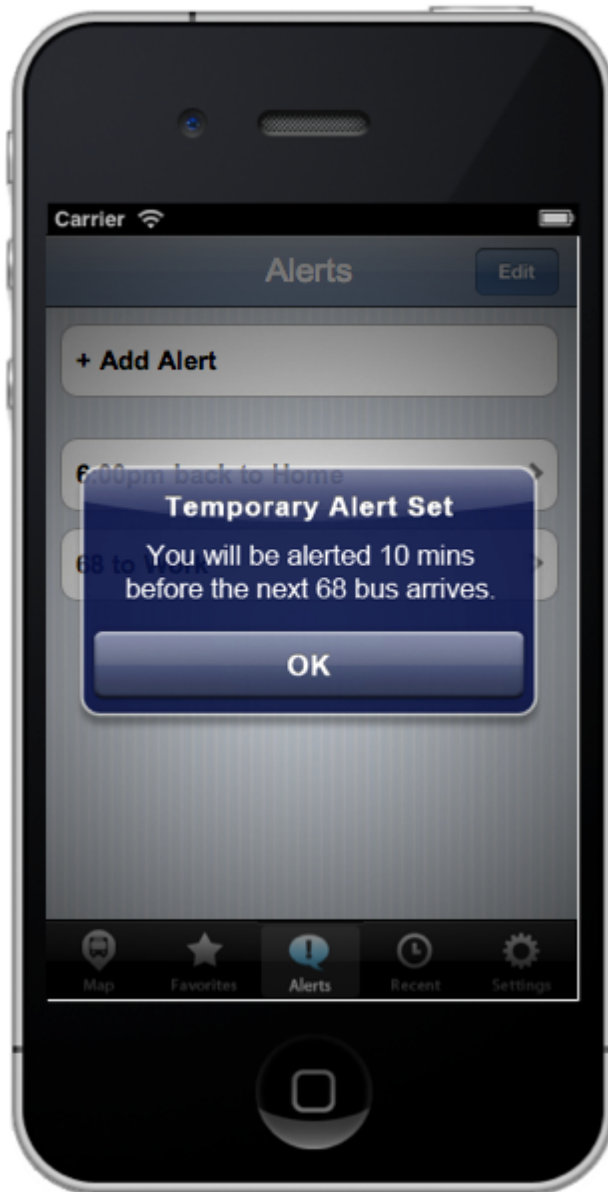
4.6.12: Next, select 'Route & Time' and select 3:30pm.



4.6.14: Your alert pops up after a while. Select 'Next Bus' if you are late



4.6.15: Press 'Set Alert' to set a temporary alert for the next bus



4.6.16: press 'OK' on the final notification.