TALKBAC

DRINK & THRIVE

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Problem and Solution Overview

There is a fine line between happily buzzed and unhappily wasted. That line is hard enough to gauge when in full possession of one's faculties, but those very faculties become impaired as the line is approached and (sometimes) crossed. Our contextual inquiry has revealed that many people rely on inherently unreliable metrics to aid that estimation, such as number of drinks or physiological responses. This can lead to excessive consumption and undesired consequences. One metric, however, is reliable but currently unavailable - the BAC. We propose to provide that data to our customers in a clear way. Hopefully that will allow for greater insight into one's drinking habits and a reduction in the aforementioned undesired consequences.

Tasks

Based on the previous results of our user testing, the tasks we have chosen seem appropriate and well focused to how users will interact with TalkBAC. In short, the tasks are to monitor current intoxication levels, review feedback from previous nights, and adjust limits for future ones. However, we noted that the nature of tasks we have chosen is cyclical rather than strictly chronological - after users adjust and set new limits, they will go out again, monitor their BAC, and upon reviewing the feedback decide to adjust their limits anew. Thus, in order to keep the tasks in line with their difficulties, we have reordered them as follows.

1. Set limits - Easy

2. Monitor intoxication and leave feedback - Medium

3. Review and analyze feedback - Hard
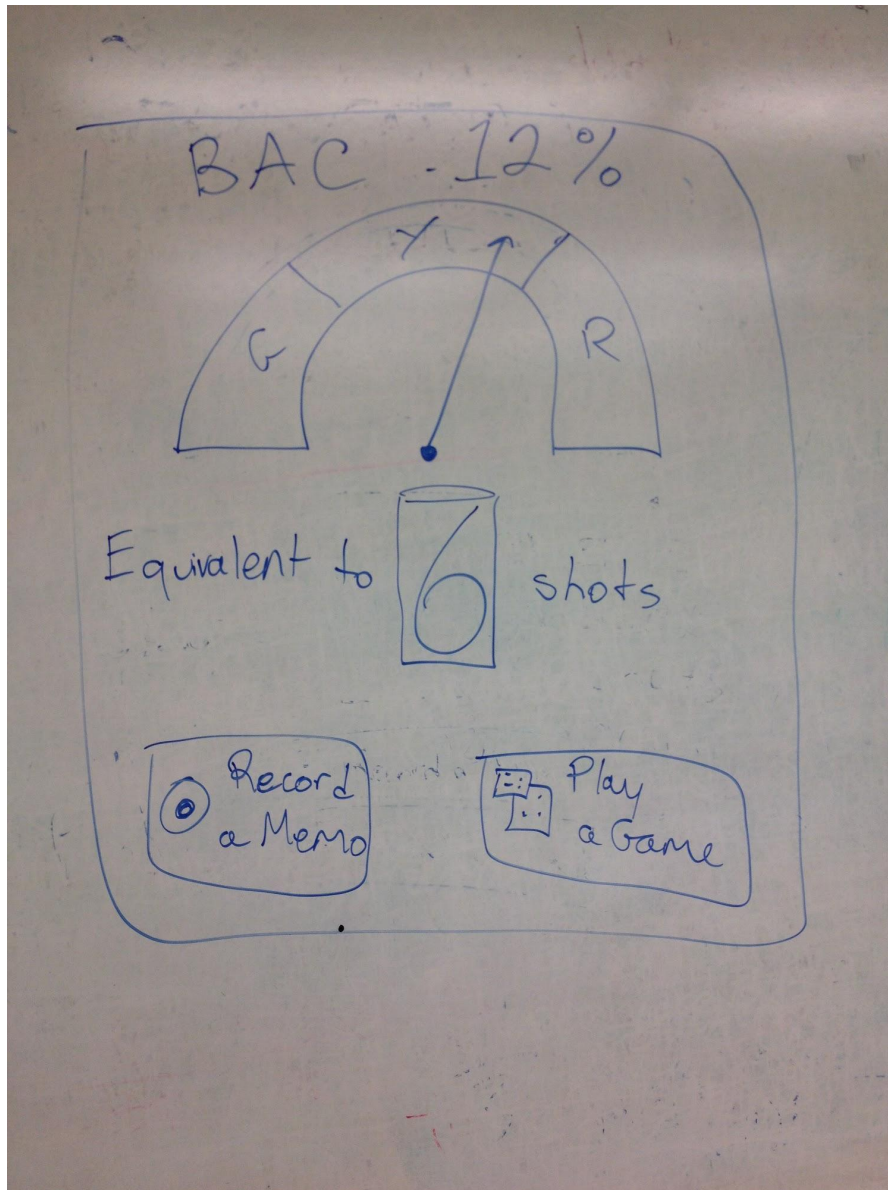
Interface Revision Sketches

Figure 1: Monitoring screen with number of drinks displayed.

Users showed some confusion, in regards to the gauge for displaying and adjusting BAC alerts we decided to consider alternatives. Noting that most people think about their drinking in terms of number of drinks rather than raw BAC, we attempted to incorporate this into the interface. However, it quickly became clear that number of drinks is much too vague, both in scope and in definition. It would risk presenting misinformation and breaking the user's trust in the application itself.
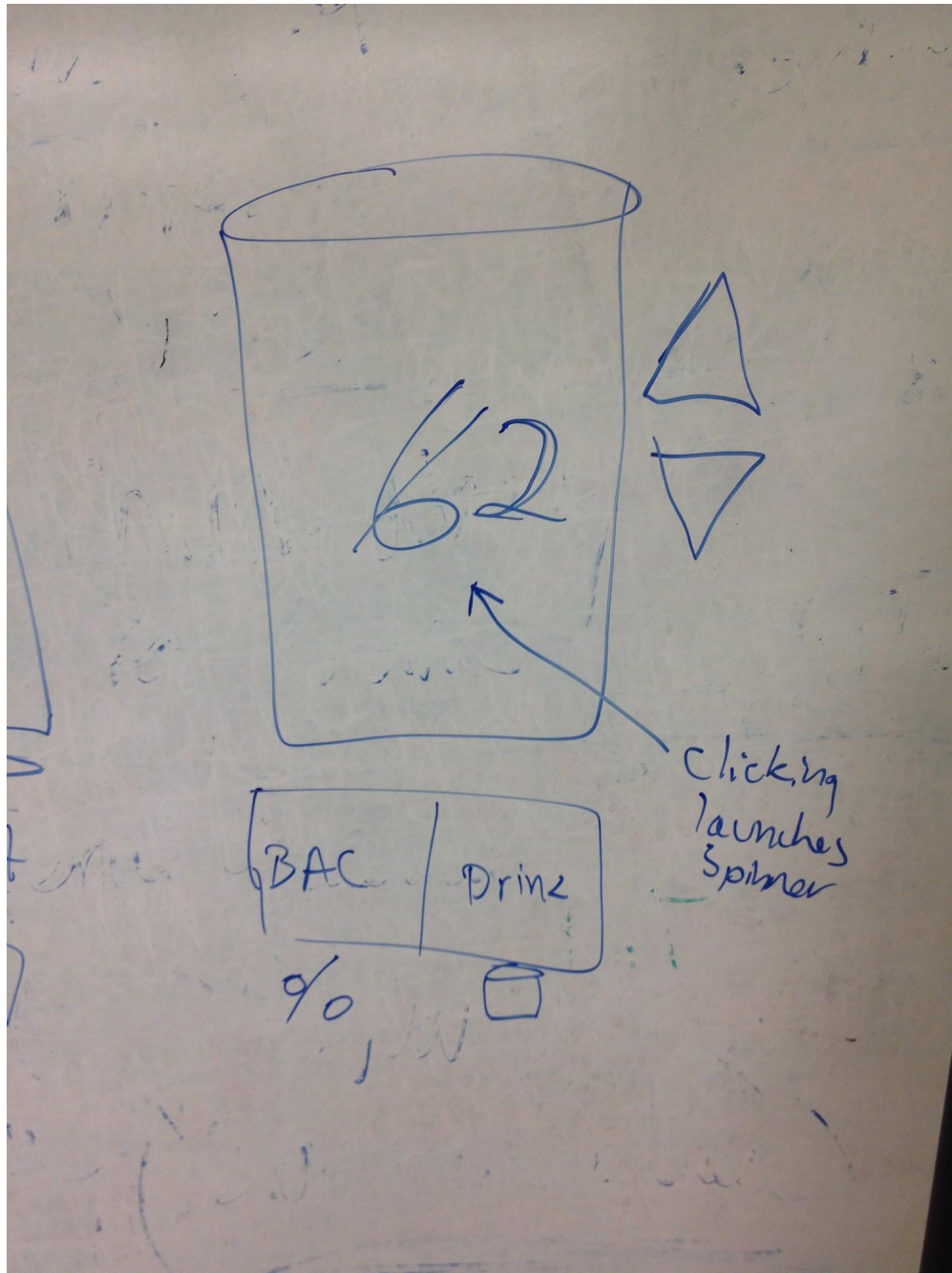
Figure 2: Adjusting limits in terms of drinks as an alternative to BAC.

Another idea discussed was the use of a cup to show the BAC level relative to a maximum limit, with the liquid inside the cup filling it as BAC climbs. Having the liquid slosh around as it fills higher could provide more visual feedback. One reason this design was not chosen was that it was untested and would have required more iteration in order to fine-tune it to user feedback. Implementing it without solid evidence was too great a risk, all things considered. However, we noticed in user testing that users did not use both limits, and chose to only adjust one. Thus, we decided that the benefit in the second limit did not outweigh the harm of the learning curve. Also, these options are not mutually exclusive - we retain the ability to introduce adjusting the second limit as an advanced feature.
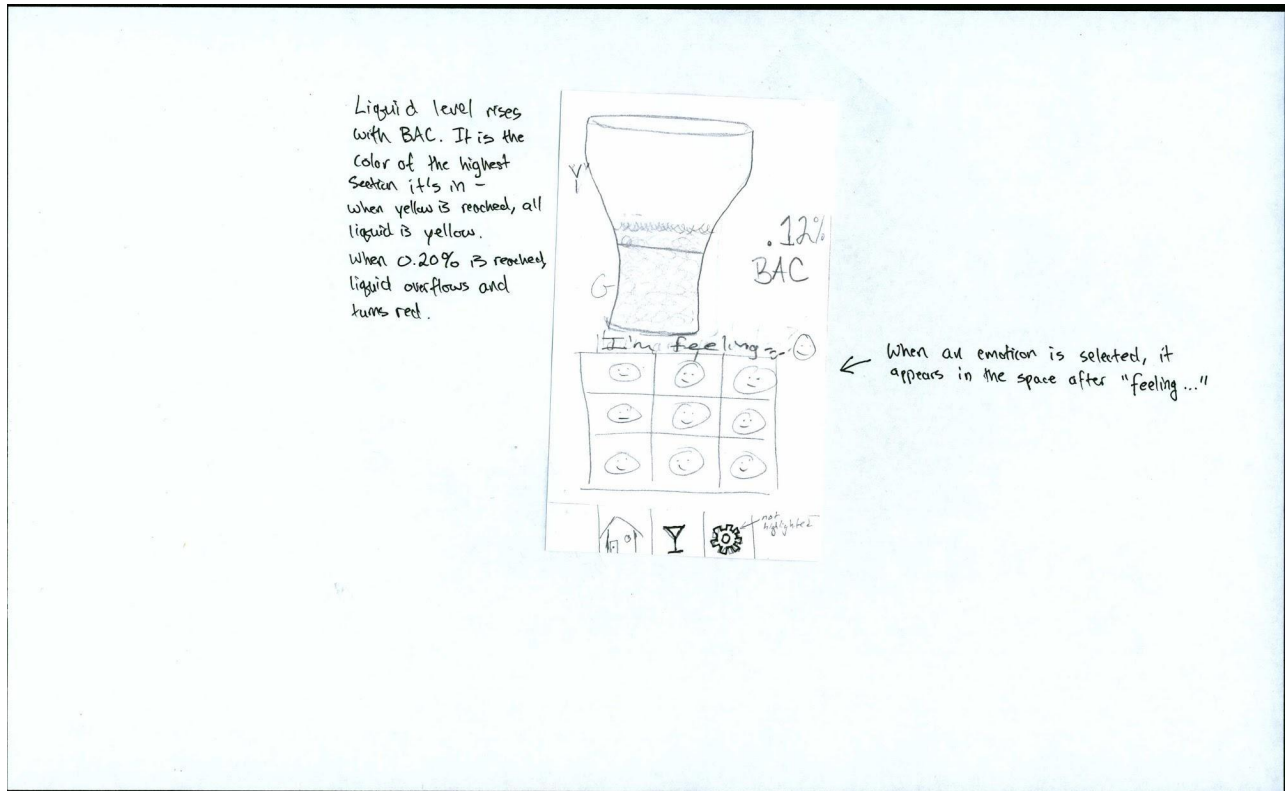
Figure 3: A new monitoring screen, with a cup to display BAC level and emoticons for the user to indicate how they are feeling.

We also discussed whether playing a game and leaving a voice memo were the features we wanted to support in terms of users leaving feedback. Having already realized that snooze and dismiss were neither consistent nor key features of the application, we wondered if we could come up with something more relevant than playing a game and leaving a voice memo. One idea we came up with and liked was for users to be able to leave themselves emoticons to represent how they are feeling throughout the night. Sketched below, the application presents a 3x3 grid of user-selected favorites. We picked this feature over the game and voice memo for a few key reasons. First, the game was too interruptive in the user's context - we did not believe that users would really want to be torn away from their evening activities even for the 5-10 seconds required to play the game. Further, we noted that voice memo would be equally disruptive and possibly confusing - after all, we can expect users to be in a loud environment, and in social situations it did not make sense for people to start talking into their phones and saying things like "I'm so drunk!" In the end, this form of feedback is quick, concise, and personalized. It also displays very easily on a graph in the next task, as opposed to the game and voice memo, which only served to confuse and distract users. [See Figure 3]

Still, we sought to improve upon our original gauge design. After a few brainstormed sketches, we realized we could improve the readability and understandability by extending it to a full 180 degrees, instead of constraining ourselves to the smaller arc we had used previously.
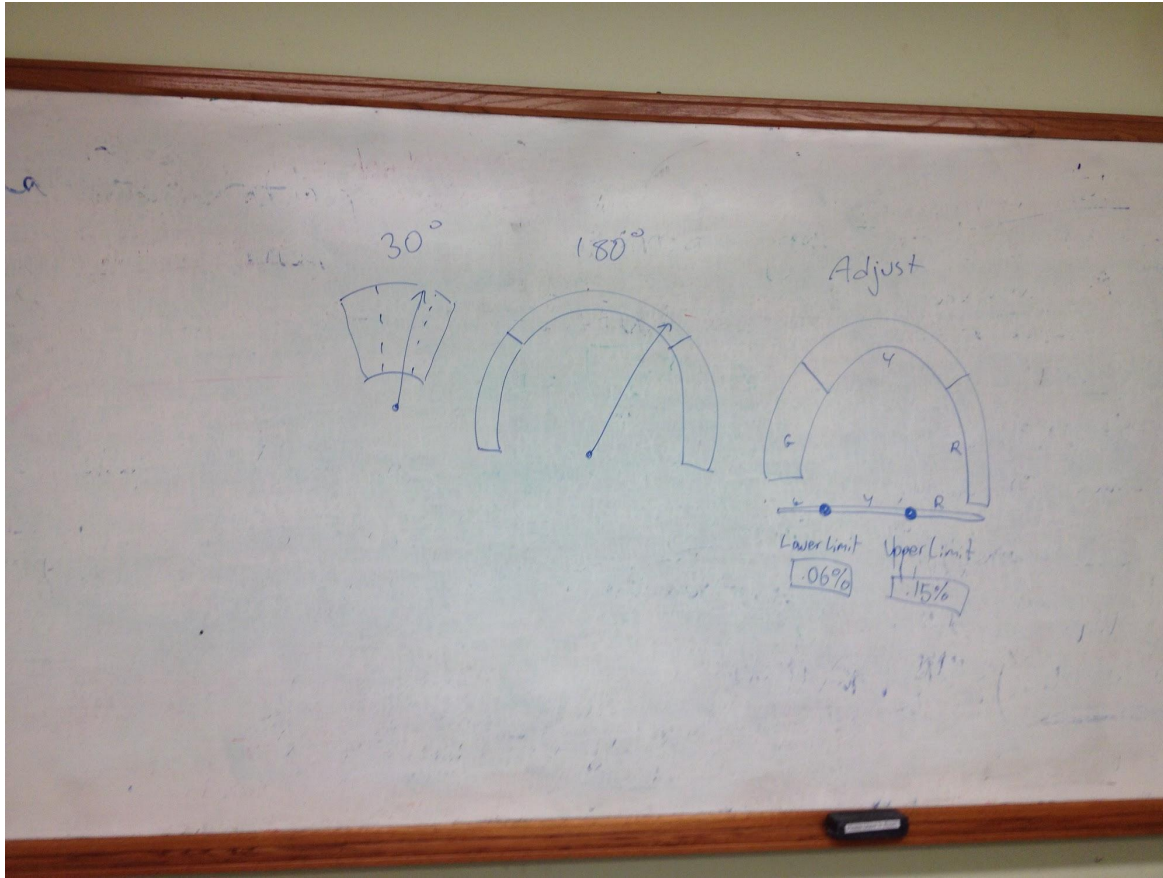
Figure 4: Changing the gauge from a small arc to 180 degrees for clarity.

Another form of feedback we discussed was social media - specifically, pictures. Rather than a voice memo, users could leave a picture or "selfie" to show what was happening or how they were feeling. This idea was not incorporated into the interactive prototype. As it stands, people already have social media applications like Facebook and Instagram that they use for that function - it would be a bad idea for us to try and replace them. Instead, we opted to have the application, with the user's permission, integrate the posts they make to other social networking websites into the feedback display. This gives us the "best of both worlds" - since the application is passively scraping in the social media, users do not have to engage in any special interaction with TalkBAC. They will be able to focus on doing what they normally do, and still be able to review their posts on the graph later.
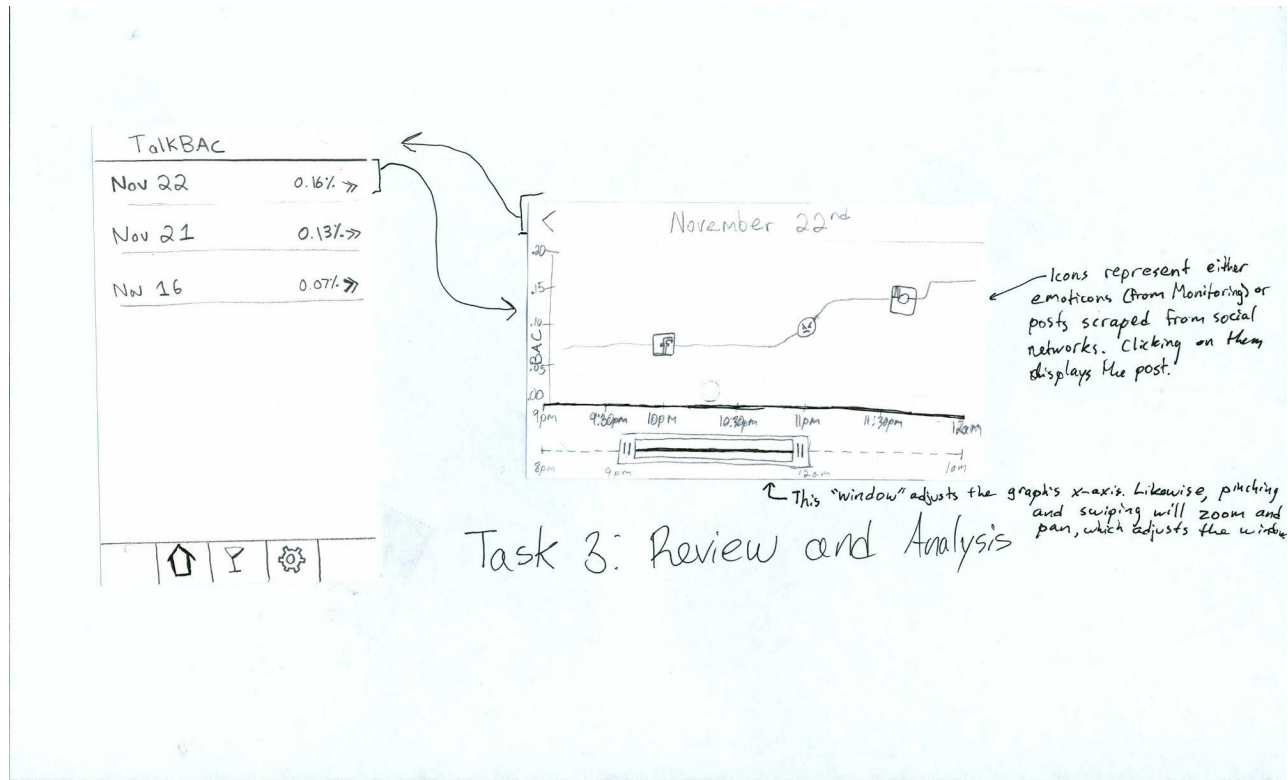
Figure 5: A new review screen with social media integration (and emoticons).

Also present on Figure 5 is the idea of a sliding window at the bottom, which changes and displays the scale of the graph as the user drags it, or pinches the graph itself. Since the review screen is information visualization we brainstormed some ideas for "Zoom and Filter" and "Details on Demand". The latter is implemented with the social network icons. For example, if during the course of my evening I post a status update to Facebook then there will be a Facebook icon on the graph for review. Clicking on the icon exposes the underlying "data point", namely the text. For "Zoom and Filter" we considered a sliding window. This interaction paradigm was inspired by video editing interfaces that use a sliding window. In the sketch above you can see the overview axis that encompasses the whole evening. Above it is the specific axis showing only the time the user is focusing on. By pinching and swiping the user can zoom and pan, which in turn adjusts the window and the visible portion on the specific axis. This interaction is very complicated and we didn't feel that we would be able to design and test it in the time we had, but it is a promising avenue for future iteration.

With these new and changing features of the application there also came the need for a revamped Settings screen. The first hurdle to jump was the cramping of the screen with all of the new options: in addition to adjusting limits, users needed to choose a cup for monitoring display, select their favorite emotions, and authorize social networks. A scrolling settings screen was considered, but ultimately rejected because it would always mean some settings might go unnoticed if the user never scrolls. Instead, we decided to make efficient use of the available real estate by splitting the settings into a number of component screens. This also gave us more room to explain the purpose of each setting.
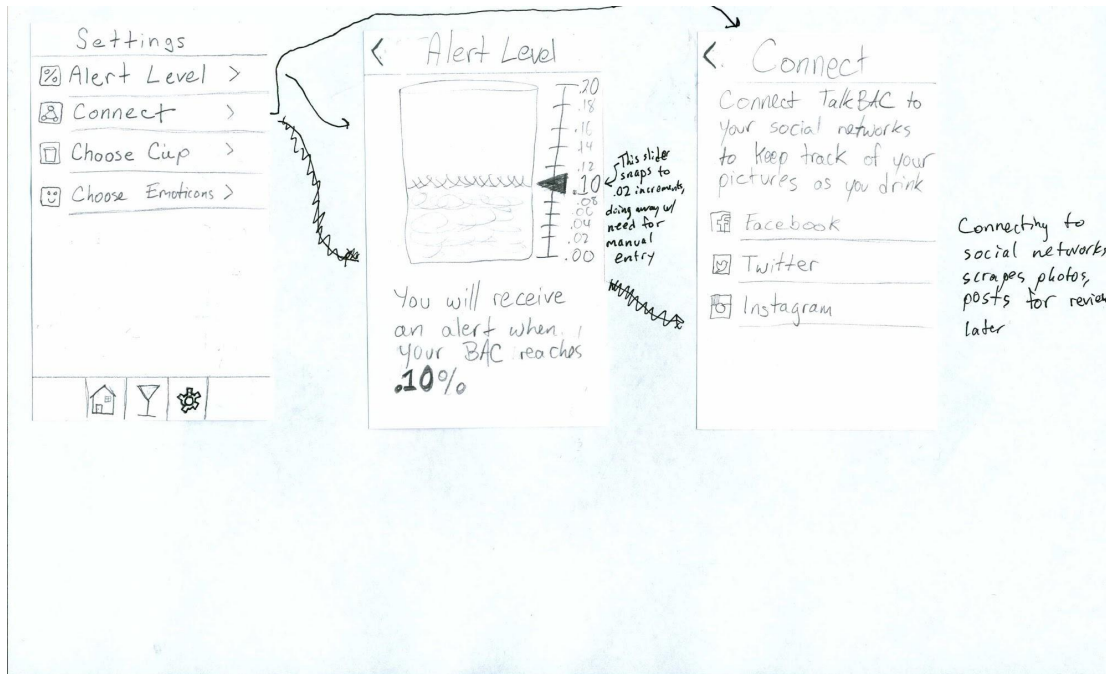
[Images of Settings scans]

Figure 6: (From left to right) Settings screen, Alert level selection, Connection of social media.
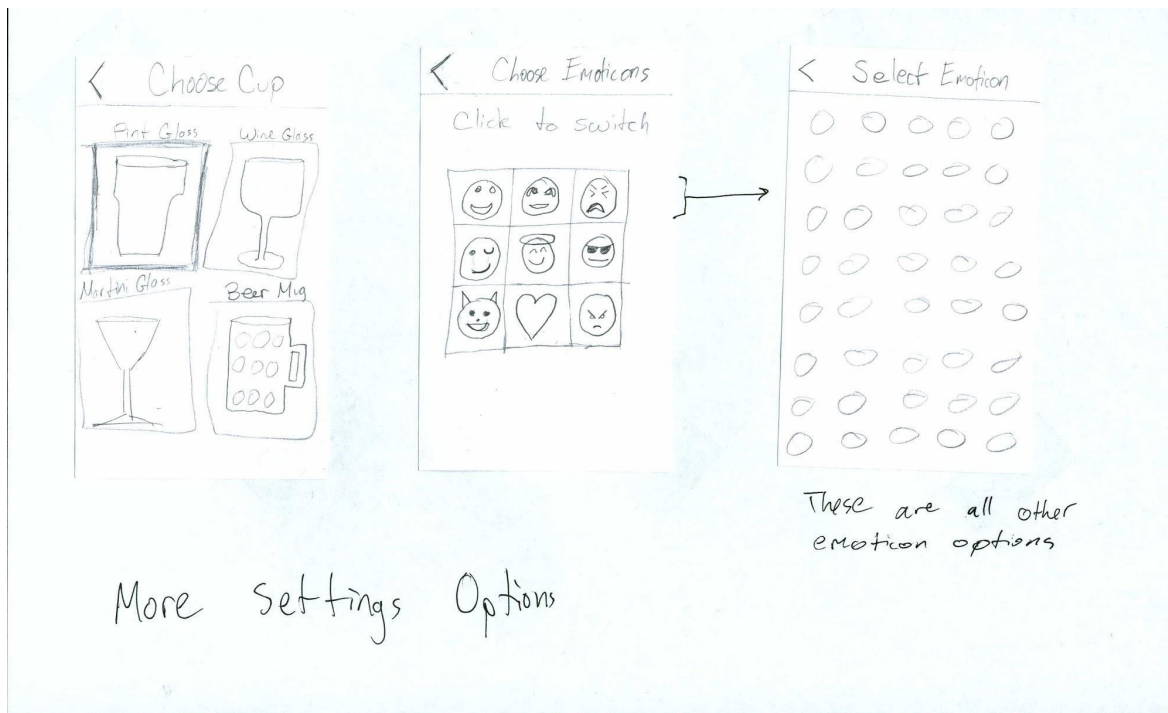

Figure 7: (From left to right) Choosing a cup for the app to use, selecting 9 favorite emoticons using the full list.

This design carried over into the interactive prototype because it streamlined the user's interaction while preserving the necessary functionality for both average and power users.

Prototype Overview

Overview of implementation

Our prototype is composed of six screens, two for each task. In figures 8a and 8b, you can see the Settings and Alert Level screens. These are used for setting limits. Figures 9a and 9b show the Alert and Monitoring screen. When the user is out drinking, crossing their limit will trigger the Alert on their lock screen. Unlocking the phone takes them to the Monitoring screen, which has more detail. To review past drinking activity, the user goes to the Home screen (figure 10a) and chooses a specific date to investigate (figure 10b).

Scenarios for 3 tasks

Task 1. Set Alert

The Alert Level within the Settings page is where the user chooses to change their BAC limit so that TalkBAC can alert them
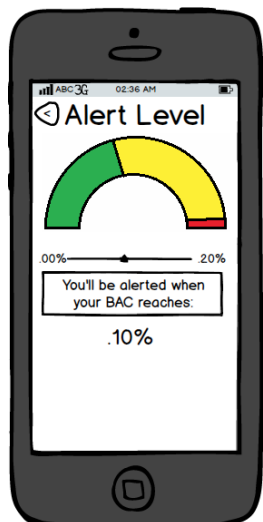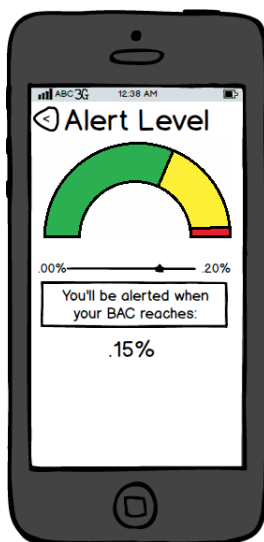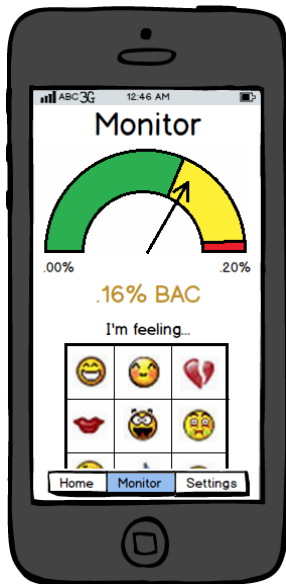

This is where the user chooses when TalkBAC alerts them. User can move the slider to adjust the BAC

Task 2. Monitor Intoxication
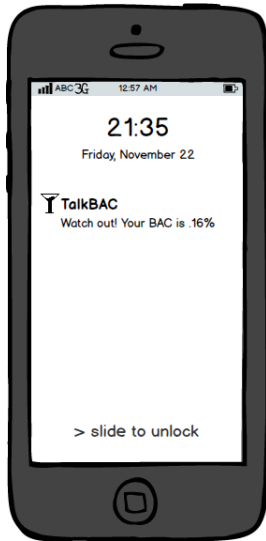
The application alerts the user, it just looks as though they received a text message. Only the user knows its TalkBAC. Sliding "slide to unlock" launches the application


When the user swipes to unlock the phone and see more detail, it brings them to this monitoring screen. The gauge clearly indicates their current intoxication level and how that compares to their established limit.

Task 3. Review and Analyze Feedback
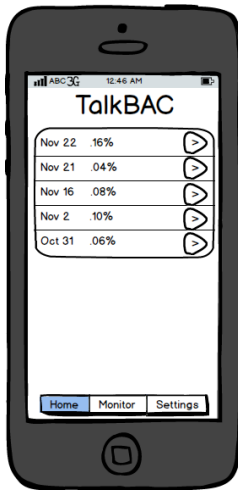
When the user isn't drinking, they will first be presented with this screen. From here, they can browse earlier drinking activities in greater detail.
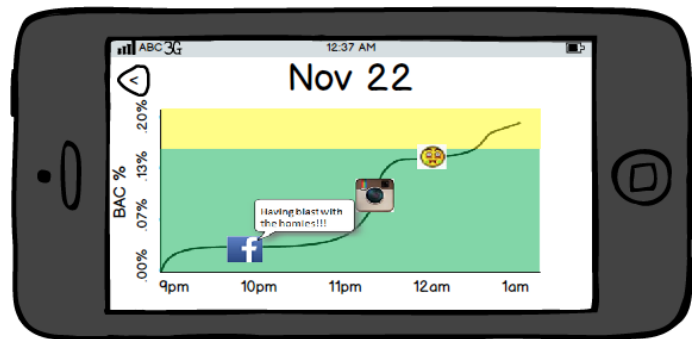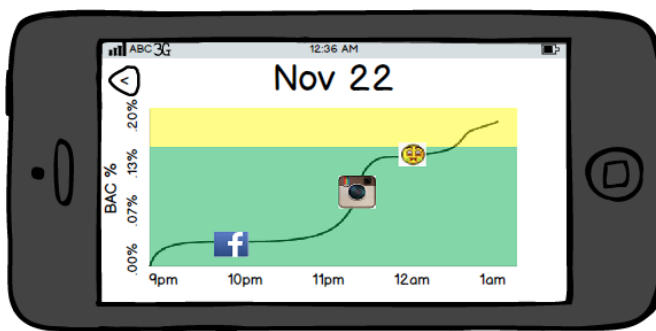
This graph presents the user with an opportunity to gain further insight into their drinking habits. Color-coding of the regions matches the user's chosen BAC limits. Along the line, specific moments are captured in corresponding icons. Clicking on the Facebook icon to see what the user posted at that specific time.

Description of tools used

To make the interactive prototype we used Balsamiq. Balsamiq has a number of iPhone specific widgets that we used to rapidly assemble the various screens. Certain custom controls, like the gauge and chart, were drawn up in Paint. To link the screens together, we used image mapping and got the coordinates from the image-maps.com tool.

How the Tools Helped

The widgets provided by Balsamiq got us 40% of the way there right off the bat. And it easily let us exports to static images. Image mapping also made moving between screens very easy.

How the Tools Did Not Help

Paint is incredibly limited. We would have been better off using something like Gimp for creating the gauge and chart. As easy as image mapping was, it's dependent on absolute positioning so it's not flexible if images need to be resized.

What was left out of the prototype and why

Sketches of Unimplemented Interface Portions

- Leaving feedback via emoticon. In the monitoring screen (figure 9b) we showed the top of the 3x3 emoticon grid and in the review screen (figure 10b) an emoticon is visible on the chart. However, the prototype doesn't actually implement using the grid or choosing alternate emoticons from the settings screen (figure 8a). These didn't seem essential to the task and are straightforward enough to imagine so we left them out.
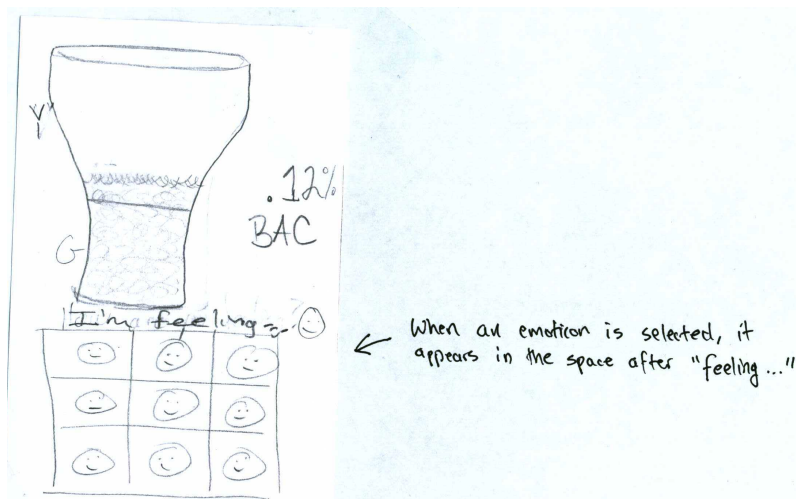
- Connecting to social networks from the settings screen. This is a common and familiar feature from many other apps so we left it out of the prototype.

- Pinching/swiping on the Review screen. This would also have added a second x-axis: one for the entirety of the evening and one for a specific window. Zooming and panning would have been enabled via familiar gestures. This is an implementation of the information visualization paradigm "Zoom and Filter". We came up with this idea to late to test it on users and implement it in the prototype.
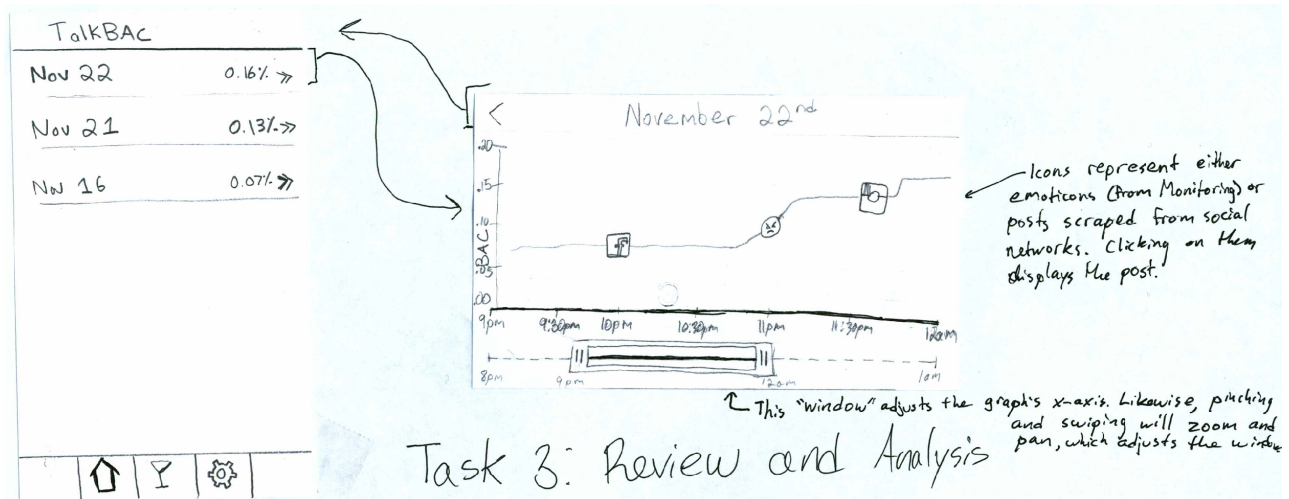
Wizard of Oz Techniques Required to Use Prototype

Our interactive prototype only supports the three primary tasks mentioned above, which means that some of the functionality uses the Wizard of Oz technique. Some of the functionality that are not implemented are:

- Connect and Emoticons on the Settings page
- Picking the Emoticon from the grid in the Monitor page
- Dynamically changing the level of BAC

Prototype Screenshots

Figure 8a,8b: Screenshots for Task 1 - setting limits. L to R - Settings Screen and Alert Settings Screen.
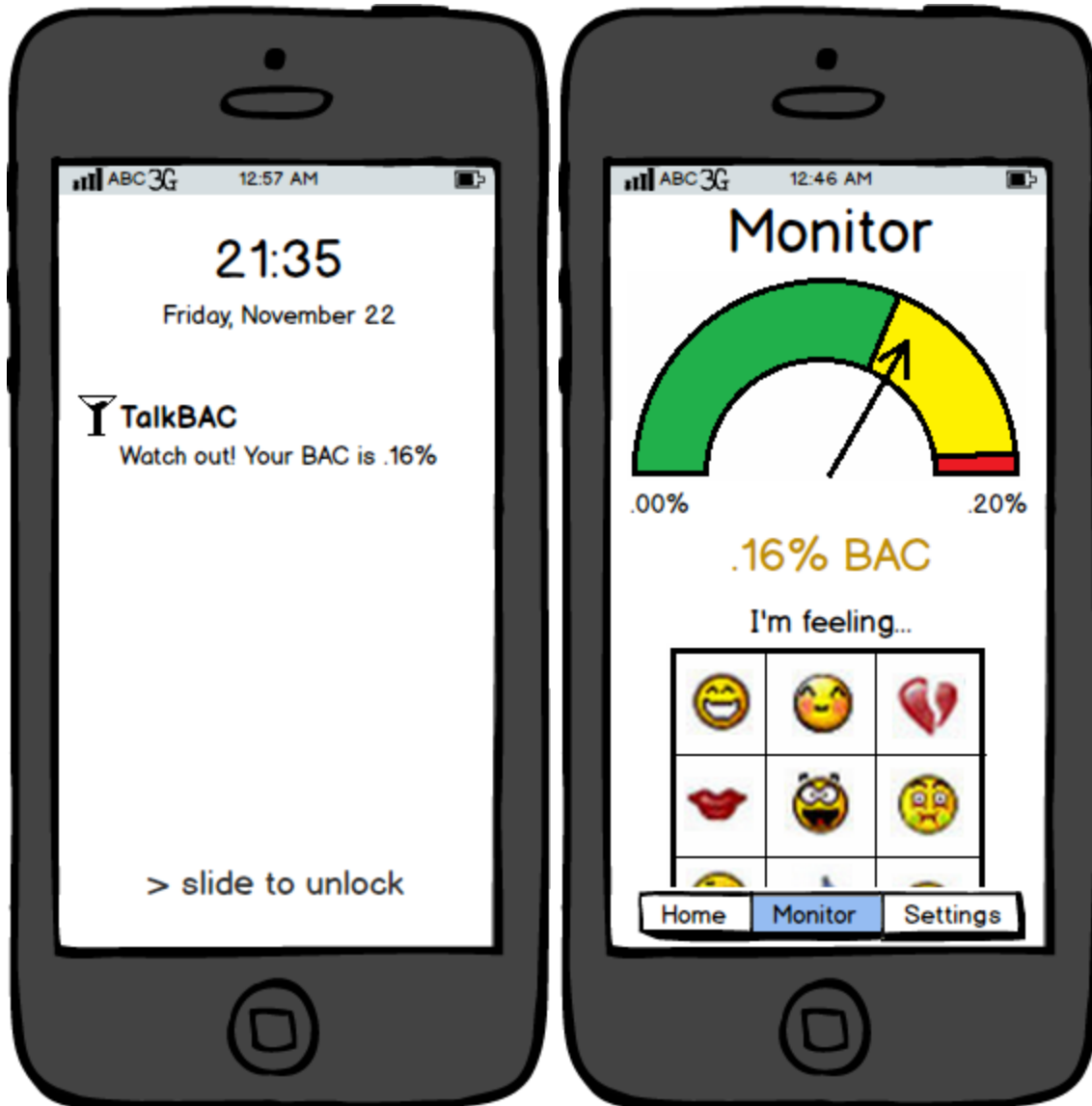
Figure 9a,9b: Screenshots for Task 2 - monitoring intoxication. L to R - Alert Screen and Monitoring Screen
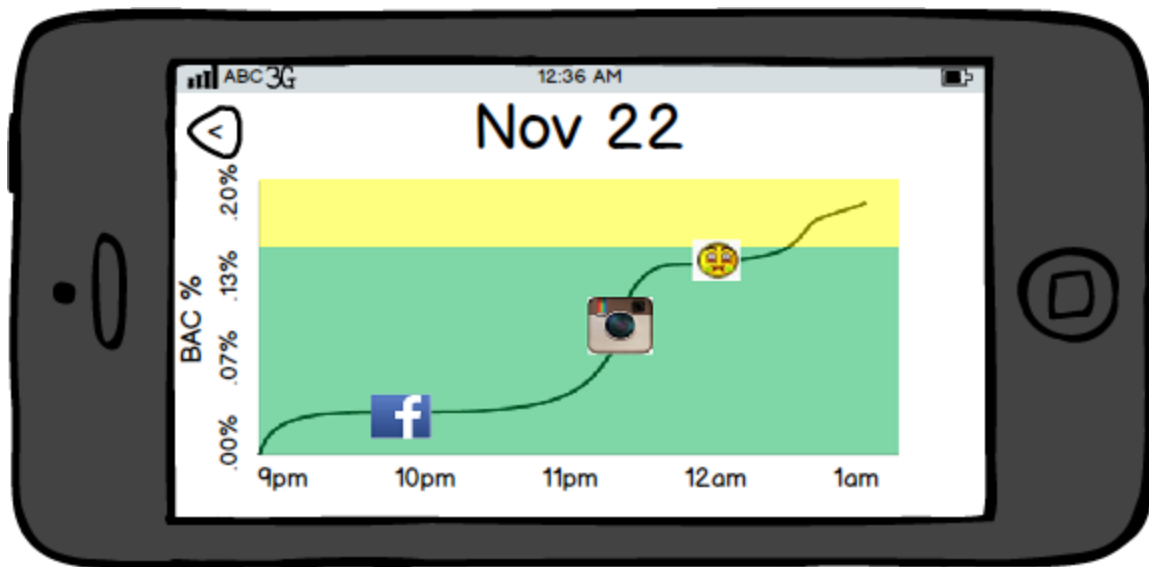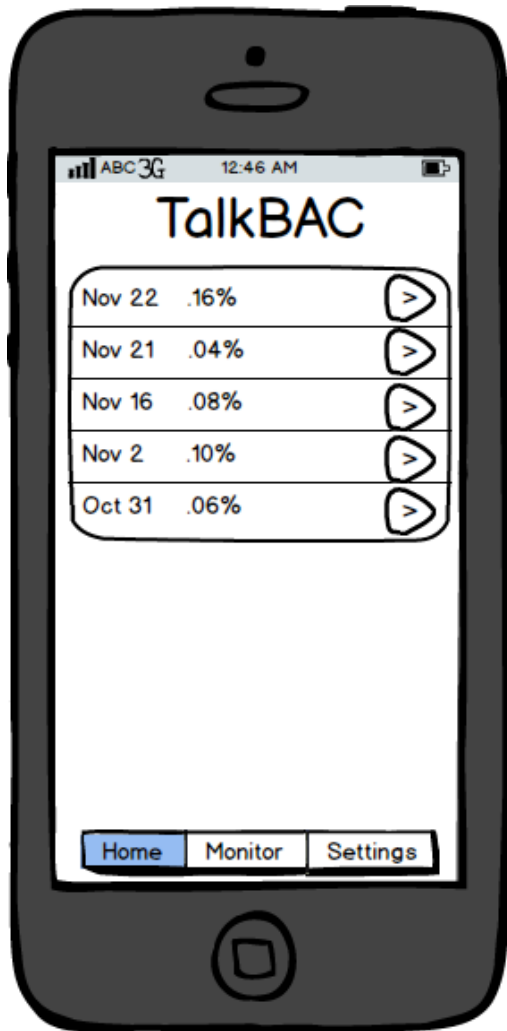
Figure 10a,10b: Screenshots for Task 3 - reviewing drinking activity. T to B: Home Screen and Review Screen.