Research Process

Key Question: How much should we rely on digital technology?

This project aims to create an interaction design to recovers the degenerated brain functions because of overusing digital devices.

Background

Today, various smart devices are developed and our dependence on the digital device continue to rise. But as digital technology and its benefits get bigger, our memory and cognitive abilities are decreased.

Brain Research

Our memory and cognitive abilities are built by neurons and synapses.
Our brain is composed of many neurons and synapses. These synapses become thick when it is stimulated, and die when it does not in use. The factors that enhance synapse are experience, feelings, emotions, and behavior. Our brain has evolved to receive information from these various elements. But this algorithm is changing or degrading due to overusing digital devices.

Experiment

The research was conducted by Dr. Betsey Sparrow, Jenny Liu and Daniel Wegner.

Conclusion:

People are primed to think of computers when asked general knowledge questions, even when they know the correct answer. And this effect is especially pronounced if the question is difficult and the answer is unknown.

Secondly, people do not tend to remember information if they believe it will be available to look up later.

Lastly, if the information is saved, people are much more likely to remember where the information is located than to recall the information itself.

* It shows that the Internet can replace the way to memory information. Thanks to the search engine, we can easily find all the knowledges we need. But as the way to find information is simple, our memory and cognitive abilities are degenerated.

Research 2
Skinner box

Like Skinner's experiments, we turn on the Internet first when we have questions to get more efficient results, which means we have changed the way we get information. This process is being repeated. There are various problems in this process such as digital dementia,

Existing Solution:

To solve the problem, the solution is very simple. We already know a lot of solutions, such as digital detox, enough physical activity, sleep, brain exercise games. When I read the research in terms of this or articles, the solutions are almost same.

The iPhone also had some fun options. The iPhone has the ability to turn off the cell phone screen or chosen application at a certain time.

But the brain exercise game is still controversial issues. Although the brain game market place is getting bigger, I could not found good research that brain game is more effective than other solutions that I mentioned before. Also, I found that these games would be effective to the degenerated brain because of the aging process.

To do further research I emailed some doctors to make a conclusion whether the game would be a radical solution for improving memory and cognitive ability. Fortunately, I gain the opportunity to interview with Dr.Sang Gyu Lee who is Psychiatry professor at Hallym University.

He mentioned that game contents cannot be a good resource to solve the issue because it has many negative elements for treatments such as addiction, competition, time management.

 The solution to my problem would be a complete disconnect from the digital device. But this is an extreme solution and has many adverse effects. With the advancement of technology, we will be in an environment that uses a wider variety of digital devices in the future.
So it's a risky rest to spend time completely disconnected from the digital environment.
As a prototype, I have thought about how to exercise the degraded brain functions in the digital and analog environment together.

Final Idea:

My final idea is interaction design tool to introduce ideal way for my target audience who is overusing digital devices. I am still working on for that and tried to making web board to manage user's screen time and introduce the customized way for each users.

API:
News API (to read the article, which is good for brain training + gaining information)
Music API(Listening music is good way to motivate people to do physical activity such as walking or fitness. Users can share good music lists that can be matched with physical activity, one of the most efficient way for brain training.)