

# TalkBAC

DRINK & THRIVE

## Team and Roles

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## 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.

## Contextual Inquiry Participants

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- Jennifer is a 21 year old communication major from Western Washington University. She like to drink occasionally at house parties but she enjoys drinking at clubs and at football tailgates. We encountered her at Von Trapp's bar in Capitol Hill.
- Gary is a 25 year old accountant at a small Seattle accounting firm. He likes to drink a few beers if he's watching sports, but also likes to drink at parties and at clubs. We encountered him in his home as we watched a football game and prepared to head out to a club.

- Valentino is a graduate student in his early twenties. When we met him, he was at a bar playing pool with some friends.
- In all of these encounters, we took on the role of an apprentice being guided by the expert in the ways of having a good time and doing so with alcohol.

The target clients for our contextual inquiry were distinguished on a single important characteristic – they drink. Jennifer, Gary, and Valentino are the kinds of people who drink on a regular basis, and are therefore offer excellent perspectives on the way people approach alcohol consumption, from their settings to their goals and even their limits.

## Contextual Inquiry Results

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### *Monitoring Inebriation*

We were unsurprised to learn that none of our customers have ever been aware of their BAC as they drink. Few people carry a breathalyzer to a bar or a party. To track their alcohol intake they relied on three types of cues: number of drinks, physical sensation, and feedback from friends. All three mentioned number of drinks as an indicator even though it seems to be an unreliable figure. During her interview, Jennifer insisted she'd only had two drinks even though we observed her have five. Only Valentino pointed out that alcohol content can vary wildly between similar drinks and the importance of elapsed time as well as food consumed. The following physical signals were mentioned: loss of balance, slurred speech, numbness, and nausea. Feedback can take two forms: solicited or unsolicited. Valentino subscribes to the former. When parts of the previous evening are missing from his memory he asks his friends to fill in the gaps. On the other hand, Gary said his friends often will tell him if he's had too much.

### *Limits*

We wanted to know how our customers decide to stop drinking so we asked them what their limits were. This question was interpreted as the maximum amount of alcohol they could handle before experiencing alcohol poisoning. For Jennifer that's seven drinks, nine to ten for Valentino, and ten or twelve for Gary. It's important to note that we deliberately left our questions about limits vague. We didn't ask how many drinks they can have before throwing up or passing out – they inferred both the quantifier (number of drinks) and end condition (signs of alcohol poisoning) on their own. It seems that for our

customers their limit isn't when the evening goes from fun to bad, rather it's the boundary between bad and catastrophe.

## *Consequences*

There have been times our interviewees didn't monitor their drinking close enough and suffered as a result. Some of these consequences were minor annoyances but others were serious deterrents. The former were often the result of impaired decision making, such as Jennifer going skinny dipping at a public beach and Valentino's propensity for logorrhea. More serious consequences are hangovers, blacking out, and throwing up. All three of our interviews mentioned specific instances of these three ordeals and expressed a desire to never experience them again.

## *Planning*

Our inquiries revealed an apathy for planning. Valentino only decides how much to drink ahead of time if he will be driving. Gary told us the only thing he plans on is what to bring to a BYOB party. Jennifer figures out transportation (busses and cabs) but the number of drinks is a vague number that she rarely adheres to. Jennifer demonstrated a rationalization process as she went beyond her drink limit. This is most likely related to the impaired decision making mentioned earlier.

## *Self-Perception versus Reality*

Because alcohol impairs judgment, our customers are unable to accurately assess their inebriation after a few drinks. After her fifth drink, Jennifer said she was only slightly tipsy, but she was having trouble walking and repeated questions multiple times. Valentino said he will sometimes try to stop drinking before blacking out but has trouble gauging that level. A system for objectively evaluating their intoxication would be useful to avoid this phenomenon.

## Existing and New Tasks

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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.

# Additional Sketches of Design

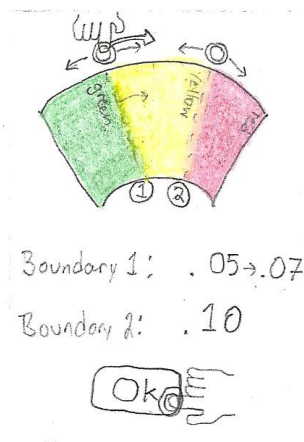
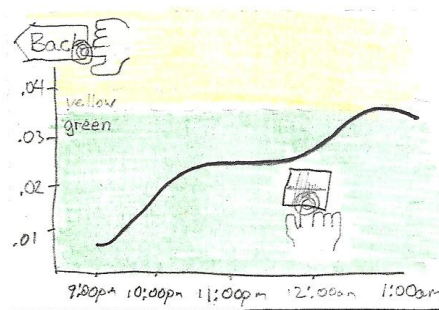
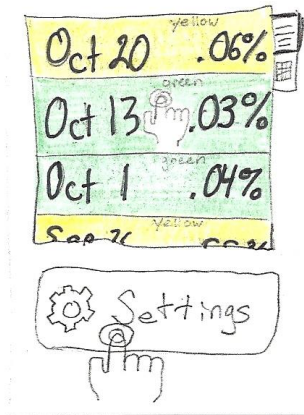
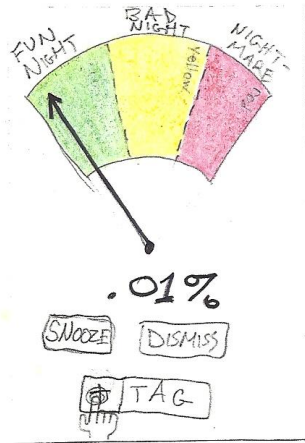
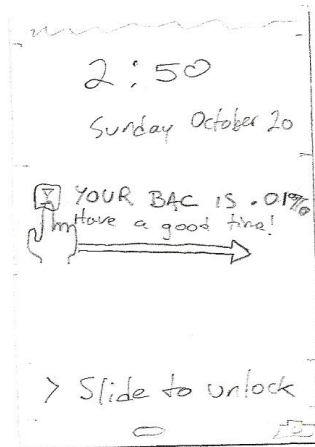


Figure 1: Dial indicator with lock screen integration.

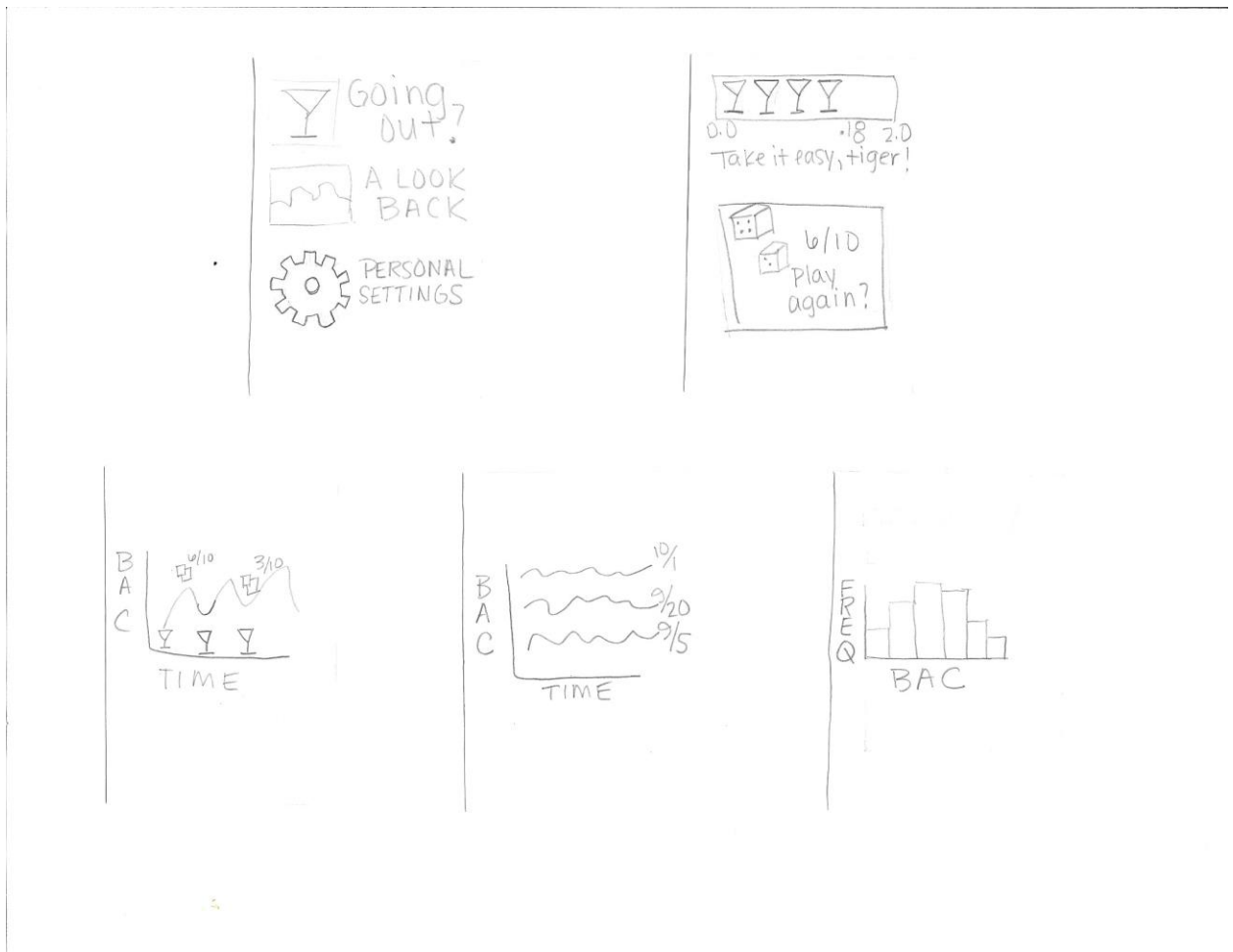


Figure 2: Meter interface, game scores, and three-tier data visualization

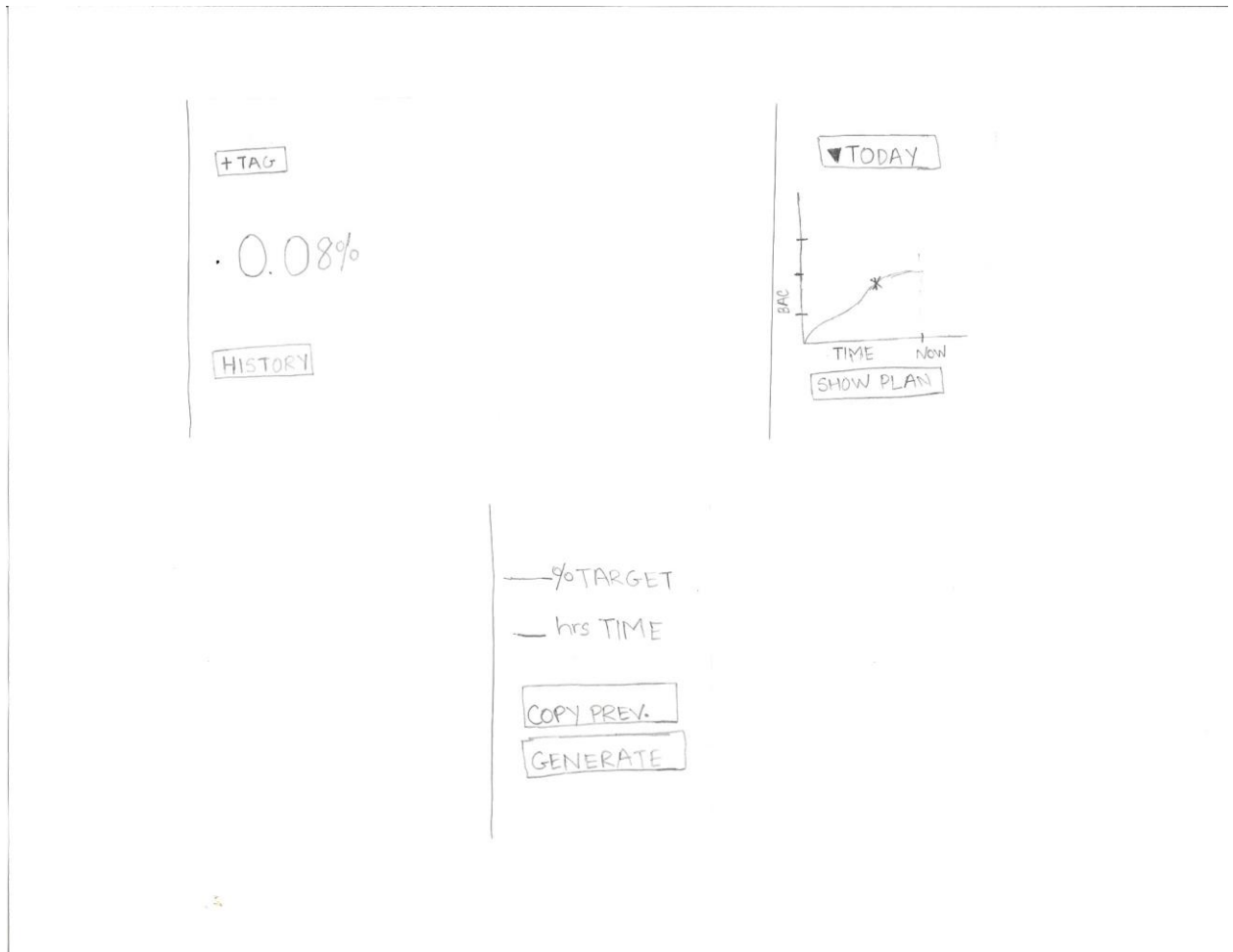


Figure 3: Raw numerical display, graph view, and planning interface