

## Design Brief

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**Problem Statement:** Briefly describe the people who will benefit from the project and the challenges they face. Include any inequity that the project hopes to address.

In the United States, 12 million seniors live alone, and 40% of them have memory issues. This means they're prone to forgetting even the most everyday of tasks. With the age of technology always looking to the future, these elders are often left behind. The TASK Counter helps them stay on top of their tasks and keep moving forward. Its low cost design also helps make technology more accessible to the 4.7 million seniors who are impoverished.

**User Research:** Discuss key information about the users gathered through your research, interviews, and ongoing discussion with the users throughout the project.

In November, we virtually interviewed Suzanne Silverstein, the grandmother of one of our team members. Everything turning virtual was not the biggest change for her, it was the isolation. The impact of being so isolated doubled when her husband passed away. Her usual day hadn't changed that much. There were still little difficulties like having trouble using her phone due to her arthritis, but the new change was her perception of time. It had become much more difficult for her to stay on top of all of her tasks. We knew this couldn't be a problem for just her, so we researched it through the Administration for Community Living, and the Pew Research Center. The ACL was a particularly useful resource as it was working towards intersectionality, and was inclusive of seniors with disabilities. We found that 1 in 7 American citizens are over 65, and 5.4 million of those seniors have cognitive difficulties. Additionally, 9.7% of seniors live below the poverty line, meaning we had to work to keep our project low cost.

**User Insight:** Discuss your team's understanding of the experiences, emotions, and motivations of the users.

Her husband's death isolated her. Fortunately, she's a very flexible person, so she was able to quickly adapt to virtual ways of connecting with people. Connecting with people virtually meant she wasn't lonely, but the isolation still presented difficulties. There were no longer outside influences that helped to differentiate in the passing of time, and so she found she was wasting a lot of her time on things like FreeCell. This brought her some joy, but there were other things she found more enriching that she ended up lacking the time to do. After his death, she had even more to do. She's recently started to have some problems with her hip, and in the last few years has gotten hearing aids. These pose even more obstacles for her in completing her tasks, even everyday ones.

**User Needs:** A specific list of user needs produced from the user Insight is provided.

Suzanne needed a way to keep track of time so she could stay focused on her tasks. Whatever solution we provided needed to be transportable since she had no one to help her carry things, and such a big house. Plus, her hip was acting up and would make anything too bulky difficult to use. Anything being added to her daily routine also needed to be non distracting as she had become more easily distracted with no one to remind her to get back on task, and the warped sense of time.



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**Project Goals:** Goals selected are linked to and will adequately meet the users needs.

Our main goal was to create something that would help her stay on top of her tasks. The project should be light, and somewhat small so it could be transportable, and the design should be simple so that she wouldn't get distracted. Additionally, a simple design would be more intuitive and would help her save even more time by being easy to use. It should also be easy to use in the sense that the way the user interacted with it wouldn't require fine motor skills.

**Key Features of Design:** The list of the key features illustrates that design will adequately meet project goals.

The screen displays a number which represents the number of tasks the user has left to complete. The user is able to add tasks by flipping whiteboard slips over light sensors. Each slip can be written on and erased with a dry erase or washable marker. This allows the user to update and change the tasks as many times as they'd like without wasting paper. The product is housed in a small, eco-friendly box made of recycled cardboard, which is light and easy to move. On the end of each slip there is a magnet, and on the box there are magnets so that the slip will stay in place. The box and electronics have only the necessary parts so that the user isn't distracted.

**Status of Project:** Adequately examines the progress of the project and discusses potential next steps.

The project is currently fully functional and is housed in the box. We are considering painting the box a solid color, since it is a recycled food box and the current pattern could be distracting. We would use either blue or green because they are Suzanne's favorite colors, and they are proven to help calm people, among other benefits. Before we spend effort on that we're going to add more photoresistors so the user can add even more tasks. The current project is just a task counter and to-do list, but we'd like to add a reminder function to help Suzanne stay even more on task. An audio reminder is the best option because it means the user doesn't have to be looking at the project to be reminded. We have a speaker ready to be connected, but are currently researching the code. We'd start off by prioritizing the tasks. The first task would have a reminder every hour, the second every two, and the third; every three. These times were requested by Suzanne, but another user might have differing opinions. That is why after we are able to make that code work we want to make the times customizable.

**Impact:** Discussion adequately describes how design may improve inequity for the user and/or remove barriers.

The TASK Counter can help anyone stay on top of their tasks, but especially seniors with memory issues. The streamlined design makes it more accessible for those with difficulty moving around and for those who have lower hand eye coordination. The simplicity not only makes it more accessible in terms of use, but cost. The lower number of parts makes it more affordable for low income seniors, which is quite important considering that in the US 4.7 million of them are impoverished. The cost is further lowered by the recycled box, which also makes our product more

environmentally friendly.

**Reflection:** Demonstrates an increased understanding of Human Centered Design. Discusses personal growth and insights about designing for others and helping them overcome challenges.

We realized how much difference technology can make in someone's life, even if that person isn't into technology. We also learned how important it is to not only listen and understand the user, but also making sure the user understands. This can be rather important, because if we were to design a product that we the producers thought was a fit, the user may not have the same results with the product as were intended.



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**Prototype Graphic:** Graphic is easy to understand and adequately labels key features

microbit screen  
that shows number  
of tasks

whiteboard slips to  
write tasks on

box made  
of recycled  
cardboard

magnets to help  
keep task slips in  
place

photoresistors that  
check light levels  
and send info to  
microbit

