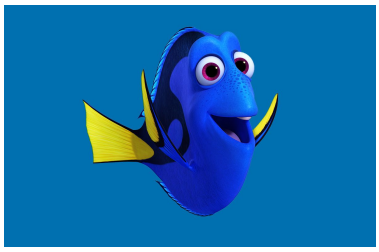
Human Centered Interaction

Application to Help with Short-Term Memory Problems in Daily Life

Erika Bailon (Liaison) erba0445@Colorado.edu
Nimra Sharnez Nish6496@colorado.edu



Project Description

With modern day's frequent advances, the rhythm of life moves *fast*. Remembering if you locked your car door or turned off the stove or where you last left your keys are common curiosities constantly wandering through our brains.

Stress, depression and anxiety prevail in this day and age, costing us of our daily duties. When it comes to staying on top of our tasks, said conditions lead to problems with short-term memory, making days even *more* stressful, occupying our brains with 'Did I do this' or 'Where did I put that?', preventing us from focusing on what is happening *now*.

Lack of sleep, busy schedules and forgetfulness are common factors that contribute to issues of short-term memory loss. For this, our target group will be students and workers who struggle with two or more of these factors.

We carry our phones everywhere, when it's not in our hand it's in our pockets. That being said, we propose an application for your phone where you can track your tasks. Seeing all of our daily duties in an easy to view platform with indications of whether the task has been completed or not, giving users an on-the-go, digital and interactive agenda. In additions to tracking their *daily* duties, there will be a log where the user can review their common doubts (such as remembering to lock their car). They can track this *customized* log full of frequent doubts an *x* amount of times everyday. This application may even feature a sleep tracker to make sure the user is getting a sufficient amount of rest to carry out their daily tasks.

Group Documentation

Communication

We will communicate through Hangouts and text messages and store our documents on a shared google docs.

Meetings

We will meet every weekend. The time will be determined on availability on both sides.

Research Plan

1:1 INTERVIEWS

Through one on one interviews, we can get feedback with our future users. Each group member will interview 5 people individually. We will find out who to interview through posting flyers around campus and other workplaces where we may find forgetful, sleep deprived, or busy schedule people. We will have contact information where potential users can reach us. Ironically enough, due to our users having any of those three factors, as well as for our own personal safety, we will be conducting the interviews via phone calls or on campus.

We will first be asking users personal questions to gain insight of how a person who would benefit from this application is. Here are some examples of personal questions that may be asked:

- How many hours of sleep do you get a night?
- Do you think sleep is important for you to function better?
- Do you forget things often?
    - What are the kind of “short-term” things you forget?
    - Are there things you are doubtful/ forget about on a *daily* basis?
        - (e.x. Locking your car, placing your keys or wallet etc...)
- How busy is your schedule?
- Do you use a planner/ agenda?
    - How often?
- Tell me a time where you had to keep checking if you did something or not. (e.x. You didn’t remember if you locked a door and went back to check twice)

After personal questions, we will move on to questions more related to the application AND the user. Questions would be related to what a person would benefit from in an application that helps to keep you from forgetting such as:

- Would you benefit from a sleep tracker?
    - What would you like to know about your sleeping?
        - (e.x. Consistency, length, naps etc...)
- On a busy day, do you make a mental note of all the things you have to do, or do you write them down?
    - Does writing down what you have to do help you to remember?
- Would you use your cellphone to make note of things you forget often such as: Where you last left your wallet? Did you locked your house?
    -

We will inform the user what our application aims to do and allow for them to tell us feedback on what they would expect and look for in an application like this. Receiving input from the people gives deeper insight on what would be appealing in an application to those who suffer from short-term memory loss.

FOCUS GROUPS

Through a focus group, not only can we ask questions to multiple people at once, but we can also conduct tests to see how well people with short-term memory or sleep deprivation remember/ don't remember things.

When it comes to asking questions to a whole group, we will have group sizes from 2-4 people and ask questions similar to the interview questions above. The advantage of this is that people can build off of eachother and certain things people say can trigger the other people to add information that they may not have thought of before.

Conducting tests would have to be something done more so 1:1, however. By using colors and/or different shapes we can see how users remember certain things. A simple test of memory would be done like so:

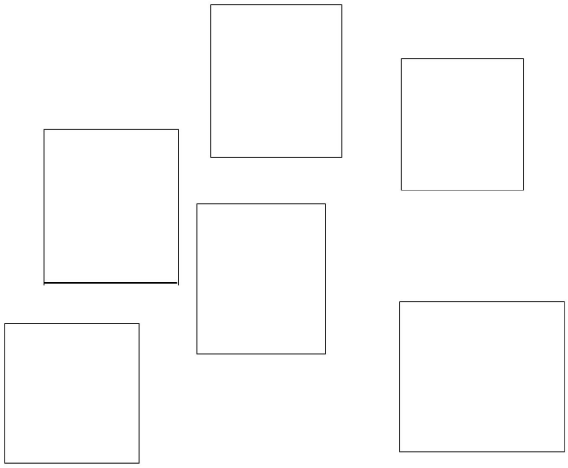
Subject will be shown a black and white picture of random letters in the alphabet like the one bellow.

After the subject has looked at the photo for 10 seconds, they will be asked to complete a simple task, such as writing down their name on a piece of paper or completing a simple math problem. The purpose of this mini task is to simulate real life where we typically place something somewhere, complete some other task,

then look for where we last placed that object. For example, when we are doing something and holding, say, a beverage, we are so focused on the task at hand we typically randomly place our beverage somewhere, then once the task is complete, we forget where we put our beverage.

Prior to showing the subject the photo, we will tell them that we will show them a photo and they can look at it for 10 seconds then they must complete said task *immediately* after. This will cause the subject to be focused on the task of writing their name down or completing some math problem.

After the 10 second staring of the photo and the mini task is complete, the subject will be given a paper to replicate the photo they looked at for 10 seconds to see if they remember where the letters belonged. The paper given will look like the image below.



This allows for subjects to know where the letters could be, but not what the letters were, that is up to their memory to remember.

After collecting the data from the results of this test, we will conduct another test, similar to the one described about, but now the letters will be colored to a different group.

The same test as the one above will be conducted with another group. The only variation is the colored in letters. We will collect the data of both tests to see if there is a significant difference (using statistics) in the subject's ability to remember the placement of letters when they are in black and white versus when they are in color.

Depending on the outcomes, this will help us in developing an application that can help people remember things better through bright, colorful object associations. We may incorporate a variety of color schemes in conducting this test as well to see which scheme worked the best with most people.