Lab 2 - QuitIt

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1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to define the requirements for the QuitIt mobile application. It outlines the features, functionalities, constraints, and overall scope of the project, serving as a guide for the development team and stakeholders throughout the project lifecycle.

1.2 Scope

QuitIt is a comprehensive recovery platform designed to assist individuals seeking help with addiction and to offer support to those who wish to help the individual. The platform offers personalized support by connecting users to in-person resources, tracking their progress, providing daily motivation, and fostering an online community. QuitIt features an AI-powered recovery coach for personalized guidance and an emergency contact feature for crisis situations. This application addresses the societal problem of addiction by providing a centralized tool that streamlines recovery resources and support. The goal is to provide comprehensive, easy-to-use tools all in one place to help individuals stay on track and achieve lasting recovery.

1.3 Definitions, Acronyms, and Abbreviations

AI-Artificial Intelligence- Coach: A virtual coach providing personalized guidance, coping skills training, and support within the app.

API-Application Programming Interface: A coordinated technological interaction system for building and interacting with software applications and potentially hardware linked systems. Used typically for backend logic and external service integration.

Argon2: A key derivation function used for securely hashing passwords.

Axios: A promise-based HTTP client for making requests from the frontend to the backend API.

Docker: A platform for developing, shipping, and running applications in containers.

Express.js: A web application framework for Node.js, used in the backend.

Geolocation Mapping: Identification process for determining user's real-world location by device location.

GUI-Graphical User Interface: The visual interface of the application that users interact with.

JWT-JSON Web Token: A standard used to create access tokens for authentication.

MySQL: A relational database management system used for storing structured data.

Node.js: A JavaScript runtime environment used for building the backend of the application.

Outscrapper: A tool used to aggregate data, specifically for treatment center information.

Quantifiable Metrics: Measurable data options to track progress such as milestones achieved.

React Native: A framework for building cross-platform mobile applications using JavaScript and React.

React Native Maps: A library for integrating map components into React Native applications.

Redux: A state management library for JavaScript applications, used with React Native.

Render: A cloud platform used for hosting the backend server.

Secure Platform: Digital environment which uses encryption and other security elements to prioritize protection of user data.

Supabase: An open-source Firebase alternative used here for database management

Support Networks: A collective of peers, friends, professionals, family members, mentors, and others who provide emotional and practical assistance to recovery.

Treatment Centers: Facilities that offer care for individuals who have addiction, including therapy, rehabilitation programs, and detoxification.

1.4 References

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1.5 Overview

The prototype for QuitIt demonstrates the majority of features planned for the real-world application, serving as a proof of concept for the comprehensive recovery platform. Key functionalities such as locating rehabilitation centers and support groups, the AI Support Coach, emergency safety features, and the discussion forum are fully implemented in the prototype. Features like full support for a wide range of addiction types are partially implemented, while

daily inspirational quotes and detailed recovery progress tracking are planned for the final product but not included in this prototype iteration.

The QuitIt prototype is implemented to facilitate practical testing, stakeholder presentation, and early risk mitigation. It utilizes aggregated data (e.g., via Outscrapper) for demonstrating resource location and relies on user interaction to test features like the AI Coach and forum. This allows for evaluation of core functionalities and the user experience before full-scale development.

2. Overall Description

QuitIt is a mobile application designed to assist in addiction recovery. It serves as a consolidated platform providing users with tools to connect with in-person support, find recovery resources, track their progress, and access useful experiences from a community forum. The application aims to be user-friendly, accessible, and prioritizes security and privacy. It integrates resources like treatment centers and support groups, uses quantifiable metrics for progress tracking, and employs geolocation for resource connection. QuitIt addresses challenges such as limited support, inconsistent accountability, and fragmented resources often faced in recovery.

2.1 Product Perspective

The QuitIt prototype serves as a proof of concept that demonstrates core functionalities planned for the full application, focusing on connecting users with resources and support. The prototype implements features like geolocation for finding nearby treatment centers and support groups, an AI coach for guidance, emergency contact access, and a community discussion forum.

The QuitIt prototype is developed as a cross-platform application using React Native and Expo, allowing deployment to both mobile platforms iOS/Android and potentially web browsers

from a single JavaScript codebase. The prototype's architecture utilizes Docker for containerization, ensuring a consistent environment across development and deployment. One container might run the backend services Node.js/Express.js, while another could manage the SQL database within Supabase. Docker helps keep the frontend, backend, and database components cohesive and organized.

Development is managed using VSCode and Android Studio in conjunction with Git/GitHub for version control and collaboration. For the prototype, data sources include aggregated information for treatment centers potentially using Outscrapper and APIs like Google Maps for location services, alongside user-generated data within the forum and AI interactions. This data supports the demonstration of the application's core functionality, facilitates testing, and aids in demonstrating risk mitigation strategies.

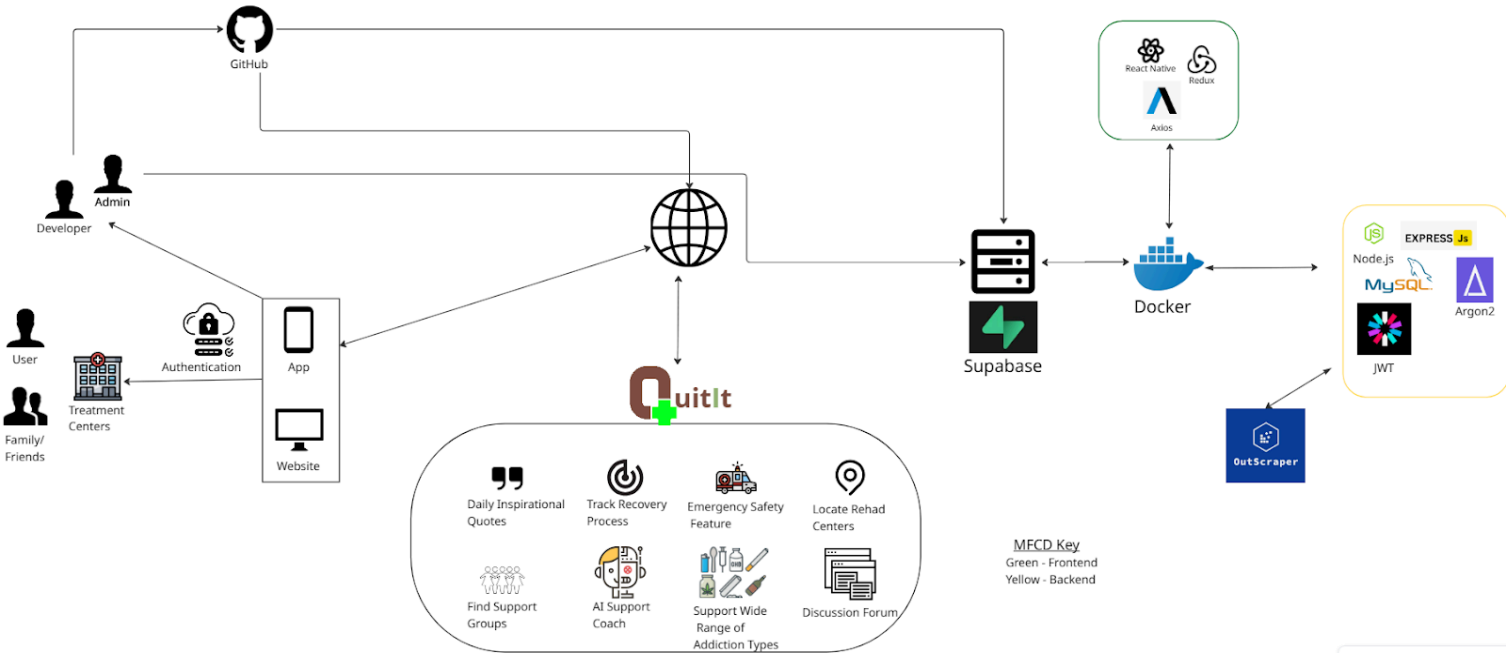

Figure 1: Main Functional Component Diagram

2.2 Product Functions

QuitIt presents a range of functionalities designed to advance recovery on a secure platform. The key real-world product features are largely included in the prototype to demonstrate core capabilities. This app integrates a comprehensive array of resources including treatment centers, support groups, and a dedicated online forum; these resource location and forum features are fully implemented in the prototype. While the full product aims to use quantifiable metrics for tracking progress related to a recovery plan, this specific feature is not implemented in the current prototype, though user accounts and basic interactions are functional.

Geolocation mapping is utilized to connect users with necessary resources like centers and groups, and this mapping capability is fully implemented in the prototype. These features are implemented to combat common challenges faced in recovery such as limited support networks, consistent accountability, sustained motivation, and dealing with fragmentary resources.

With the prioritization of user safety, QuitIt maintains an effective emergency contact feature, which is fully implemented in the prototype. This allows users to connect quickly with emergency services or designated contacts directly through the app, offering a potential lifeline in crisis situations.

In addition to these features, QuitIt includes an AI-powered recovery coach, which is fully implemented in the prototype. This virtual coach provides personalized guidance and support, offering features such as identifying potential crisis risks, providing useful resources, and engaging in scenario/questionnaire conversations. While the prototype demonstrates support for core addiction types, full support for a wide range of specific addiction types is only partially implemented compared to the final product goal. The AI Coach is designed with empathy, using evidence-based practices and prioritizing user safety, serving as a valuable tool for motivation

and coping skills within the prototype and the final product.

Table 1

QuitIt Feature Product/Prototype Implementation

Feature	Prototype	Product
Daily inspirational quotes	Not Implemented	Fully Implemented
Track recovery progress	Not Implemented	Fully Implemented
Emergency safety features	Fully Implemented	Fully Implemented
Locate rehab centers by location	Fully Implemented	Fully Implemented
Find support groups	Fully Implemented	Fully Implemented
AI Support Coach	Fully Implemented	Fully Implemented
Support for wide range of addiction types	Partially Implemented	Fully Implemented
Discussion Forum Functionality	Fully Implemented	Fully Implemented

2.3 User Characteristics

The QuitIt application is designed for a diverse group of users, primarily centered around the journey of addiction recovery. The prototype focuses on core functionalities accessible to the primary user groups, while the full product envisions features catering to a broader ecosystem of support. The main user roles are defined as follows:

Addiction Recovery Seeker (Primary User):

Definition: This is the core user group: individuals actively seeking assistance with overcoming various types of addiction. They may be at any stage of their recovery journey, possess varying levels of technical skill, and likely prioritize privacy, security, and ease of access to resources.

Goals & Needs: Their primary goals within the app are to find relevant and accessible in-person support such as treatment centers and support groups, utilize tools for motivation and guidance like the AI Coach, connect with peers for shared experiences in the forum, and have immediate access to help via the emergency contact feature in moments of crisis. In the full product, they would also track recovery milestones.

Prototype Interaction: This user directly interacts with the implemented features: searching for resources via geolocation, engaging with the AI Coach, participating in the discussion forum, and setting up/using the emergency contact feature.

Family and Friends (Supporter User):

Definition: This group includes individuals who are supporting a loved one through addiction recovery. They may be seeking information, ways to provide effective support, or connection with others in similar situations.

Goals & Needs: They aim to better understand addiction, find resources beneficial to their loved one, learn supportive strategies (potentially guided by the AI coach), and gain insights or share experiences within the community forum. Future product versions might include features allowing them to participate in coordinated support with user consent.

Prototype Interaction: They can utilize the discussion forum for information and connection, and interact with the AI coach for guidance on providing support.

Support Group Member (Community User):

Definition: This role often overlaps with the other two but specifically refers to any user actively participating in the QuitIt online community forum.

Goals & Needs: Seeking peer support, sharing personal experiences and insights related to recovery, finding encouragement, and contributing to a supportive online environment.

Prototype Interaction: Primarily involves reading and contributing posts within the discussion forum functionality.

Potential Future User Roles:

As the platform evolves, other stakeholders may become users with specific roles, including Mental Health Professionals, Treatment Center Providers who might manage resource listings or interact with consented users, and administrators overseeing community health or corporate wellness programs.