

Lab 1- QuitIt

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Collaborative Outline

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1 Introduction

Introduce the CS 411 product and the approach to demonstrating its characteristics through prototyping (essentially an abstract). This section should be approximately one page in length. Summarize the societal problem with some reference/date support. Outline problem and needed solution characteristics. Introduce your product by name as the solution. (Combine with Intro 1.1 Societal Problem ,1.2 Solution). (one page length minimum)

- Introduction to the Societal Problem:
 - Overview of the addiction crisis and its widespread impact on individuals
 - Mention of studies or data highlighting of rates of addiction
 - Discuss barriers to accessing recovery services
 - Emphasis on the need for a streamlined user friendly solution
- Problem characteristics
 - Challenging to find timely, relevant help during the recovery phase
 - Fragmented nature of current solutions
 - Isolation of individuals due to lack of personalized tools
- Introduction of QuitIt
 - Brief description of QuitIt as a solution and explain how it centralizes recovery tools
 - QuitIt is a mobile addiction recovery platform integrating multiple essential tools into one application.
 - Highlight the key benefits of QuitIt
- Closing

- Outro explaining apps potential to guide individuals and loved ones towards lasting recovery with ease and support

2 QuitIt Product Description

Provide a top-level description of CS 411 product for the average reader. Provide a summary of the solution — and its goals and objectives. This section should be one paragraph minimum.

- Quitit is a mobile app for addiction recovery
- Supports monitoring, accountability, and collaboration
- Engages families and treatment centers in the process
- Features communication forums, compliance tracking, and personalized recommendations
- Provides an innovative and scalable solution to recovery challenges
- Aims to improve recovery outcomes and strengthen support networks
- AI-Powered recovery coach, offering personalized guidance
- Includes content of valuable experience to help families with addiction

2.1 Key Product Features and Capabilities

What does it do? What is significant/unique/innovative about it? What does it accomplish?

Describe how this solves the problem.

- Real-Time Monitoring: Tracks user movements to ensure compliance and safety during recovery
- Communication Forum: Provides a platform for collaboration between users, families, and treatment centers

- Recommendations: Suggests nearby treatment centers and support groups based on user location and feedback
- User Onboarding: Simplifies registration with personalized recovery plans and treatment goals
- Administrator Tools: Enables treatment facilities to monitor compliance and provide tailored recommendations.
- AI Personalized Guidance: Adaptable to user data for helping with different risks and determining useful resources.
- AI Communication: Offers communication including scenario and questionnaire conversation based on data to help users.
- Safety: App resources, like recommendations and AI elements are configured with empathy and user safety prioritized.

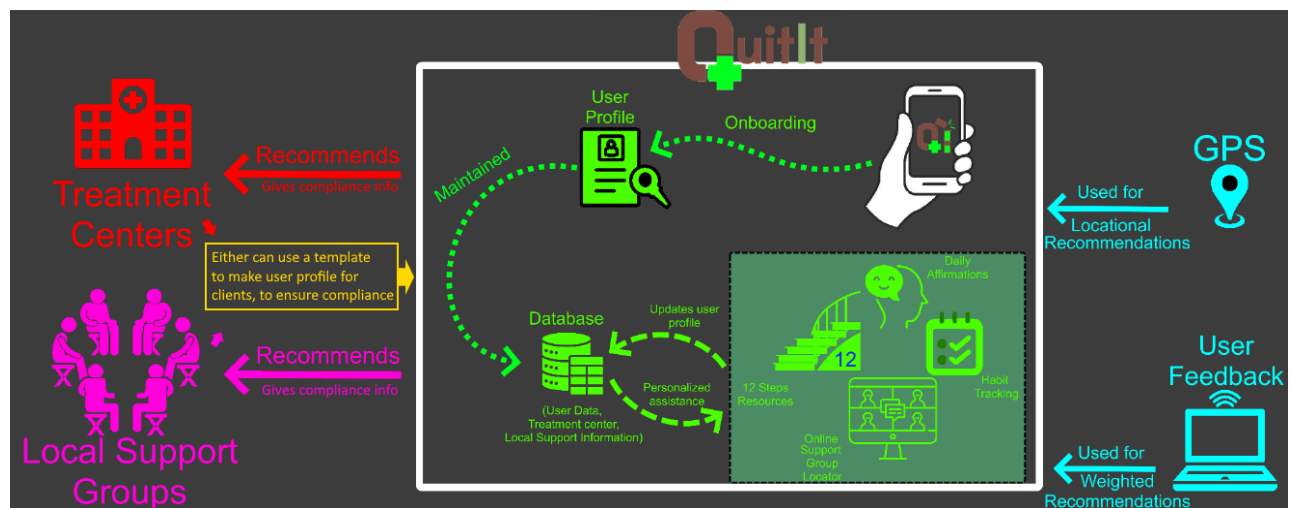


Figure 1: Main Functional Component Diagram

2.2 Major Components (Hardware/Software)

QuitIt is composed of two main components. One of our components is our smartphone application. The other component is our server infrastructures which will manage the aggregation and processing of data pertaining to the user information, preserve records of previous rehab facilities and addiction clinics visited, current addictions under treatment, support groups, addiction clinics, motivational quotes, and user feedback. This comprehensive system ensures seamless integration between users, support networks, and recovery services, fostering a more effective and personalized addiction recovery process. To support AI-powered recovery coaches, the server infrastructure will require processing abilities for natural language and machine learning tasks. These are necessary for personalized guidance, analysis of user data, and offering relevant recommendations in real-time.

2.2.1 *Hardware and Software*

The user should be able to operate our application on most smart mobile devices. Otherwise our application will require a physical server(s) to contain our database.

GUI/App:

- Allows for searches of database to find rehab centers/addiction clinics and/or support groups
- Recommends closest center for specific addictions
- Allows user to find contact information of clinics more easily
- Gives daily inspirational quotes
- Provides access to a built-in discussion forum that will allow for users to communicate in group discussions, contact their support groups, and help foster a sense of community.

- Provides the interface for interacting with the AI-powered recovery coach
- Enables customization of AI coach's interaction style and preferences

Backend Framework:

- Utilizes Node.js as the backend framework to handle API requests and manage the application logic
- Manages the integration of external services such as location APIs for finding nearby rehab centers
- Handles processing and analysis of user data for the AI coach

Database:

- Track user information
- Keep records of past rehab centers/addiction clinics visited and current addictions being treated
- Compile lists of support groups, addiction clinics, and possible addictions
- Compile lists of inspirational quotes
- Keep track of user feedback
- Maintains a knowledge base of evidence-based recovery information and resources for AI coach to access

Operating System:

- The application is designed to be platform-independent or based on Linux server-side deployment using Docker for containerization, ensuring scalability and easy deployment
- Maintains server resources needed for natural language processing and machine learning tasks

Security Measures:

- Implements encryption for sensitive user data
- Regular backup protocols are in place for data recovery
- Security measures to protect AI coach's algorithms and model from unauthorized modification

3. Identification of Case Study

- Intended user - treatment facilities, the patient, family or friend of the patient who is suffering from addiction.
- Intended Use - to monitor recovery progress, foster accountability, and enhance collaboration.
- Potential Future Users - healthcare organizations, and insurance companies seeking to support recovery efforts.

4 Glossary

Accountability: the state of being responsible for actions taken or to be taken.

Addiction: condition of having a persistent, obsessive, physical, or mental need for a certain substance, item, or activity.

AI Coach: A virtual coach within the QuitIt app that provides personalized guidance and support to recovering addicts and their loved ones.

Database: a systematic grouping of structured data, or information, usually kept electronically in a computer system

End User: the individual or customer who utilizes the QuitIt app.

Main Functional Component Diagram (MFCD): diagram that shows the essential parts of a system in graphic form, emphasizing their main purposes and interactions.

Recovery check-in: a routine meeting, typically led by a support group facilitator or therapist, where an addict in recovery discusses their present level of sobriety, any obstacles they may be encountering, and their progress in sustaining their recovery, enabling continued accountability and support.

Recovery plan: a structured, individualized document detailing the methods and tactics a person will use to control their addiction and stay sober

Relapse: restarting the use of addictive substances or engaging in addictive activities that one had previously quit or controlled.

Support Group: community-based gatherings where individuals come together to discuss their experiences related to a shared problem with the aim of giving those in recovery a sense of belonging and support.

Support Network: family, friends, and professionals who provide emotional and practical assistance.

Treatment facility: Units, wards, departments, and treatment facilities specifically created to treat substance use disorders

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