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CSE 170 – HCI

TA: Kandarp

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<div align="center">Assignment 1: Needfinding</div>

Observations

My observations regard the topic **Status Quo** and involve observing people perform work or study for large amounts of time. My goal is to discover habits that people form during these time periods with respect to free time, motivation, or energy, and find ways to disrupt them. I believe this relates to Status Quo because long hauls are common for most college students, and should be improved if possible. To preserve anonymity, all subjects' names will be replaced with types of beer.

Pale Ale

Pale Ale is a graduate student researcher at a UCSD lab, on track for a PhD in Human-Computer Interaction. Her work tasks involve participating in lab meetings and collaborating with peers or advisors to conduct research. She uses a laptop and monitor at her desk to work, and has a standing desk to support multiple postures.

Ale works about 5-6 days per week, and her work sessions span 3-5 hours on average. She often struggles with focus, especially early on in a project or towards the end of the day. To remain energetic, she will use her standing desk to work in a more upright position or go for walks in the nearby forest on campus.

She prefers naps and quiet periods of rest to caffeine, but finds that they can disrupt her cognitive flow. So when all other options have been exhausted, Ale makes cups of coffee to get a caffeine boost and force herself to stay awake. However, this method doesn't do much to help attentiveness. If she's simply fatigued from work, focus can remain low. By far, her favorite method is walking and enjoying nature – the fresh air and exploration invigorate her mind.

Pale Ale plans her breaks according to her schedule. Around noon she will typically leave for lunch, and midafternoon or evening for dinner. If she feels hungry before these times, she finds she is flexible enough to adapt. She doesn't generally forget to take breaks, but might sometimes work through lunch if she feels extra productive or needs to keep her focus. If Ale is working slowly, she might realize a break is necessary to restore her productivity. Reminders to break at certain times might not be helpful, but reminders for certain moods could be.

Ale decides her sessions are finished if an event needs to be attended or if she feels hungry. She may also conclude after reaching a good stopping place in a project.

Stout

Stout is an undergraduate at UCSD majoring in Bioinformatics and on track to apply for medical school. He prefers to work or study at home, arguing that he has everything he needs there. He uses a desk with a monitor and laptop setup, and often listens to music through

headphones to isolate himself while working. He works sporadically, ranging from 2 days per week to 7 days per week based on his workload. His durations also range, but tend to hover around 5-6 hours per session.

Stout doesn't tend to lose focus or energy while working, consciously taking small breaks every few hours. "If I need to focus, I will," he says matter-of-factly. He states that as his anxiety rises, so does his focus and motivation. This helps him on assignments during crunch time, where he tends to complete most of his work.

He claims to be most productive after procrastinating, so he uses this to stay energetic towards the due date for an assignment or the day of an exam. His second favorite method is caffeine, either in the form of coffee or Red Bull depending on how desperate he is to keep his energy up.

During breaks, Stout likes to play guitar or indulge in something mindlessly enjoyable, like video games. Sometimes he prefers to be productive away from work, with activities like jumping jacks or house cleaning. If he feels sleepy, he will caffeinate (with a close deadline) or take short naps (with a distant deadline).

If a break time – such as lunch or dinner – is missed, Stout considers this a positive and is proud of having become so invested in his work. He doesn't feel as if he needs reminders to stop, and only does so when he's finished his work or become sick of the activity. He sets deadlines throughout the day to keep himself motivated by positive stress, though he keeps them short enough so that he is consistently behind.

IPA

IPA is a recent graduate of UCSD from the Cognitive Science department. Her emphasis is on Neuroscience and she hopes to use this in her future career. Currently, she is working as a nanny for four days out of each week. She also does freelance graphic and web design. Typically, her sessions at a desk reach about 4 hours.

IPA almost never finds herself at a loss of focus or energy, and uses meditation to achieve this. When she becomes tired or fatigued, she takes 5-30 minute rests to clear her mind. These meditation breaks will vary in length depending on her stress level.

She typically takes her breaks around lunch to eat or in the morning, after finishing her coffee too quickly. On her breaks, IPA likes to meditate or practice yoga. As an animal enthusiast, she also enjoys trips to dog parks or the downtown San Diego Cat Café (I just learned this is a thing).

IPA will often forget to break, reminded only by her friends texting her at lunch time to meet. She takes a work break at this point to talk over the phone or have a hangout. Her personal goal is to work for at least 5 hours per day at coding/designing. This is because "if it takes 10,000 hours to become an expert at something, then only 20 hours a week is needed. Thus, if I spend five a day, seven days a week, I am spending 35 hours a week to become an expert, and I will reach my goal much faster".

She is only done with her task when she feels she's made a personal accomplishment.

User Needs

1. PA needs a way to stay focused besides keeping energized.

2. PA needs ways to predict her losses of focus or energy based on their typical occurrence.

3. PA needs a way to motivate herself when focus is lost during work.

4. PA needs a way to be reminded to take breaks if her productivity falls during work.

5. PA needs a way to find pleasing places to explore outdoors – these are the most stimulating breaks she can take, so they need to be a priority.

6. Stout needs suggestions on where to go outside of the apartment.

7. Stout needs tips for working out – he currently does jumping jacks but can mix it up with more varied exercises.

8. Stout needs more exact ways of planning out his work sessions.

9. Stout needs more positive ways to increase productivity than anxiety and last-minute sprints of work/studying.

10. Stout needs healthier alternatives to restoring his energy than coffee and Red Bull fixes.

11. IPA needs a way to be reminded that a break is needed.

12. IPA needs a way to plan her goals for the day.

13. IPA needs more convenient ways to meet animals – they are her favorite way to relax and enjoy the world.

14. IPA needs a way to live-track her personal accomplishments throughout each work session, or the day in general.

15. IPA needs ways to leave reminders of where she left off the previous session.

Photos & Captions

I chose to observe three people working for long periods of time.

Photo 1:
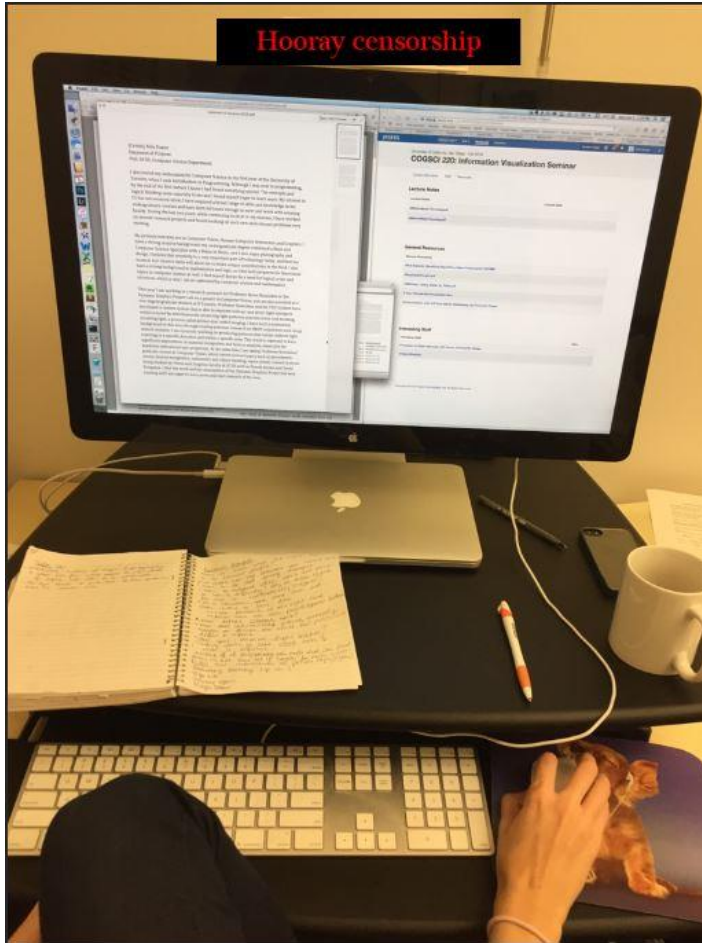
Caption 1: Pale Ale uses her monitor to contain multiple screens at once, multitasking to increase her productivity. She intermittently switches to her notebook so as to split up the time she spends and avoid getting tunnel vision. She drinks coffee (right) because she just got a wave of sleepiness – this observation took place towards the end of the day, when fatigue is most likely to occur.

Photo 2:

Caption 2: Stout declined to be in the picture, but offered his workspace as a demonstration of his work habits. He keeps his guitars and reading materials to the side of his desk, for easy switching if a break is needed. His desk contains a monitor and slide-out keyboard, as well as a pair of headphones for music.

Photo 3:
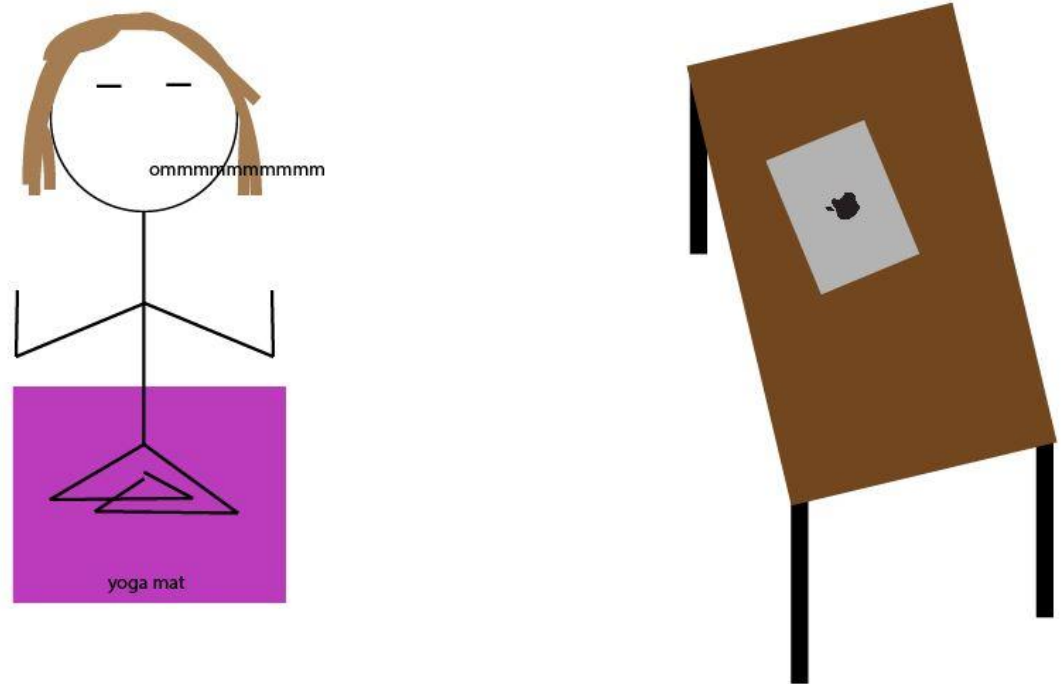
Caption 3: IPA was also camera shy during this study. This awful 2 minute sketch from yours truly sketch shows her main method of restoring energy and focus: mediation. During long sessions, meditating helps IPA clear her mind in order to figure out any problems/roadblocks or de-stress before returning to work. To do this, she moves away from her computer, sketch books, or whatever other tools she is currently using, and sits on a yoga mat.

Point of View

A core problem with long study or work sessions is that people feel the need to force themselves through tiredness or fatigue without anything to aid them. The second two subjects I observed use short breaks (jumping jacks, meditation) to energize. The first, however, would end up losing focus more easily due to a lack of short disruptions. I believe a high-level strategy for redesigning this activity would involve prompting users to take short breaks throughout long work sessions, in order to stay active and motivated.

Needfinding Talk

The activity I chose to observe is people working or studying for long periods of time. My subjects included a PhD student researcher, a premed student, and a recent college graduate. My observations revealed that long study sessions are best completed with short breaks throughout – these 5-10 minute breaks help people relax and recuperate, which improves their functionality overall. People who try to "work through" tiredness and fatigue or replace breaks with caffeine fail to recover and end up losing even more focus. I propose a high-level design solution in which users are prompted and rewarded for taking short breaks over long work sessions.