

Software Requirements Specification

for

Want2Remember

Version 2.0 approved

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10 December 2021

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Revision History

Name	Date	Reason For Changes	Version
Amy Guttman, Alexandra Strong	8/24/2021	Initial Access	1.0
Amy Guttman, Alexandra Strong	10/26/2021	Cross-Reference with Past SRS	1.1
Amy Guttman, Alexandra Strong	12/10/2021	First Draft Completed	2.0

1. Introduction

1.1 Purpose

This document shall:

1. Identify the requirements for the Want2Remember app by giving an in-depth explanation of the application and software, the purpose of the project, as well as an explanation of how users will interact with the services within the application.
2. Detail the requirements that must be met to deliver a complete and fully functional application.

1.2 Intended Audience and Reading Suggestions

This document is intended for the project manager, developers, and users of the software.

The suggested reading sections are as follows:

- Project Manager: To help understand the requirements and steer the development of the software; Recommended Reading: Sections 2 - 5
- Developers: To help understand the requirements that need to be met for the implementation of the software; Recommended Reading: Sections 3 - 5
- Users: To help understand basic information pertaining to the software; Recommended Reading: Sections 1.3, 2.1

1.3 Product Scope

Want2Remember is a mobile phone application to help those with memory issues - whether they are from brain injuries, Alzheimer's, or other cognitive impairments. The Want2Remember app shall provide the user templates to log memories, passwords, to-do lists, interactions, appointments, and other important things the user wants to remember. The user shall be able to record past, present, and future events and reminders. The software features shall help facilitate the user's ability to live independently, return to work, maintain social interaction, increase work efficiency, maintain personal safety, as well as any other needs that may come up in development. The app features shall also help facilitate caregiver needs, as well as improve medical support.

1.4 Definitions, Acronyms, and Abbreviations

Refer to Appendix: A

1.5 References

Title: Software Requirements Specification Template

Author: Professor Jiang Guo

Date: (Accessed) August 24, 2021

Title: React Native - The Practical Guide

Authors: Academind by Maximilian Schwarzmüller, Maximilian Schwarzmüller

Date: (First Accessed) August 31, 2021

<https://www.udemy.com/course/react-native-the-practical-guide/>

Title: Software Requirements Specification for Want2Remeber (Ver 2)

Authors: Kevin Benavente, Thomas Weatherell, Alejandro Salazar, Jesus Roman, Leon/Liangbin Huang, Jesus B. Osuna, Edward Ramirez, Tanya Kitchaiskulrit

Date: May 13, 2021

2. Overall Description

2.1 System Analysis

Cognitive impairments can be challenging for both those with the condition and their caregivers. A person may have trouble learning, remembering, concentrating, or making decisions, seen in a range of mild to severe. It can be a part of the cognitive decline in normal aging, such as in dementia or Alzheimer's, or it can be caused by a traumatic brain injury. There are more than 16 million people in the United States currently living with cognitive impairment (approximately 11% of the adult population).

The Want2Remember app is designed to help those with cognitive impairments and their caregivers. The application should provide reminders for things like medication, appointments, and daily routines, as well as store sensitive data like credit card information, and allow for records of past events and interactions.

The major hurdles associated with this project are:

- Learning the JavaScript mobile application framework, React Native
- Working as a group remotely during the COVID-19 pandemic

We were given access to the Udemy course “React Native - The Practical Guide” to guide us through the framework and language. To collaborate, we formed sub-teams to break down the project objectives into manageable pieces. We met virtually twice weekly for status updates and sprint retrospectives.

2.2 Product Perspective

While Want2Remember includes some features found in calendar-type and reminder-type applications, it is a unique product that will be brought to market. The application supports the user through additional features, such as cataloguing memories, organizing detailed interactions with other people, tracking moods that correlate to events, and other things like providing a more customized use of the software. These features are helpful for the users themselves and people who are assisting the users, such as healthcare workers or family members. The hope is by supporting the user through the creation of memories and reminders, that they become more capable, despite the challenges they face.

While the application is currently free as a beta test, we plan to add advertising, introduce premium features behind a paywall, and find other integrations to increase the value of the app and its revenue stream.

2.3 Product Functions

2.3.1 Home Screen

Provides initial landing site for users. Provides brief overview of all existing memories. Allows user to filter memory categories and navigate to other sub-screens.

2.3.2 Register User (TBD)

Allows the user to create an account.

2.3.3 Login/Logout (TBD)

Allows users to login and logout.

2.3.4 Create Screen

Allows user to choose from different entry templates.

2.3.5 Search Screen

Allows users to search through entries and display results.

2.3.6 Contacts Screen

Create contact or add existing contact to application.

2.3.7 Help Screen

Allows user to send feedback and report a bug.

2.3.8 Settings Screen

Allows user to change application settings, import or export app data.

2.3.9 Filters Screen

Allows user to filter through entries using keyword tags.

2.3.10 Create Generic Memory

Provides interface for user to edit and create generic memory from template.

2.3.11 Create Interaction

Provides interface for user to edit and create interaction from template.

2.3.12 Create Simple Memory

Provides interface for user to edit and create simple memory from template.

2.3.13 Create ToDo

Provides interface for user to edit and create to-do list from template.

2.3.14 Create Appointment

Provides interface for user to edit and create appointment from template.

2.3.15 Create Website Password

Provides interface for user to edit and store website password from template.

2.3.16 Create Credit Card

Provides interface for user to edit and store credit card information from template.

2.3.17 Create Simple Password

Provides interface for user to edit and store simple password from template.

2.3.18 Create Bank Account

Provides interface for user to edit and store bank account information from template.

2.3.19 Create Simple ToDo

Provides interface for user to edit and create simple to-do list from template.

2.4 User Classes and Characteristics

There are four user classes on Want2Remember:

- Free version user
 - A free version user with free access to Want2Remember. Limited access to features.
- Premium user (TBD)
 - A free version user does not have access to the premium features. In order for them to access the remaining features, they must purchase the premium package.
- Free version caregiver (TBD)
 - Family or medical professional with free access to Want2Remember. Limited access to features.
- Premium caregiver (TBD)
 - A free version caregiver does not have access to the premium features. In order for them to access the remaining features, they must purchase the premium package.

2.5 Operating Environment

The application will run on any mobile device that supports:

- iOS 7 or higher
- Android Oreo (8.0) or higher
- Web Development Planned

2.6 Design and Implementation Constraints

Developers must learn the following technologies prior to work on this project:

- JavaScript
- React Native
- NodeJS
- Redux
- Github
- JIRA & Agile Development Technology
- Firebase

2.7 User Documentation

2.7.1 Users will be able to access online tutorial videos on YouTube to view full walkthrough of the application.

2.8 Assumptions and Dependencies

2.8.1 User is expected to have a mobile device.

2.8.2 User device is expected to run on the minimum required operating systems (see section 2.5).

2.9 Apportioning of Requirements

- 2.9.1 Registration/Sign on
- 2.9.2 Medication
- 2.9.3 Customization
- 2.9.4 Caregiver support
- 2.9.5 Medication Tracker template
- 2.9.6 Mobile advertisement
- 2.9.7 Premium features

3. External Interface Requirements

3.1 User Interfaces

The system shall provide users to access to the features of Want2Remember. There are four user interfaces that shall accompany this app: a free version user interface, a premium user interface (TBD), a free version caregiver interface (TBD), and a premium caregiver interface (TBD). The free versions shall have access to most features, while the other features shall be accessed once payment is processed.

- 3.1.1 The user interface shall present the Home Screen upon initial access.
- 3.1.2 The system shall provide a uniform look and feel between all pages. Headings, banners, fonts, and buttons shall follow the same style guide.
- 3.1.3 All screens shall include dynamic header component and bottom navigation bar.
 - 3.1.3.1 Bottom navigation bar shall include Home, Create, Search, and Contacts.
 - 3.1.3.2 Back button will be in the top right to return the user back to the Home Screen.
- 3.1.4 Home Screen (default screen) shall show brief overview of all existing memories.
 - 3.1.4.1 Help, settings, and filters will be in the top left corner for navigation.
 - 3.1.4.2 The Memory navigation bar shall show “All Memories” by default, with other subcategory options listed in the scroll bar to the left.
 - 3.1.4.3 Below this navigation bar, the preview of the memory shall show with date, title, category, and other relevant summary information.
 - 3.1.4.4 A button at the bottom right shall allow the user quick access to “Create,” leading them to the Create Memory Screen.
- 3.1.5 Create Screen shall show all memory templates.
 - 3.1.5.1 Memory tiles shall be labeled and color-coded in an accessibility-friendly way.
 - 3.1.5.2 Clicking on a memory tile shall lead the user into a custom template.
- 3.1.6 Search Screen shall let users filter through their memory tiles
 - 3.1.6.1 Search bar.
 - 3.1.6.2 When a user searches, the results shall display below the search bar and be scrollable.
- 3.1.7 Contacts Screen shall show all contacts in scrollable view.
 - 3.1.7.1 Add Contact shall be in the top right corner
 - 3.1.7.2 Search bar.
 - 3.1.7.3 Quick view shall include name, quick links to contact, and associated memories.
 - 3.1.7.4 Clicking on View More shall allow the user to see full details of that contact.
- 3.1.8 Settings Screen
 - 3.1.8.1 The settings options shall allow the user the ability to import and export JSON format memories.
 - 3.1.8.2 The user shall be able to create and reset their secured PIN.
 - 3.1.8.3 The user shall be able to send feedback.

3.2 Hardware Interfaces

No special hardware interface requirements.

3.3 Software Interfaces

iPhone Software: iOS 7 or higher

Android Software: Oreo or higher.

Other Software Dependencies: React Native uses the React API, React-Native dimensions API enables responsiveness for stable sizing throughout any hardware. Wix API is used for Calendar components used in the software.

3.4 Communications Interfaces

Not applicable at this time.

4. Requirements Specification

4.1 Functional Requirements

4.1.1. Home Screen

- 4.1.1.1. The system shall display created memories on the home screen
- 4.1.1.2. The system shall display memories within a category selected by the user (Filter by category)
- 4.1.1.3. The system shall display memories within a type selected by the user (Filter by memory type)
- 4.1.1.4. The system shall display memories within a time frame selected by the user (Filter by time/date)
- 4.1.1.5. The system shall allow the user to create a new memory
- 4.1.1.6. The system shall allow the user to select a memory to view

4.1.2. Create Screen

- 4.1.2.1. The system shall allow the user to select from premade memory templates
- 4.1.2.2. The system shall allow the user to give memories a title
- 4.1.2.3. The system shall allow the user to select a category for a memory
- 4.1.2.3.1. The system shall allow the user to create a PIN for secured memories if not already created
- 4.1.2.4. The system shall allow the user to select a date for a memory
- 4.1.2.5. The system shall allow the user to select a time for a memory
- 4.1.2.6. The system shall allow the user to select a reminder time for a memory
- 4.1.2.7. The system shall allow the user to select a status for a memory
- 4.1.2.8. The system shall allow the user to enter tags for a memory
- 4.1.2.9. The system shall allow the user to enter a location for a memory
- 4.1.2.10. The system shall allow the user to select people for a memory
- 4.1.2.11. The system shall allow the user to add a custom field to a memory
- 4.1.2.11.1. The system shall allow the user to enter a title to a custom field
- 4.1.2.11.2. The system shall allow the user to enter content to a custom field

4.1.3. Edit Screen

- 4.1.3.1. The system shall allow the user to edit a memory
- 4.1.3.2. The system shall allow the user to delete a memory

4.1.4. More Details Screen

- 4.1.4.1. The system shall allow the user to view the details of a screen

4.1.5. Contacts Screen

- 4.1.5.1. The system shall display contact quick looks
- 4.1.5.1.1. The system shall display associated memories
- 4.1.5.1.2. The system shall allow the user to call a contact
- 4.1.5.1.3. The system shall allow the user to text a contact
- 4.1.5.1.4. The system shall allow the user to email a contact
- 4.1.5.2. The system shall allow the user to search for a contact

- 4.1.5.3. The system shall allow the user to update contacts
- 4.1.6 Search Screen
 - 4.1.6.1 The system shall allow the user to search through the database with the search bar.
 - 4.1.6.2 The system shall display scrollable results below the search bar.
- 4.1.7 Settings Screen
 - 4.1.7.1 The system shall allow the user the ability to import/export JSON format memories.
 - 4.1.7.2 The system shall allow the user to create and reset their secured PIN.
 - 4.1.7.3 The system shall allow the user to send feedback.
- 4.1.8. Backend (TBD)
 - 4.1.8.1. The system shall allow synchronization between caregiver and care receiver data
 - 4.1.8.2. The system shall encrypt user data

4.2 External Interface Requirements

Not applicable.

4.3 Logical Database Requirements

- 4.3.1 Types of information
 - 4.3.1.1 User Data
 - 4.3.1.1.1 User identification number
 - 4.3.1.1.2 Username
 - 4.3.1.1.3 Password
 - 4.3.1.1.4 Account type (free version, premium, caregiver, etc.)
 - 4.3.1.1.5 Secure PIN
 - 4.3.1.1.6 Credit Card information
 - 4.3.1.1.7 Bank Account information
 - 4.3.1.2 Memory Data
 - 4.3.1.2.1 One-to-one relationship between user data and memory data
 - 4.3.1.2.2 Title
 - 4.3.1.2.3 Category
 - 4.3.1.2.4 Files
 - 4.3.1.2.5 Status
 - 4.3.1.2.6 Tags
 - 4.3.1.2.7 Date
 - 4.3.1.2.8 Time
 - 4.3.1.2.9 Reminder Date
 - 4.3.1.2.10 Reminder Time
 - 4.3.1.2.11 Reminder Scheduled Time
 - 4.3.1.2.12 Reoccurrence
 - 4.3.1.2.13 Location
 - 4.3.1.2.14 People
 - 4.3.1.2.15 Emoji

- 4.3.1.2.16 Description (Title, Content)
- 4.3.1.4 Contact Data
 - 4.3.1.4.1 One-to-one relationship between user data and contact data
 - 4.3.1.4.2 Many-to-many relationship between contact data and memory data (foreign key between People and Contact Name)
 - 4.3.1.4.3 Name
 - 4.3.1.4.4 Phone Number
 - 4.3.1.4.5 Email
 - 4.3.1.4.6 Address
 - 4.3.1.4.7 Company
 - 4.3.1.4.8 Photo

See **Appendix B** for more information.

4.4 Design Constraints

- 4.4.1 Effectively displaying information and options
- 4.4.2 Accommodations for different formfactors (mobile, tablet, different operating systems)
The application shall accommodate different devices.
- 4.4.3 Cost to operate the database, minimize data-driven calls, while optimizing functionality from data called

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The application can remain offline. It shall synchronize to the cloud when internet access is available. The application does not have cloud access currently, but this functionality will be added in an update.

5.2 Safety Requirements

To ensure the safety of personal information, users should never share account details. We highly suggest resetting your password every three months to protect your account from unwanted activity. If any problem arises concerning your account, credentials, or transactions, please consult with our support team. We are happy to assist our users, please email your issues/concerns or call our support team for help.

5.3 Security Requirements

At this phase of development, security protocols have not been implemented. All user data is currently stored locally, on the user's device. When there is migration of data from local to cloud, data security protections shall be in place. To ensure the application is HIPPA compliant, we shall use RSA end-to-end encryption to protect any data transfer. The user's secure PIN shall be checked on the server, not through the device.

5.4 Software Quality Attributes

This software shall be available on mobile and tablet devices for iOS and Android OS. This application shall be regularly maintained. Feedback shall be addressed to improve the user experience. All software will be optimized for older devices, as well as offline first functionality.

5.5 Business Rules

Care Receiver: Has full CRUD abilities within the application.

Caregiver: Has specified CRUD abilities.

6. Legal and Ethical Considerations

6.1 Legal considerations

- 6.1.1 We must ensure the security and privacy of any stored user data. User data and files in Secured Memories must be encrypted.
- 6.1.2 User data should only be shared with trusted caregivers.
- 6.1.3 User data should only be shared with the user's consent.
- 6.1.4 A user's location should only be visible only to those users/caregivers that the user has elected to share their location with.

6.2 Ethical considerations

- 6.2.1 The purpose of our app is to assist individuals with cognitive disabilities. To best serve the needs of our customers and fulfil the purpose of our app, every aspect of the user experience must be designed with this in mind. Therefore, while designing the UI, we must keep in mind that the average user may have cognitive impairments, and we must make appropriate design choices to ensure accessibility to every screen of the app.
- 6.2.2 Because our app is in the realm of healthcare, we as programmers must acknowledge that if the app does not function properly, this could negatively affect the healthcare experience of the user, which could potentially have life-threatening consequences. Therefore, we must always keep in mind that users may be relying on our app as a crucial service that is part of their personal healthcare program.
- 6.2.3 We must always respect the privacy of our users.

Appendix A: Glossary

API: Application Programming Interface

CRUD: Create, Read, Update, and Delete

GUI: Graphical User Interface

HIPAA: Health Insurance Portability and Accountability Act

iOS: Apple's mobile operating system

JSON: JavaScript Object Notation

JS: JavaScript

MacOS: Apple's Macintosh operating system

OS: Operating System

PIN: Personal Identification Number

RSA Encryption: public key/private key encryption method

Appendix B: Analysis Models

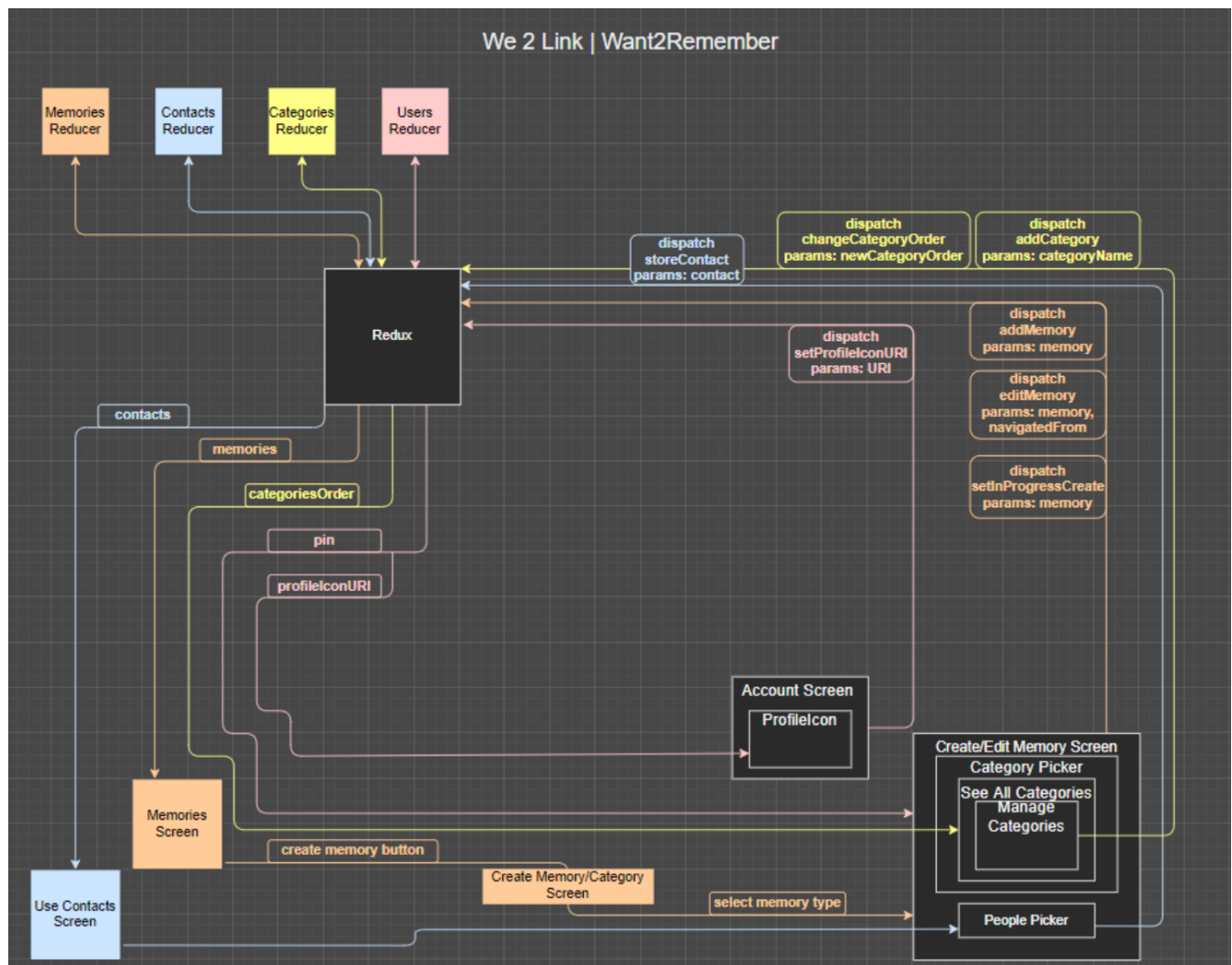


Figure 1: Redux Flow Diagram

Appendix C: To Be Determined List

1. Register User
Allows the user to create an account.
2. Login/Logout
Allows users to login and logout.
3. Premium user
A free version user does not have access to premium features. For access to the remaining features, they must purchase the premium package.
4. Free version caregiver
Family or medical professional with free access to Want2Remember. Limited access to features.
5. Premium caregiver
A free version caregiver does not have access to the premium features. For access to the remaining features, they must purchase the premium package.
6. Backend Support
The system shall allow synchronization between caregiver and care receiver data. The system shall encrypt user data using standard RSA.