

1. Project Concept and Description (2 points)

My web application will be a journaling service for dementia prevention. Users will record daily activities as journal or diary entries and my web application will use AI to generate questions based on the journal entries. Users will then exercise their active recall skills to answer these questions (either in a multiple choice or text entry format). The aim of this app is to potentially prevent dementia and memory loss of personal events. While the role of brain games in dementia prevention has been studied, journaling as in combination with these brain games has not. Users will be able to see their results and potentially access statistics based on their progress.

Key features:

An interface to record their daily entries

Users will be able to record their daily activities in a text box and submit them to their entries into a database that can be viewed later.

AI question generator

AI will generate questions based on journal entries, models will be trained to generate questions that directly reference the journal material, not to speculate at all.

Quiz game

Users will be asked questions based on their journal entries, with varying levels of specificity.

Results page (fact checker/ anti gaslighting)

After the user finishes asking questions their correct and incorrect answers will be displayed along with the relevant entries that the AI questions reference.

Nice to have:

Sign in

Users will be able to sign into their account for security purposes.

Statistics page

Users could see how their memory is progressing or digressing

Prompts

To encourage users to write detailed entries, my application could provide prompts to help users recall parts of their day.

2. Target Audience and User Stories (2 points)

My intended audience is users who are at risk of dementia and other degenerative memory loss diseases. This audience may be users who are adults in their 50's-80's who are interested in preventing memory loss.

As an adult at risk for alzheimers, I want to have an easy daily activity, I can do to potentially prevent dementia.

As an adult , I want an opportunity to journal my daily events, so that I can reference past events and emotions.

As a child of a parent with alzheimers, I want to provide my parents with an application that is easy to use and helps them remember past events.

As a healthcare provider for patients with alzheimers, I want to be able to reference memory data, so that I can track patient memory less progression.

My application will meet these user needs by being an intuitive interface that guides users through the process of journaling. Users will be able to track their learning through their profile which will require a sign in. The stored data could also be potentially accessed by a physician. When users interact with the journal/quiz they are exercising their recall skills which may prevent dementia. The questions will come directly from their own journal entries, helping them remember key moments in their daily life, and serving as a more relevant knowledge pool.

3. Technical Architecture Plan (2 points)

Frontend technologies (React components, libraries, hooks)

Backend/data management approach (Firebase/Firestore, APIs)

Authentication strategy (if applicable)

External APIs or services you plan to integrate

Frontend:

- Components

 - Sign in/ Sign up

 - Firebase Authentication

 - Storing of user entries

Journal Entry Interface

Text input

Quiz Question Generator

Fetches questions from the AI API

Quiz Interface

Shows question, one at a time

Results

Shows incorrect and correct answers

Will show the original journal material referenced

Hooks:

useState

For storing user inputs and results

useEffect

Will trigger functions to fetch API results

Backend:

Firestore will be used for user data storing. The stored data will be in their user profile. Questions generated for the quiz will use the data from the user profile.

API:

Gemini 1.5 Flash

I will use prompt engineering to guide how the questions are presented to the user.

Output will also make direct references to the journal material.

4. Wireframes (3 points)

Sign Up

Rewind

Welcome to Rewind

Sign Up

Name

Username

Password

Go

Signin

Rewind

Sign In

Username

Password

Go

New user

Rewind

Hey Courtney! Let's start your first Journal entry — just share anything about your day. Later, we'll turn it into a little memory game to help keep your mind active!

Text Entry

Go

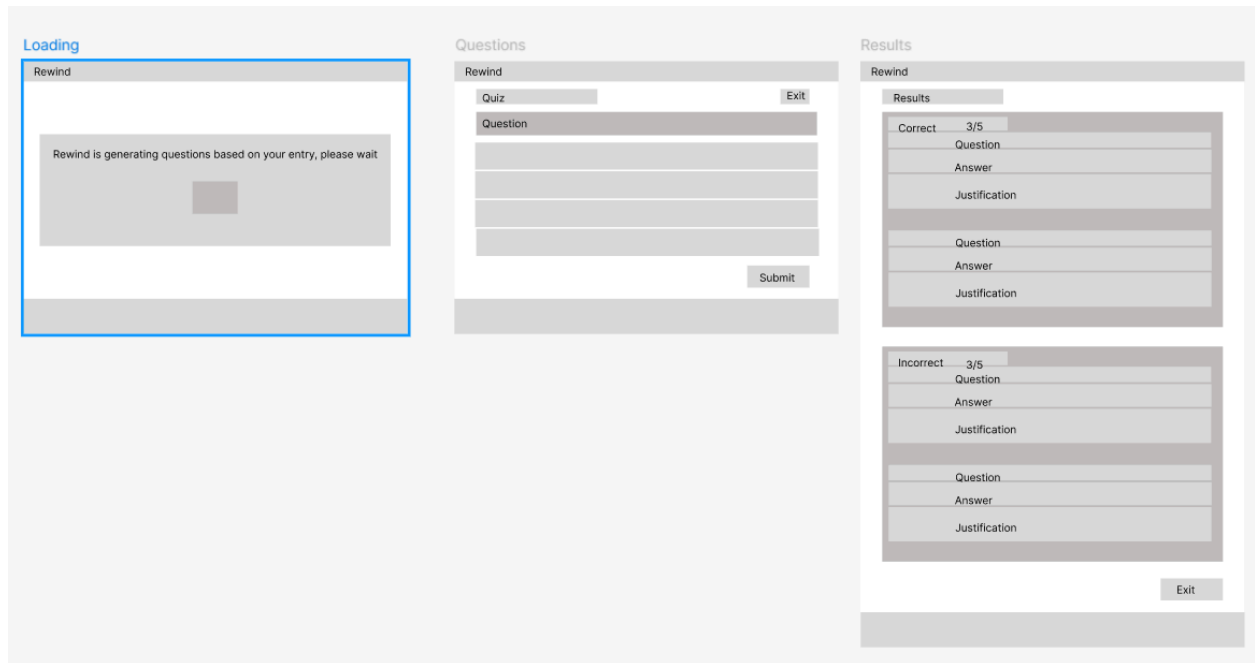
Returning user

Rewind

Hi Courtney! It looks like today's entry is still waiting — take a moment to reflect when you're ready.

Text Entry

Go



5. Timeline and Milestone Plan (1 point)

Week 1 5/15-5/18: Make pages and outline action plan further

Week 2 5/19- 5/24: Work on API calling and interface

Have journal entry and quiz pages finished, begin authentication

Week 3 5/25-End of Quarter: Debug

Finish authentication