

# TalkBAC

DRINK & THRIVE

## Team and Roles

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Aasav – Documentation

Anna Marie – Testing

Max – Group Manager

Mihir – Design

## Problem and Solution Overview

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Seven thousand years ago, in the depths of antiquity, the Egyptians invented beer. People have been getting drunk ever since. The line between alcohol as social lubricant and alcohol as traitorous toxin is often obscured. When that line is crossed, the consequences can be mild, such as a little belligerence or tomorrow's hangover. Or it could be more severe – blacking out or throwing up. As you approach that line, the effects of alcohol make it harder to see, which is why people cross it unintentionally so often. After a few drinks it becomes a little harder to objectively self-assess. Our proposed solution is to give our customers the ability to see their BAC and set personal limits.

## Answers to Task Analysis Questions

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### 1. Who is going to use the system?

The system will be used by people who drink, suffer the consequences of drinking, and have a desire to control how much they drink.

### 2. What tasks do they now perform?

Three primary tasks were identified through the course of our contextual inquiry studies. First, users attempt to self-monitor their activities, causing them to arbitrarily decide when they are done drinking. Currently, they must guess.

Second, users have to do a certain amount of planning in their course of festivities – in particular, an idea of how much they intend to drink will decide whether they are driving or not. Not only does this reinforce the desire to know their current level of intoxication, but it also results in a need to set goals or limits in advance of an activity.

Finally, there is generally some period of reflection and self-assessment of how events transpired the night before and how things might be done differently the next time. The performance and results of these tasks are also key parts of the planning process.

The relatedness of these tasks thus provides both a clear breakdown for the level of complexity of tasks from simple to moderate to complex, and a natural workflow for a user to perform and transition between tasks in intuitive ways. Users start by monitoring their BAC in the moment, reflect on their activities afterward, and use this data to create a plan for the next one.

### 3. What tasks are desired?

Most prominently, users would like to remove the guesswork from their monitoring and reflective tasks. The tasks are further complicated by the effects of alcohol – as you drink, the worse your guesses become, and this interaction can often have dire consequences.

### 4. How are the tasks learned?

Users would learn by first having a drink and then checking their phones to see the app's interface displaying their current BAC and an option to unlock the phone to get to the app directly.

When not involved in an activity, a user will launch the application normally and be greeted by a list of their previous nights. Simply selecting one will allow them to see a graph and reflect on the entirety of the activity.

Lastly, the planning task as facilitated by the application must be learned through discovery of the settings or planning screen, which is prominently linked on the initial screen.

### 5. Where are the tasks performed?

Tasks are performed in various drinking scenarios including but not limited to: bars, parties, tailgates, balls, at home, en-route, and the morning after.

### 6. What's the relationship between customer & data?

All data collected belongs to users and they would have full control and ownership of their individual data. There is a possibility that the data could be shareable but users would have full control over sharing situations.

## 7. What other tools does the customer have?

Target users of this application have smart phones for planning.

There is a possibility that breathalyzers could be used in conjunction with the application.

Users also possess their own judgment.

## 8. How do customers communicate with each other?

There is a possibility that the data could be shareable but the customer would have full control over sharing situations.

## 9. How often are the tasks performed?

Monitoring via the app would be continuous per activity; Planning and reflecting would be done once per activity, with an activity being defined as one night of drinking.

## 10. What are the time constraints on the tasks?

Planning needs to take place before the activity but not after.

Reflection would take place after the activity.

Monitoring must be quick and convenient- about as fast as checking your phone.

The time it takes to monitor must be less time that it takes to use a breathalyzer.

## 11. What happens when things go wrong?

If the user fails to perform a task, the user does not get any benefit and it would be the same as if the user didn't have the app. However, Bad suggestions and bad monitoring could misinform users, and such misinformation could be potentially dangerous.

## Task Overview

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### *Monitoring Intoxication*

Our protagonist, Jeff Winger, is attending a house party for his friend's birthday. He missed dinner so the drink is hitting him a little harder than he's used to. After his third beer, he's not sure if he's crossed the border from tipsy to drunk. Before he decides to have another drink he needs to assess his current state. It's important to Jeff that he doesn't embarrass himself by sharing stories better left unsaid. And the last thing he wants is a hangover in the morning.

This is a simple task. There's a natural breakdown between the input – inebriation – and output – the decision to continue or stop drinking. Currently, Jeff would try to judge his intoxication by keeping track of the number of drinks imbibed, considering his physical

state (Is he swaying? Slurring?), and getting feedback from friends (requested or not). However, his appraisal is hampered by his impaired judgment. Our app would provide more accurate data, including an accurate number of drinks, BAC level, and some measure of coordination (for example, how level can you hold your phone?). The decision would still be Jeff's to make, but at least he'll have better information and a reminder of the limit he decided on when sober.

### *Seeing What One Did Last Night*

Since he didn't have our app, Jeff miscalculated and overindulged. The next morning he is suffering from a pounding hangover and he realizes there are a few blanks in his memory. For instance, how did he get home last night? How many drinks did he have? Did he annoy his friends? It all seems to be a bit of a blur. He calls his friend, Britta, to fill in the gaps. For the next half hour, Britta regales Jeff with tales of his adventures, including the fight he started with a stranger over a game of ping-pong. Filled with discomfort emotional and physical, Jeff goes back to bed to sleep it off.

Reviewing one's activity from the night before is a moderately difficult task. You don't need to black out like Jeff in order to forget exactly how much you consumed. Even if you remember how much you had, it can be difficult to correlate that with the effects because more variables enter the mix. How long was Jeff drinking for? What kind of drinks was he having? He missed dinner, but did he have a midnight snack? All these data points influenced his condition and it can be difficult to keep track. Through the magic of personal informatics he could see a visualization of his intake and how it affected his BAC.

### *Planning Limits For Next Time*

Jeff isn't enjoying his hangover and he'd like to avoid it next time. Without any kind of data to go off of, this decision is hard to execute. He could decide on a drink limit or he could ask Britta to babysit him. The former doesn't take into account the aforementioned variables (elapsed time, food, type of drink) and the latter is an imposition on a friend. Moreover, in the time between making his decision and his next excursion the memory of his hangover will inevitably lose some of its influence. And once he starts drinking, his judgment will again be impaired. Without an aid, planning his intake is tricky, which is why Jeff will have another hangover in two weeks.

Trying to plan a drink cut-off ahead of time is a complex task. An effective assistant would need to do three things. First, show the customer their past activity as a predictor for the future. This is equivalent to the moderate task from before. Second, based on the insight gleaned from reflection the assistant needs to provide the user with a system for setting one or more limits. Most importantly, it would then alert the user as they approach their limit.

# Storyboards

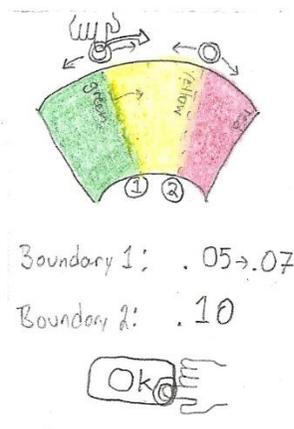
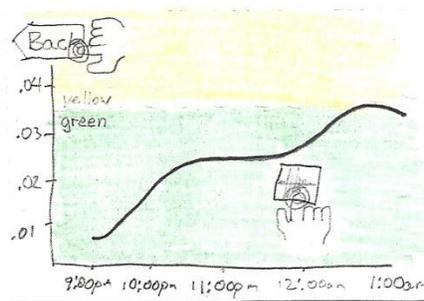
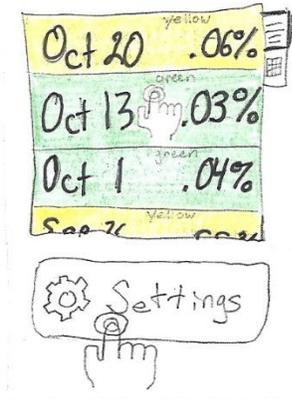
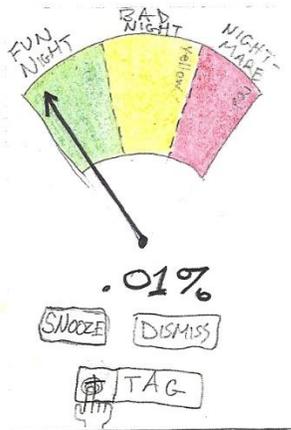
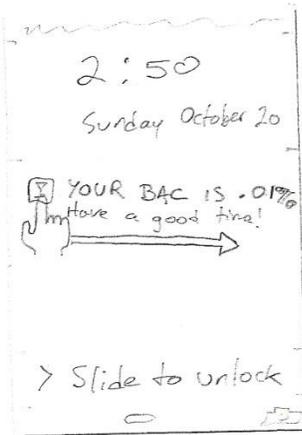


Figure 1: Lock screen interface; Dial indicator; Initial screen for app; Graph view for specific date; Settings interface

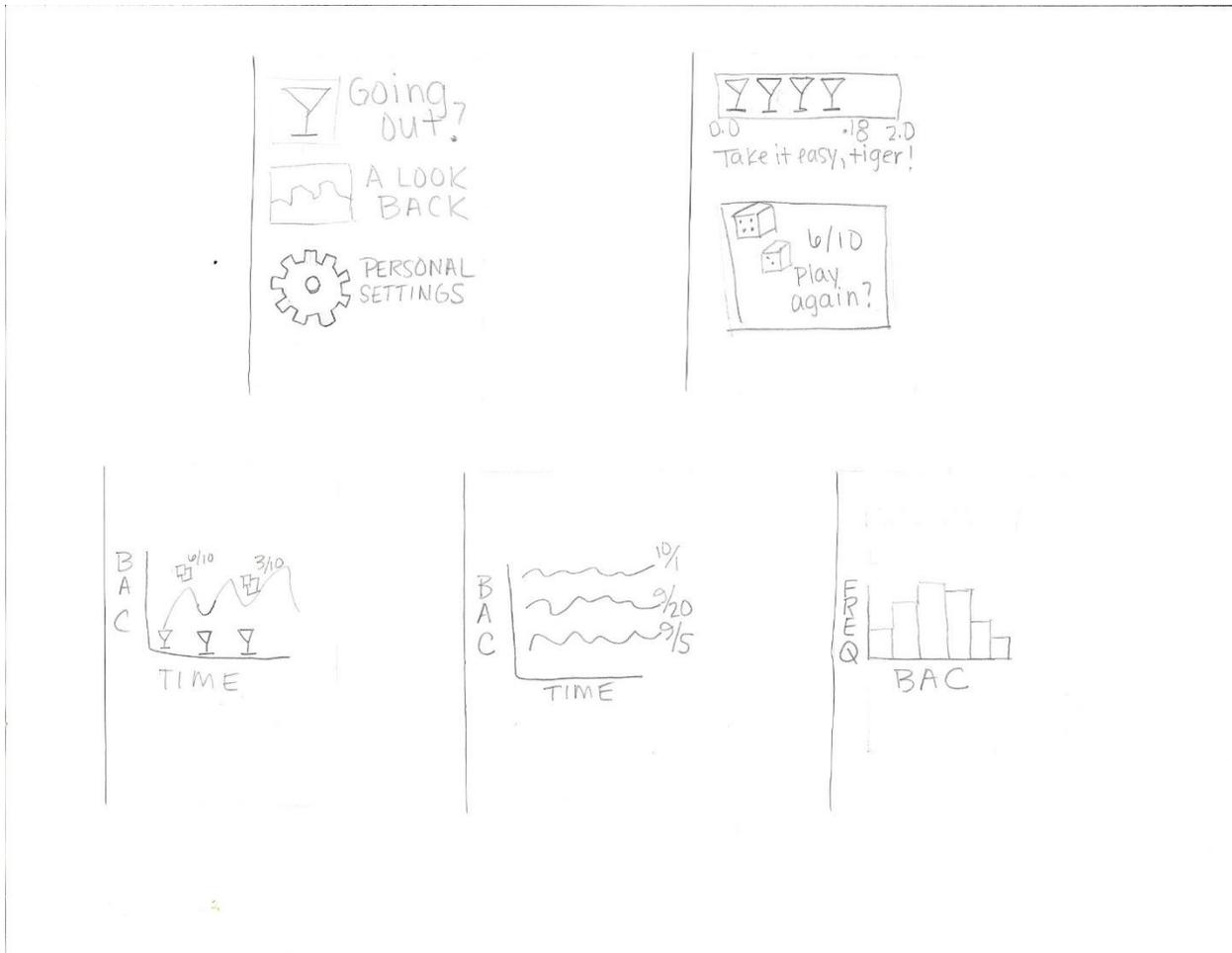


Figure 2: Simple home screen; monitoring screen with meter; three levels of data visualization

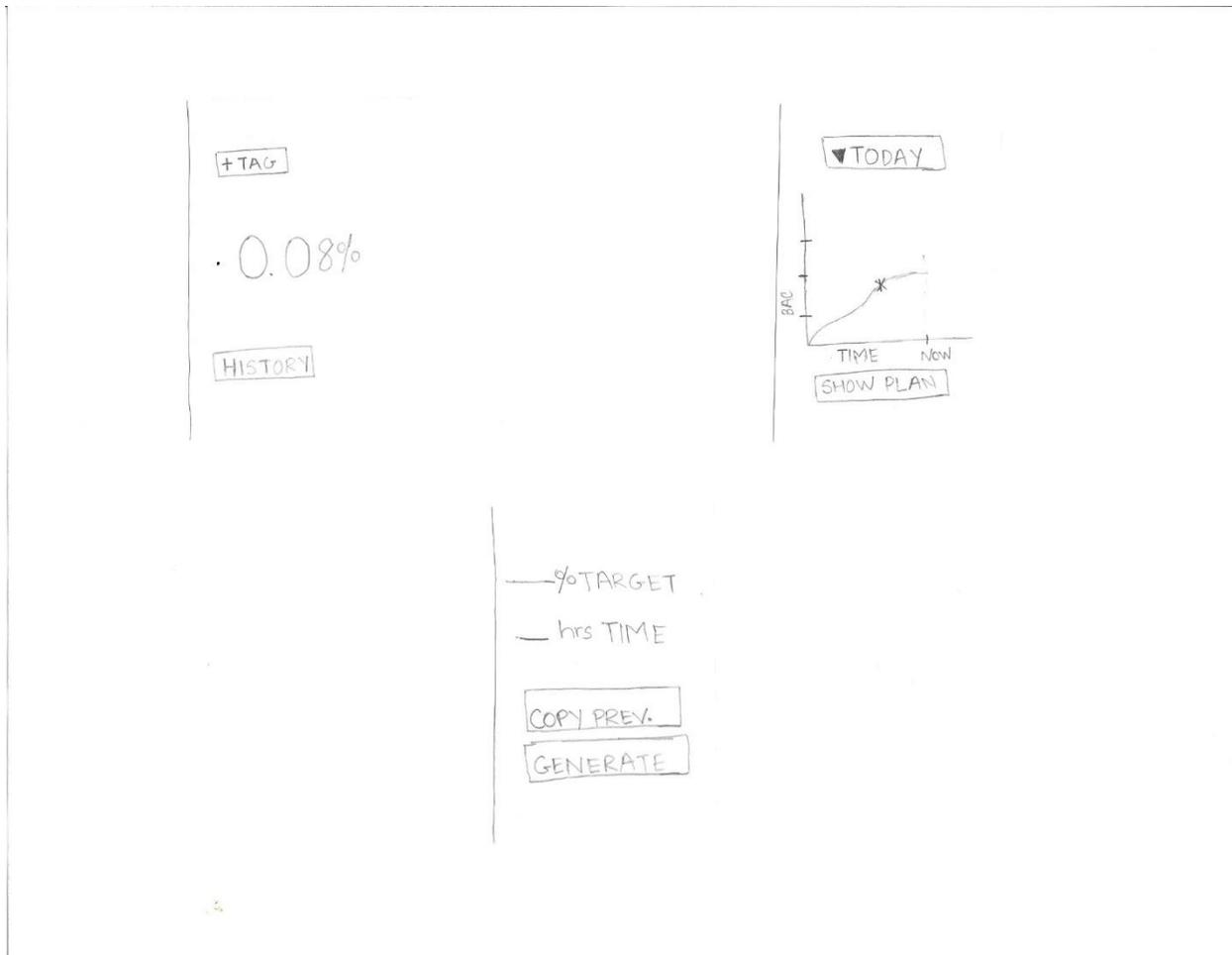


Figure 3: Simple monitoring interface; History display; Plan screen

## Selected Interface Design

### Decision and Rationale

We decided to select the design in *Figure 1* as our final interface design. It is intuitive, clutter-less, and unobtrusive. We primarily choose design 3 because it requires very few steps that the users have to take in order monitor their BAC. The application is effectively always running in background and starts monitoring only when the BAC level reaches .01%. The design follows the principle of minimal intrusion - users will be busy enjoying their night, and should not be bogged down with launching a phone app just to check their BAC. Should they desire to do more, this design also allows the user to go directly to the application. Finally, this design feature makes tasks of monitoring, reflecting, and planning very efficient and effective.

## Functionality Summary

This design lets you monitor, reflect, and plan.

Monitor- Figure A, B

Reflecting- Figure C, D

Planning- Figure E

## Interface Description

The unlock screen notifies the user when the BAC level is at certain pre-selected level.

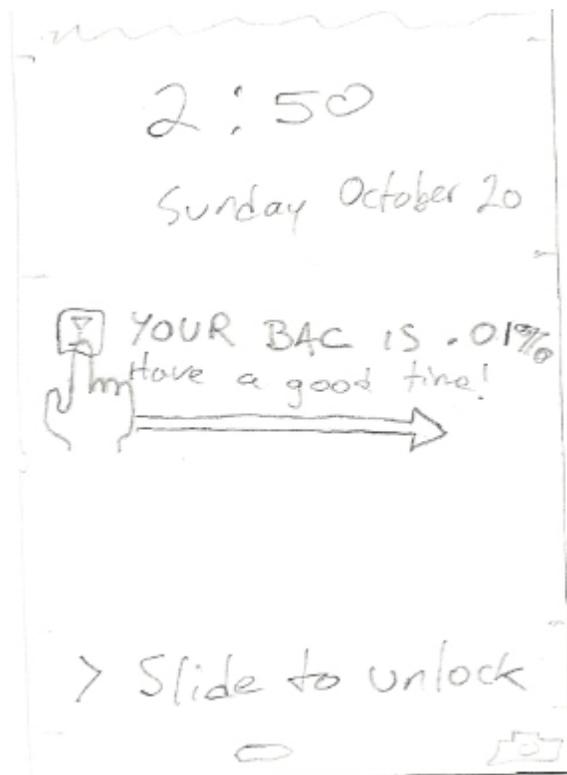


Figure 4

The user now unlocks the phone and launches the application. On this screen the user can clearly monitor what their BAC level is. BAC level is displayed on an odometer like dial which is divided into three main level. These three levels are pre-selected by the users. Here user can also “Tag” a specific incident from the night which serves as a memo when referring back to specific night.

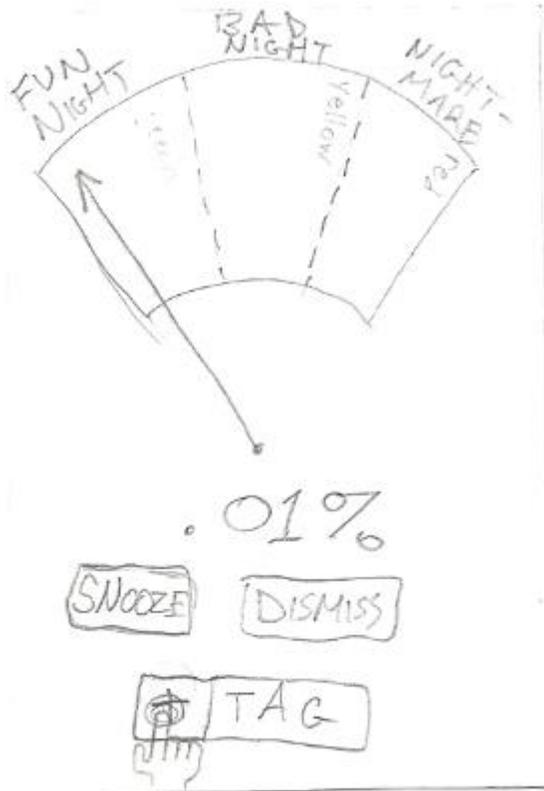


Figure 5

When the user launches the application without any notification they will be navigated to Figure 6. On this screen they will be presented with a list of dates with corresponding BAC level. User can switch between list and calendar view to explore their BAC from other days.



Figure 6

When the user clicks on a specific day and they will be navigated to new page where they can see a graph of Time vs. BAC. Here they can also click on the “memo” icon on the graph to refer back to the tag.

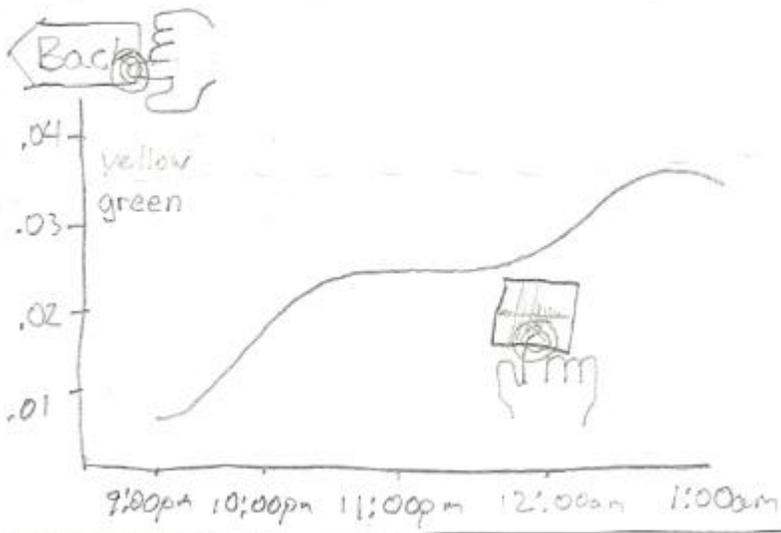


Figure 7

From Figure 6, the user can navigate to the settings page. Here the user will be able to decide their notification settings. User will be able to set Boundary 1 and 2 of their preference.

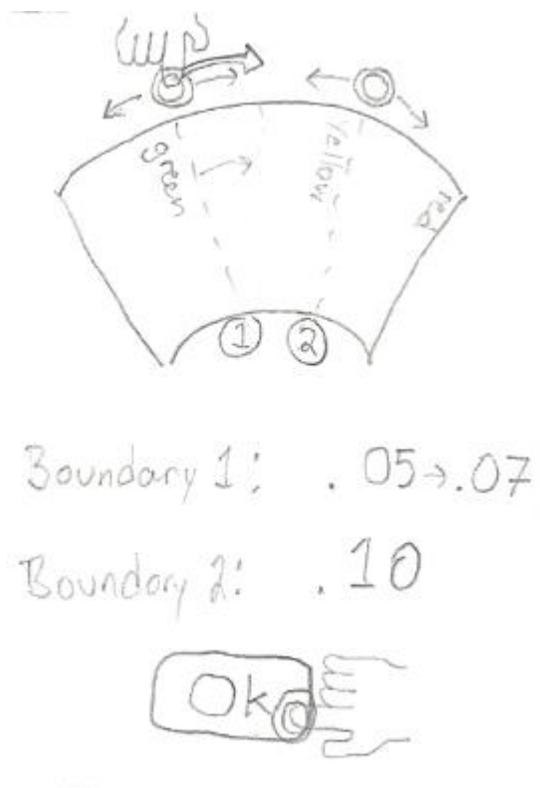


Figure 8

## Scenarios

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### Scenario 1

Jeff Winger finds himself at a sports bar, watching a football game with his buddies. They take turn ordering rounds for the group, and Jeff soon realizes that his head is starting to spin a little. Knowing he has to drive back, he pulls out his phone to check his BAC. *Figure 4* informs him that his BAC is at 0.06%. He can now slide to unlock straight to *Figure 5*, where he can see that his current BAC is becoming dangerously close to his preset limit of 0.08%. Jeff decides to pass on the next round so that he will be sober enough to drive home.

## Scenario 2

Today, Jeff Winger wakes up with a massive headache and little recollection of the previous night's events. Confused, he looks to his trusty application to find out more about what happened. When launching the app, he immediately sees *Figure 6*, with an entry for the previous night. Jeff notes that his max BAC for that night was quite high, and selects that night to view. This takes him to *Figure 7*, where he is able to touch parts of the graph to reveal the memos he left himself as his BAC climbed to dangerous levels. "Threw up just now," one memo reads, and gives Jeff an idea to set his BAC limit for future outings just under where the memo was placed.

## Scenario 3

Based on his previous idea to change the limits shown on the application, Jeff Winger navigates to settings, *Figure 8*. Here he moves the sliders to his desired positions, based on his previous experiences and information he has gained from the application. Based on his experience at the sports bar, Jeff places the first boundary at .06, where he knows he gets tipsy, and the second at the same level as when he saved a memo that he had just thrown up. He hits the OK button and is now ready to go out again, drink, and thrive.