Memorable

Personalized entertainment for people with dementia

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Final Report

The Project

Problem

Alzheimer's disease and dementia can affect many aspects of a person's cognitive ability including their memory, attention span and ability to solve problems. Caregivers face challenges with finding ways to engage and mentally stimulate patients suffering from these conditions and currently most entertainment tools and games are not designed with memory-impaired individuals in mind. We have set out to find a solution to address this gap and create tailored and personalized entertainment that helps these patients recall forgotten memories.

Process

Our main design question is "How do we balance caretaker responsibility and family interest to provide personalized entertainment for people with dementia?". To build our understanding of the problem space, we received feedback from caretakers, residents, and family members in the form of volunteering sessions, contextual inquiries and usability tests. We volunteered at Briarwood Health Center where we interacted with residents and observed the caretaker-resident dynamic in real time. While at Briarwood, we also had the opportunity to interview family members and caretakers. This allowed us to further understand the role and responsibility of caretakers and family members within the care of people with dementia. We conducted interviews and usability tests with two nurses who work in care homes in addition to several family members who have loved ones with dementia. We also interviewed a PhD in Biomedical and Health Informatics at UW. Her research focuses on activity engagement technologies for people with dementia.

Solution

With the knowledge we gained from our fieldwork and inspiration from a previous HCDE capstone, we designed and developed a tablet application that creates personalized entertainment for people with dementia. In our app, we build off research concluding reminiscence and music therapy are beneficial to people with dementia. These therapies use artifacts such as photos and music to improve psychological well-being by sparking past memories and improving mood. Our final product ended up being designed with Briarwood Health Center in mind and is intended to be used by the care home community, namely family members, caretakers, and residents.

The Design

The solution we've come up with is dependent on the following five design insights.

Personalization

First is personalization. Family members will be the ones to upload because based off of our interviews, they will take the initiative to upload and edit content. This isn't the only source of content, however, which leads us to our second design insight --

Familiarity

The researcher we talked to helped us realize that generic yet familiar content is just as beneficial to people with dementia as personal photos are. Family members and caretakers can add more content by selecting general interests the resident has, such as sports, beaches, dogs, etc.

Family Interest

Our third design decision was to ensure family members are able to see information about the residents are engaging with the content. When we interviewed family members of those with dementia, we found out that they are interested in how and what their loved ones are doing. They are able to see what ar the most played puzzles and their favorite songs to listen to.

Repetition

Our fourth insight became very obvious to us while we were volunteering. The

residents were very repetitious. The caregiver also reaffirmed our observation. Repetition is a theme that shows up in our app by easily replaying puzzles, as well as prioritizing puzzles so the most frequently played puzzles are displayed first.

Contraints

Lastly, our fifth design insight--constraints-- came from our usability tests and interactions with residents. We made sure there was a simple workflow for the resident. To minimize confusion, we wanted to only allow residents to navigate through a limited number of pages, such as playing a puzzle or viewing a slideshow. We used an access code to achieve this, that way the residents are restricted from navigating anywhere else. The user is required to enter a 4 digit pin when attempting to navigate away from playing a puzzle or viewing a slideshow.

We designed the application to be simple enough for individual use, but also kept in mind that caretakers would be readily available to assist in an activity.

Conclusion

Throughout the process, we tried to keep caretaker responsibilities, family interest and resident engagement in mind. We were able to synthesize our experiences, make design decisions, and iterate on these designs to ultimately create an application that addressed the gap in personalized entertainment for people with dementia. While implementation was necessary to surface our designs, the compelling part of this capstone experience was exploring and building an understanding of our problem space. The process of engaging with stakeholders and reflecting on these interactions was the most interesting part of this project.