Memorable
Personalized entertainment for people with dementia
Cindy Fan, Reggie Jones, Tiffany Lin, Saloni Parikh

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. Furthermore, existing entertainment technology in this realm does not incorporate personalized content that can be tailored to each user's particular needs and preferences. Using ideas from an existing HCDE Capstone project, Memorable Entertainment, we set out to find a solution to address this gap to create tailored and personalized entertainment for people with dementia.

Process

Our main design question is, "How do we balance caretaker responsibility and family interest to provide personalized entertainment for people with dementia?". To improve 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 talked to and played puzzles 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 researcher in Biomedical and Health

Informatics at UW, whose research focuses on activity engagement technologies for people with dementia.

Solution

With the knowledge we gained, we designed and developed Memorable, a tablet application that provides personalized entertainment to people with dementia. In our app, we build off research concluding that 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 is intended to be used on a shared tablet in a care home environment. Since we had spent so much time at Briarwood Health Center, our design choices were inspired by how their residents, caretakers, and family members interacted with each other.

Within the app, each resident has their own portal, which contains personalized content such as photos uploaded and music or interests selected by their family members. This content is used in the two enrichment activities: playing playing and slideshow viewing. When residents use our application, they can decide to play a puzzle using a photo, or casually look through a slideshow of all of their photos. Both options also allow them to listen to music they enjoy. While residents use Memorable for enrichment, family members can use it to receive feedback on how and what their loved ones are doing. We provide information on which puzzles have been played most and which songs have been listened to most.
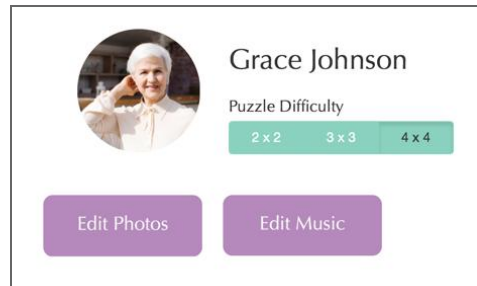
The Design

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

Personalization

Family members will be the ones to upload content because they will take the initiative to upload and edit content. Caretakers are too busy to manage a lot of content.
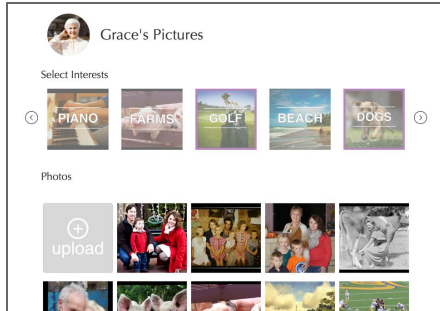

Personalize by uploading your own photos

Ability to change puzzle difficulty, photos, and music

Familiarity

While talking with the researcher, we learned that generic yet familiar content is also beneficial to people with dementia. Family members and caretakers can add more content by selecting general interests the resident has, such as sports, beaches, dogs, etc.
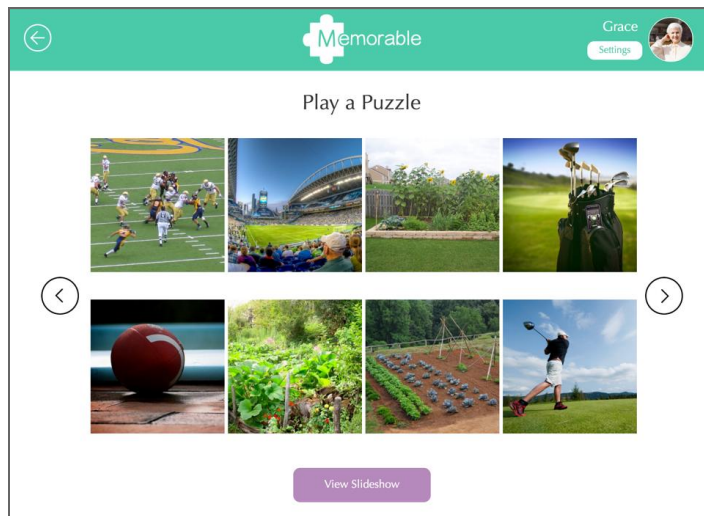
Residents can play puzzles with generic photos of activities they're interested in such as golf, football, and gardening.

Family Interest

We wanted to ensure family members are able to see information about the residents are engaging with the content. When interviewing 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 content they uploaded their loved ones liked most, based on how often puzzles were played and what songs were listened to.
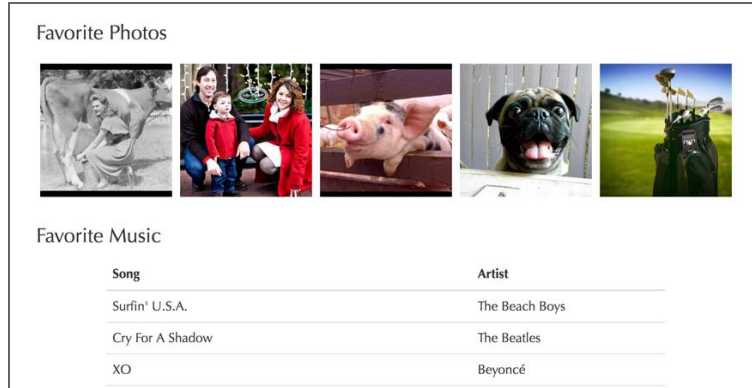
Display resident most played puzzles and favorite songs.

Repetition

Residents were very repetitious because they each enjoyed only a select few puzzles and liked to play those over and over again. 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.
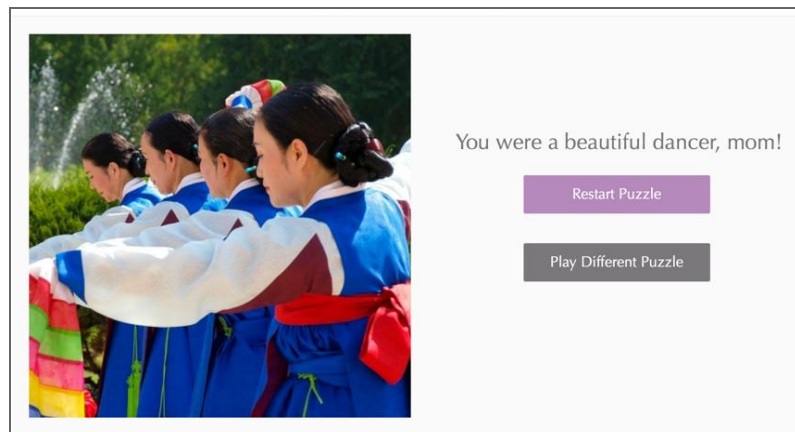
Replay a puzzle with one simple touch.

Constraints

Constraints are a design decision gathered 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, required the user to enter a 4 digit pin when attempting to navigate away from playing a puzzle or viewing a slideshow.
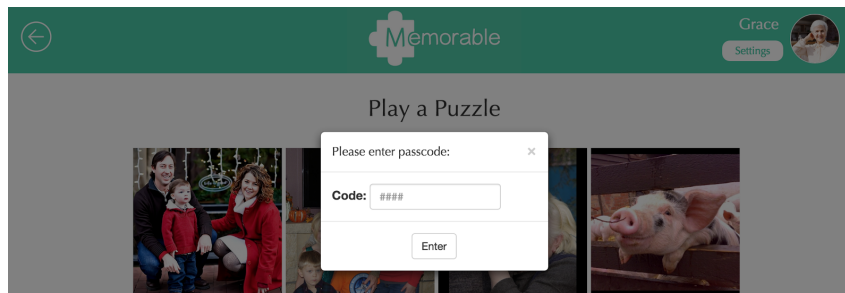
A 4-digit passcode is required to edit settings and go back to list of all resident portals.

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.