Lab 1 – Thought Locker

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1 Introduction

Dementia is a very unfortunate neurological disorder that effects the patients mental remarkably. There are different levels to the disorder’s severity which I will label mild/moderate and severe. Approximately one in ten Americans aged 70 and older are affected by some form of dementia. The severity of dementia varies, with 50.4% of cases classified as mild, 30.3% as moderate, and 19.3% as severe. Some symptoms of mild to moderate dementia can include causes the patient to lose memory of recent things such as item placement and many other small actions that occur in the day which can also lead to many mood changes in the patient. Although the patient experiences the symptoms, they typically prefer to keep some form of independence instead of depending on a caregiver or family member to do every little task for them. A severe case of dementia include more drastic symptoms like very drastic memory loss where the patient can forget important relatives as a whole, loss of communication and in some cases hallucinations or delusions. In the case of severe dementia, the patient typically relies on a caregiver which is someone who helps with daily tasks of the dementia patient. It is no secret that dementia is a living nightmare for an elder or relative of someone with dementia and the disease steadily increases over the years. The disorder or long term things that has happened to them, constantly experience changes in attitude or their mood, and it also makes it very difficult to plan task or remember many of the tasks they have planned for themselves. With that in mind, this will lead to the dementia patient needing many reminders or a specific person to aid them in daily tasks such as bathing, eating, medicine intake and so on.
Product Description

Thought Locker is a mobile application that will be used to help dementia patients maintain their independence through many of the application's features. Thought Locker aims to include features that help the patient keep up with their schedule, location of different items and contacts of different caregivers and family members. In addition to aiding the patients, the application also strives to aid the caregivers with monitoring the patient movements, monitoring the patient's tasks (rather daily or scheduled) and the location of the patients items.
2 Product Description

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2.1 nitty gritty of features

Thought Locker will be a mobile based application that will work across both Android and IOS devices. The application will have login authentication every time a
caregiver or user login to their designated account. Upon login, the patient will have a calendar that they can fully customize and include different task or appointments that they have upcoming. Patients can decide if they want to be notified on their scheduled tasks then they will be able to mark them as completed or missed appointments/tasks. Item registration and item location will be another part of the patients features which allows the patient to register items that they have trouble remembering the location of. Thought locker will also include a contact center for patients to contact family and caregivers all through the application if they need help.

Hardware

The caregiver side of the application will act as an admin for the patient’s side of the application. The care giver’s side of the application will decide what the patient can and cannot do through different settings dedicated to the caregiver in addition to having all of the abilities that the patient has. Some admin features that the caregiver will have includes sensors that helps the caregivers monitor the home and different items in the home of the patient. Registration and sensor deletion will also be accessible through the application. Depending on what happens while monitoring the patient, the caregiver has the option to make reports and take notes on different things that may occur with the patient, whether it is the whereabouts of the patient, if the patient has attended the appointments that were set and how many times they have lost an item or contacted different contacts. If the caregiver feels as though they want to remotely change something about the patients account, item
register or anything pertaining the patients account then they have the administrative control to do so.

END OF FEATURE PARAGRAPH A patient’s account will be fully customizable to fit their needs, many of t

2.2 hardware and software we gonna use

SOFTWARE

the software used to create the application will include PostgreSQL which is a relational database and it will also utilize MongoDB which is a non-relational database. The main programming language used to build this project will be JavaScript and we will use REACT which is a cross platform front end mobile application framework that allows us to make the User Interface design into a real thing. Node.Js is the JavaScript framework we will use to interact with the backend side of the application. The backend side of the application includes querying different databases so that we can intake and display different data received from users. All of the JavaScript testing will be created and tested using jest which is a Javascript testing framework. Our version control, issue tracking and
continuous integration will be handled through github. The packaging of numerous modules and libraries will happen through a containerization software called Docker

3 Identification of Case Study

Thought Locker is a comprehensive solution designed to cater to the needs of individuals with mild to moderate dementia, as well as their caregivers or family members. The primary goal of Thought Locker is to provide a platform that enhances the lives of dementia patients and eases the burden on their caregivers.

By offering an easy method for locating lost or misplaced items, Thought Locker grants patients and caregivers a sense of relief and independence. The application also collects and retains analytics, enabling caregivers to visualize and monitor patient habits, such as the frequency of misplaced items or instances when a door has been left open.

Furthermore, Thought Locker serves as a reminder system for patients, ensuring they take their medications on time and are aware of upcoming appointments. It also provides a direct line of communication for patients to immediately contact caregivers in case of urgent needs. This cost-effective solution is an attractive alternative to hiring full-time caregivers, making it more accessible to a broader audience.

Beyond individual patients and their caregivers, Thought Locker has potential benefits for medical facilities, insurance companies, Medicaid, and Alzheimer's research groups. By leveraging the data collected and insights gained from user interactions, Thought Locker can help inform future research and improve dementia care practices.
The prototype for Thought Locker will demonstrate various use cases, focusing on both dementia patients and their caregivers. For individuals with dementia, six users (three with mild dementia and three with moderate dementia) will be mocked up, showcasing features like item finding, scheduling, and contacting caregivers. Additionally, three caregiver or family member users will be mocked up, demonstrating the monitoring, assistance, and analysis capabilities offered by Thought Locker. By addressing the diverse needs of both patients and caregivers, Thought Locker aims to revolutionize the way dementia care is approached and delivered.

4 Glossary

[ TO BE DETERMINED ]
## 5 References


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