SE Project Report

Addiction Control Application

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1. Abstract

Substance use disorders (SUDs) are a serious public health issue that negatively impact people, families, and communities. Traditional SUD treatment options can be expensive and difficult to obtain, especially for those who live in remote areas or without insurance. We suggest creating Addiction Control, a smartphone app for managing SUDs, to solve these issues. Users of the app will have access to self-assessment tools, educational resources, and peer support communities, as well as individualized help and resources for beating addiction. The software will also link with wearable technology to track and monitor progress, enabling users to set objectives and evaluate their rehabilitation progress. Addiction Control seeks to increase the accessibility and effectiveness of SUD treatment by utilizing the comfort and portability of mobile technologies.

2. Project Scope

The scope of this project is an application-based system that enables the drug addicts to get rid of their addictions. It also allows professionals/therapists to interact with the application and help the addicts.

This Application replaces the traditional technique of addicts going to the rehabilitation centers to get rid of their drug addiction. It enables the user to get treatment at his place just through using the Addiction Control App. Same for the therapists who can just give treatment using the application.

3. System Purpose

3.1 Users

Addicts:

It includes the addicts as well as the individuals who want to help addicts.

Therapists:

It includes cognitive, behavioral, psychologists and therapists helping drug addicts.

Admin Team:

Responsible for all the users account management.

Marketing Team:

Responsible for the App marketing in the application.

IT (Information Technology) Team:

Responsible for the application management, working on updates etc.

Chat Bots

AI based automated bots responsible for customer support.

3.2 Location

The Application will be available for all the users who have internet access and smart phones. This application will specifically target the audience in the subcontinent.

Application team will also be able to access the app from any location and will also be able to get restricted access in the application through specific password scheme.

3.3 Responsibilities

The main responsibilities of the Addiction Control App include:

1. Provide users a chance to get rid of their addictions (user may be an addict or helping an addict).
2. Provide therapists a chance to help addicts through the application from any location.
3. Allow specific access to the application based on the type of user (Addict or Therapist).
4. Responsive and attractive GUI (Graphical User Interfaces) for the users to get a larger audience.
5. Chat Bots for the user queries.
6. Auto Appointment system for scheduling appointments between addicts and the therapists.

7. User health tracker for addiction level purposes.
8. Daily update quiz for addicts and therapists.
9. Motivational and cognitive lectures/videos available for addicts.
10. Password protection scheme for user's account.
11. Will be available on every platform (i.e., play store, app store, Microsoft store for web application and a website)

3.4 Need

This application will make a significant change in society helping addicts to get rid of their addictions and the individuals who want to help addicts (their friends, relatives etc.) and therapists to help addicts from any location.

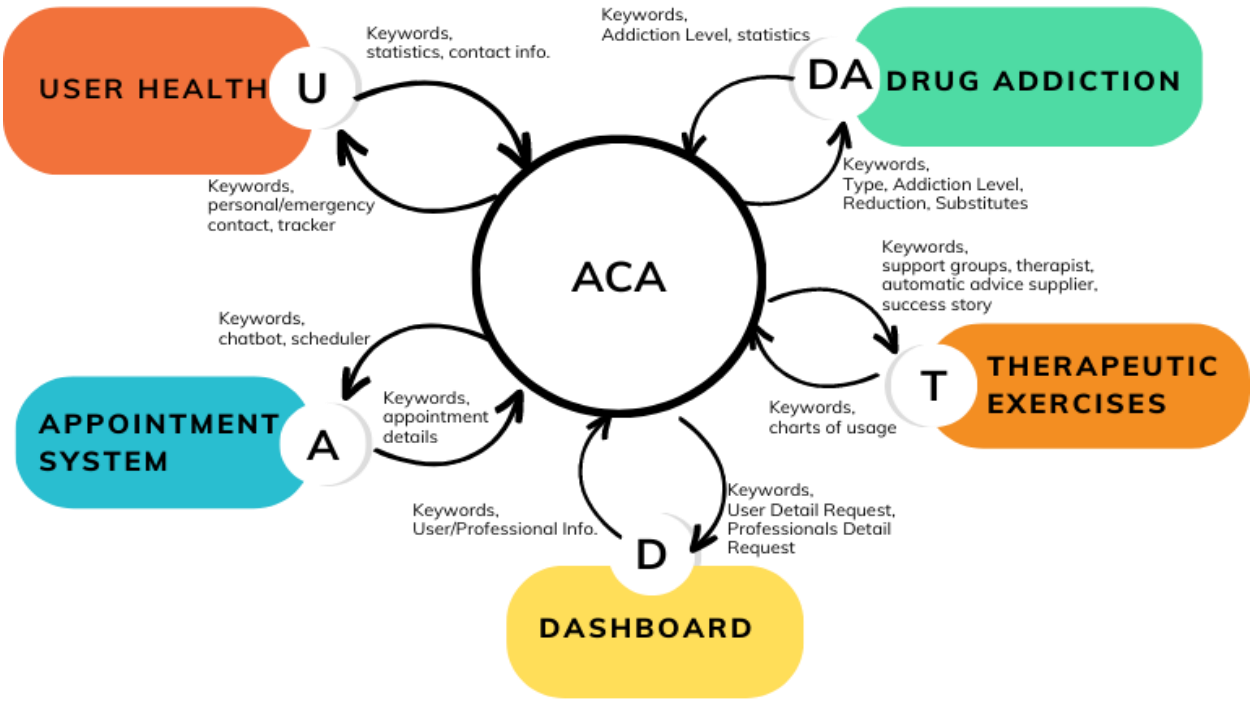
4. Functional Requirements

- Registrations for two kinds of users: those who have an addiction, and those who wish to help addicts. (professionals)
- Anonymous registration is only available for addicts.
- Addiction is drug related, determine drug, type, and brand; (main objective)
- Quiz to determine level of addiction
- Depending on level offer the considerable reduction per week, substitutes, solutions
- Track user health
- If the user's health is out of the ordinary then prefer an emergency contact to the user, if further concerning responses given then contact nearest hospital. (Location needed)
- Have emergency option available to contact professional for user
- Track app usage per week (the modules used by user)

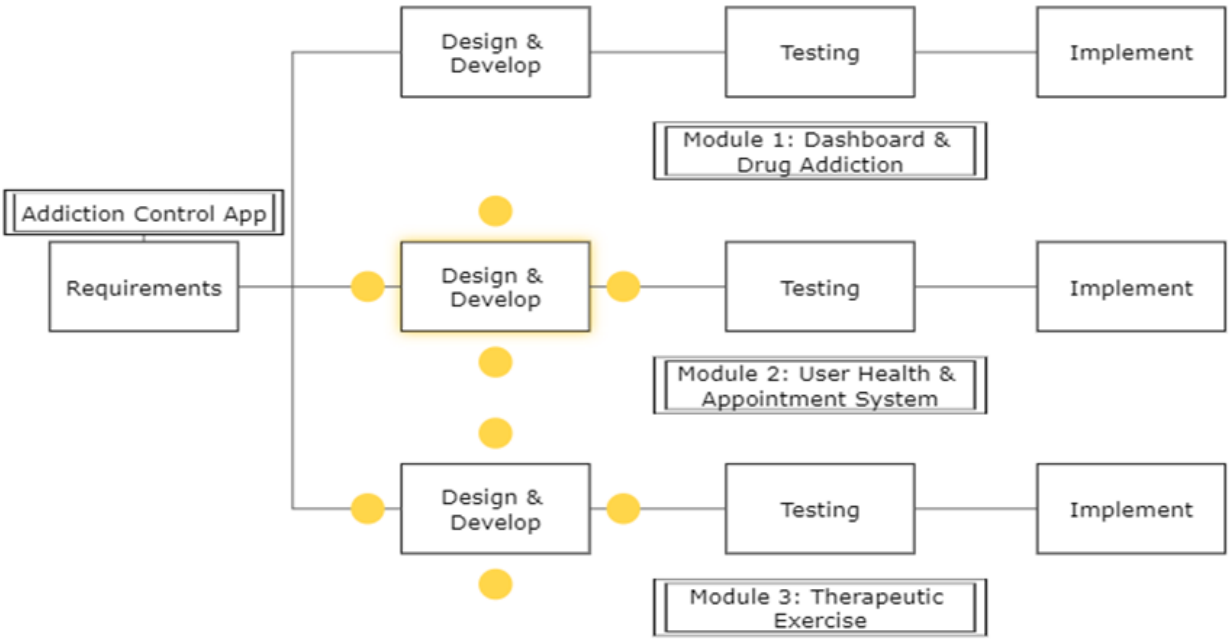
- Modules for addiction breaker like: Online support group, Online therapist, Advice Supplier (dep. On addiction), In-depth detail about the addiction in question, role-play dialogue system, help centers, healthier habits.
- Reward system for completing daily tasks.
- Professionals' authenticity must be identified. They cannot ask for personal information about the addict like name, location, family information, etc. Such keywords will be picked up by the system and will be investigated. As well as anti cyber harassment must be observed.
- Professionals may contact addicts once every 3-4 weeks
- Security and Confidentiality of user maintained, especially in case of drug addictions that are considered illegal in their area
- Show the user the progress using charts/graphs etc.

5. Context Model

A Context model of the systems in place for the ACA (Addiction Control App) is shown below:



6. Process Model: ACA Incremental Model



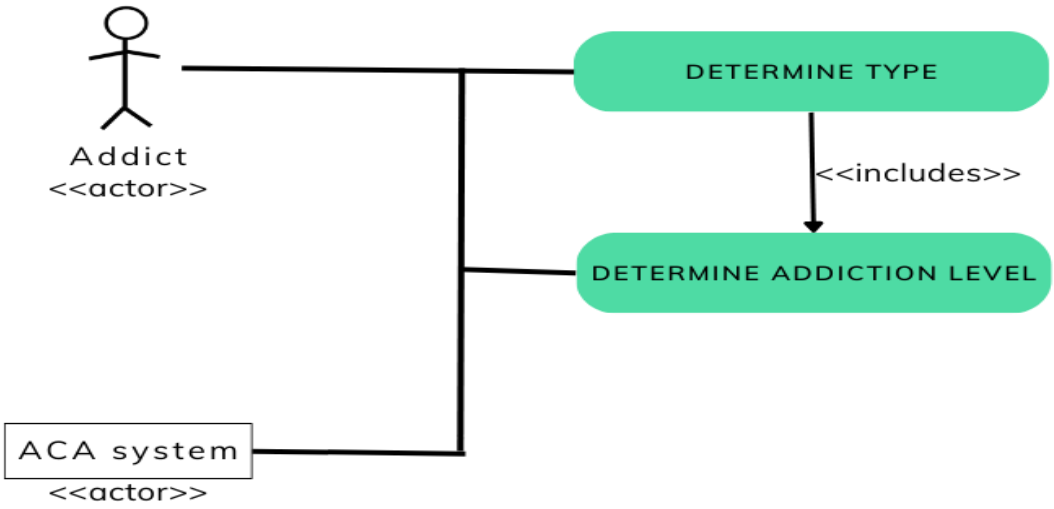
An incremental model is a software development approach in which a system is developed in a series of small, incremental releases, rather than trying to deliver a complete, complex system all at once. This approach allows for more flexibility and can make it easier to test and refine the system as it is being developed. That is why we selected the incremental model for the **Addiction Control App.**

To create an incremental model for the modules we have described, we will start by developing the dashboard and drug addiction module first. Once this is complete, we will then move on to the user health and appointment system module. Finally, we will add the therapeutic exercise module as the final step.

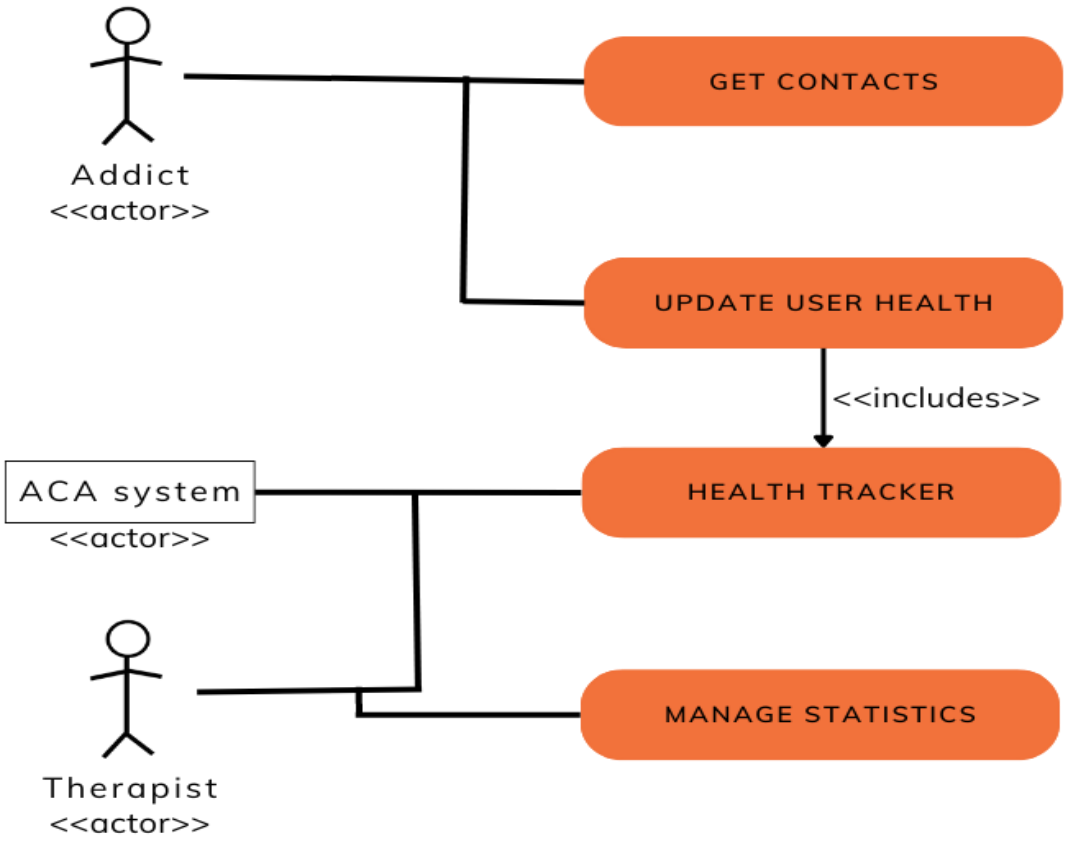
It's important to keep in mind that each module will need to be tested and refined before moving on to the next one. It will also be helpful to prioritize the modules based on importance or dependencies, and to consider how the different modules will work together to achieve the overall goals of the system.

7. Use Case Diagrams

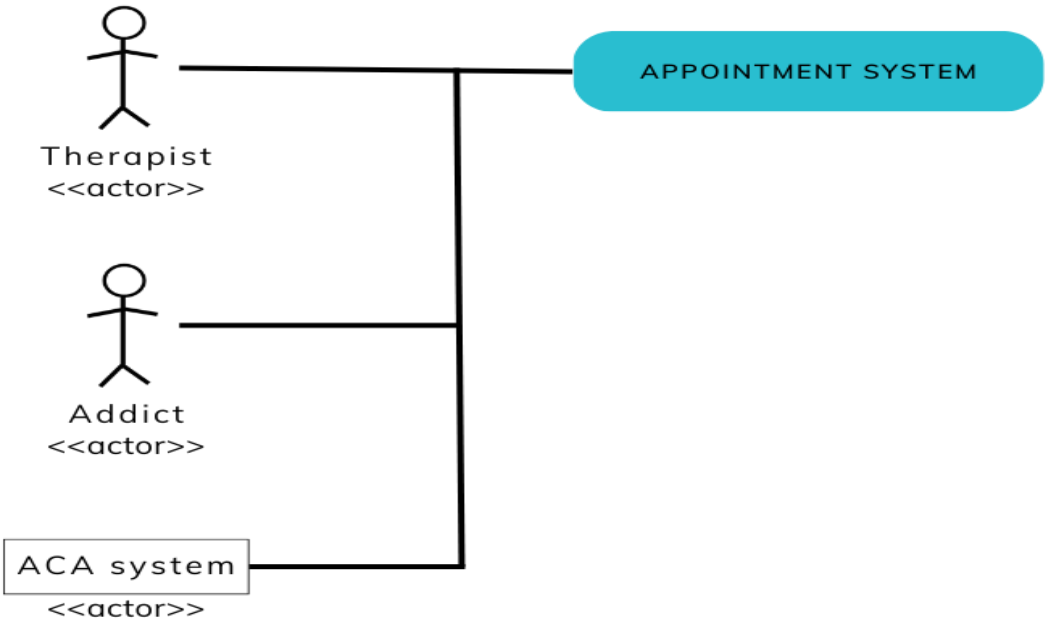
7.1 Drug addiction (DA)



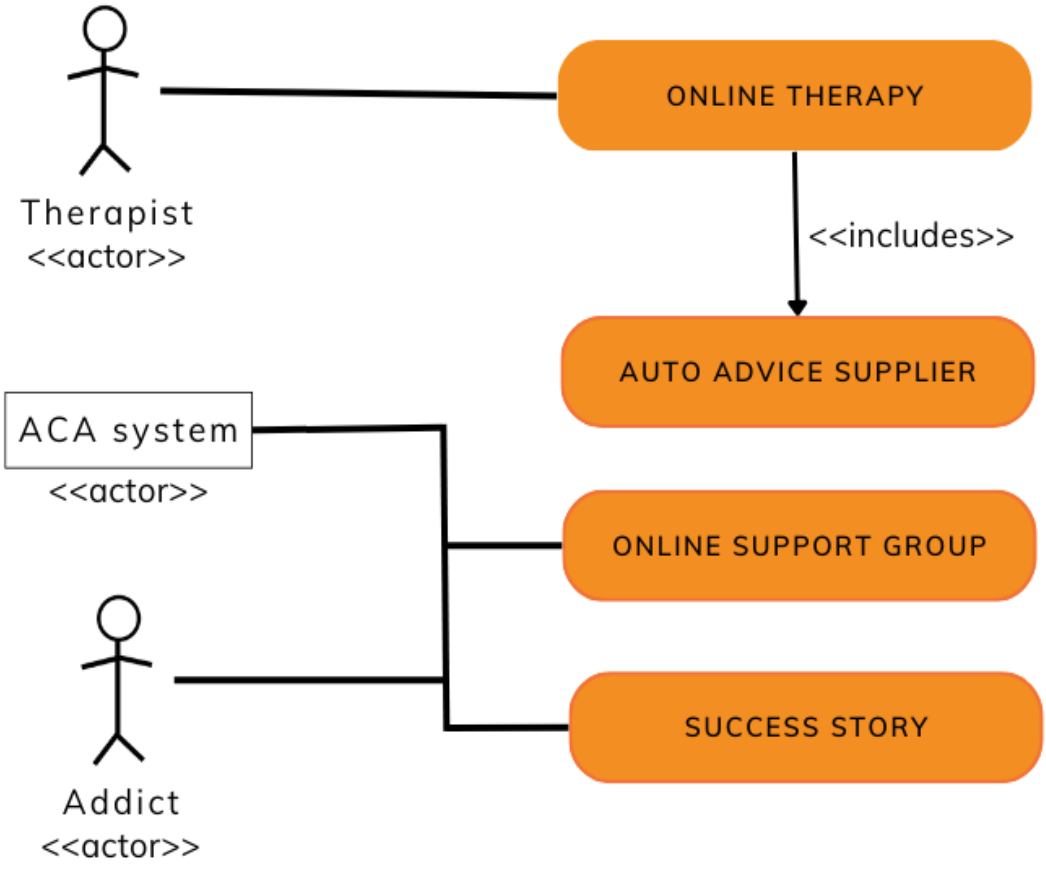
7.2 User health (U)



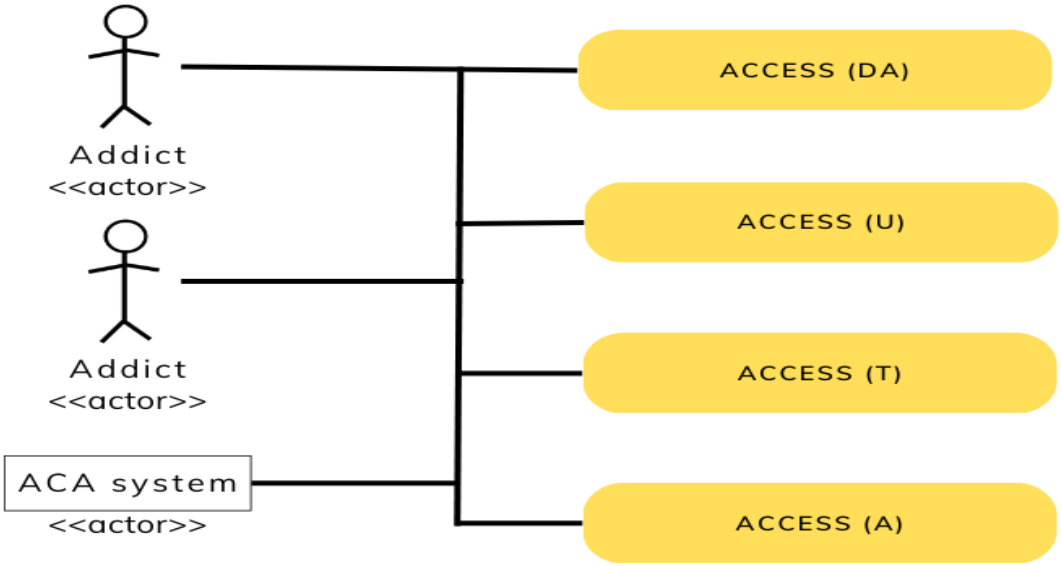
7.3 Appointment system (A)



7.4 therapeutic exercises (T)



7.5 Dashboard (d)



7.6 Use cases

The use cases extracted from the above diagrams are as follows:

- **DA:** 1. Determine Type

  2. Determine Addiction Level

- **U:** 3. Get Contacts

  4. Update User Health

  5. Health Tracker

  6. Manage Statistics

- **A:** 7. Appointment System

- **T:** 8. Online Therapy

  9. Auto Advice Supplier

  10. Online Support Group

  11. Success Story

- **D:** 12. Access (DA)

13. Access (U)

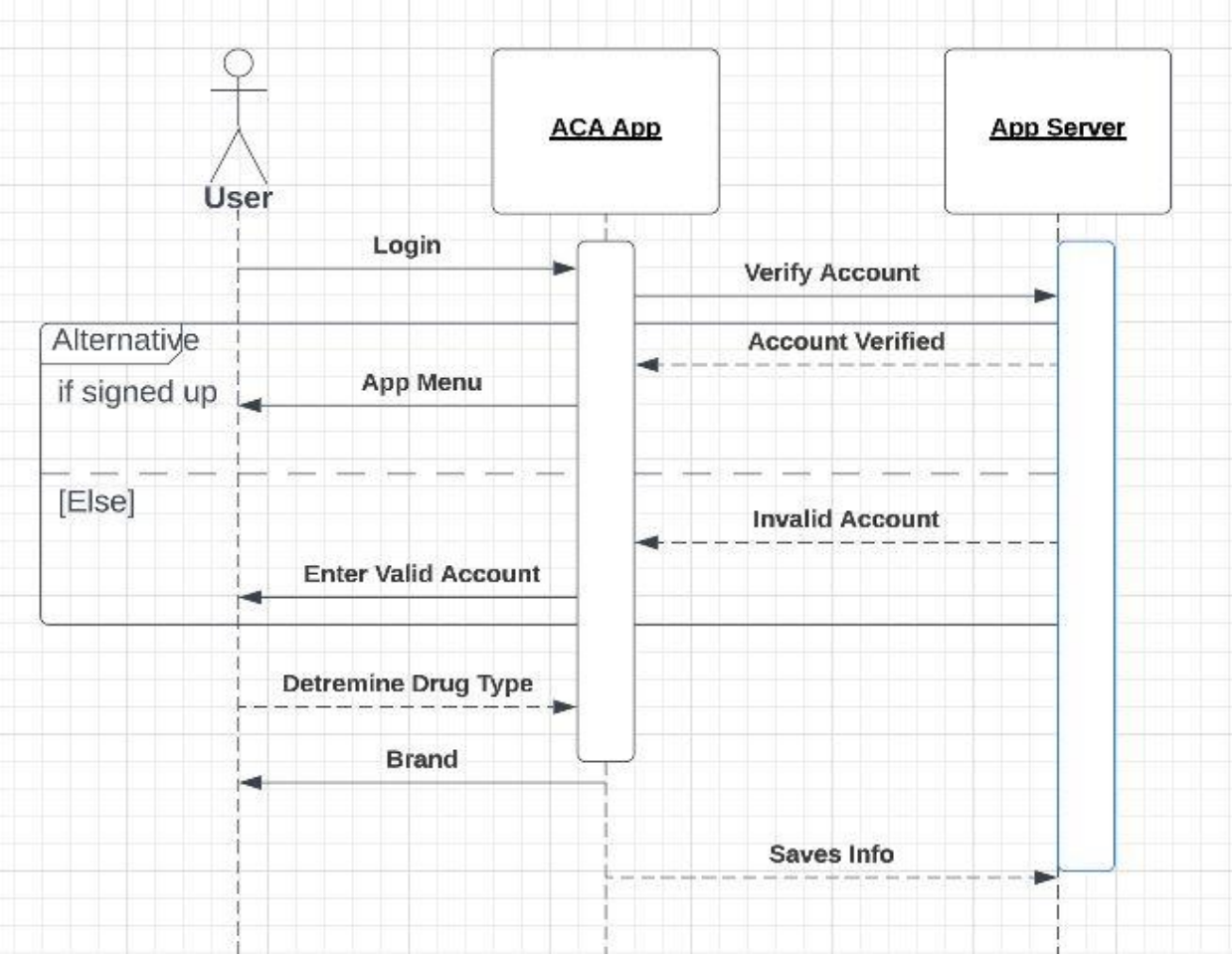
14. Access (A)

15. Access (T)

8. Sequence Diagrams

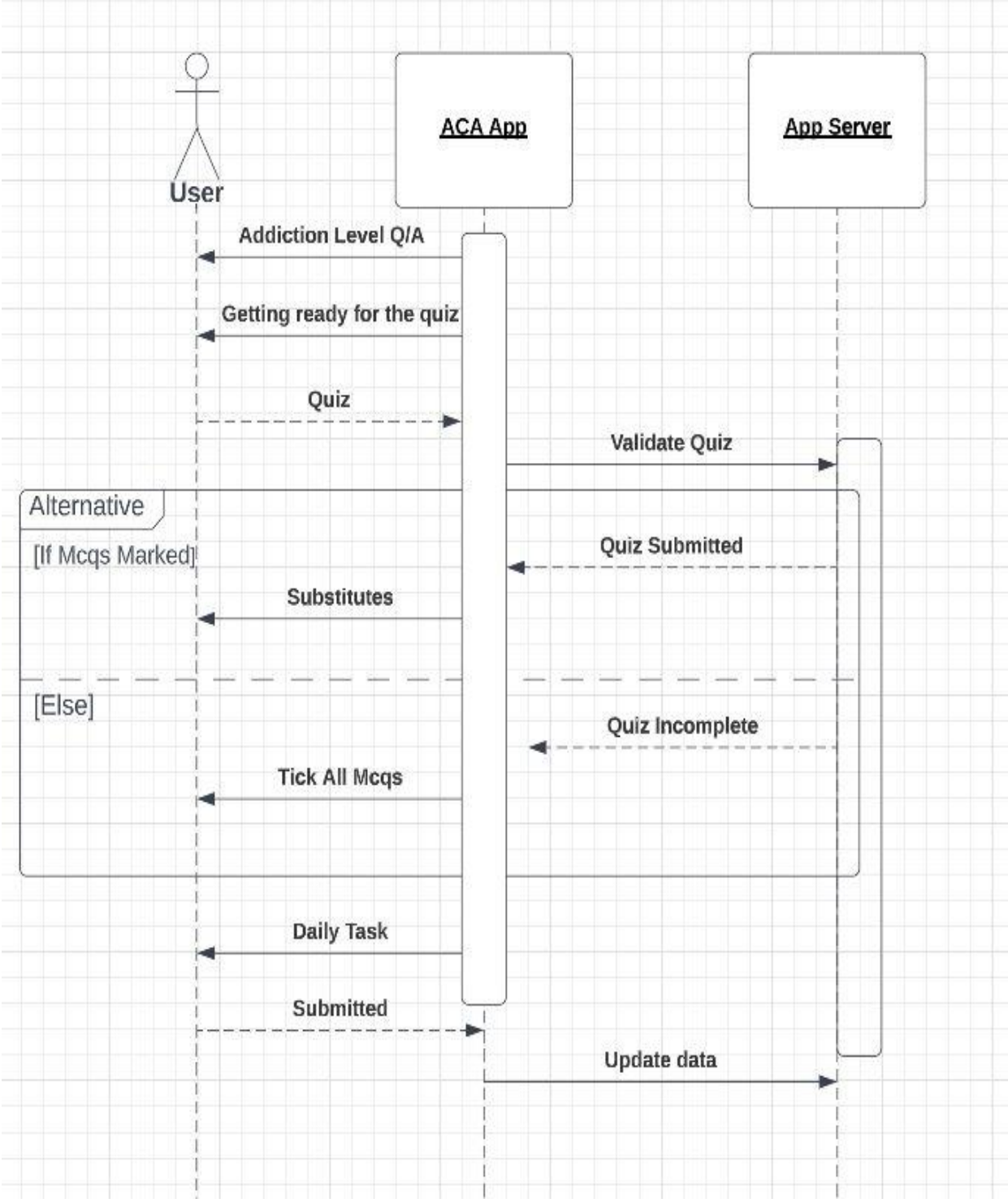
8.1. (DA): Determine Type

The application will help users identify the specific type of addiction they are struggling with.



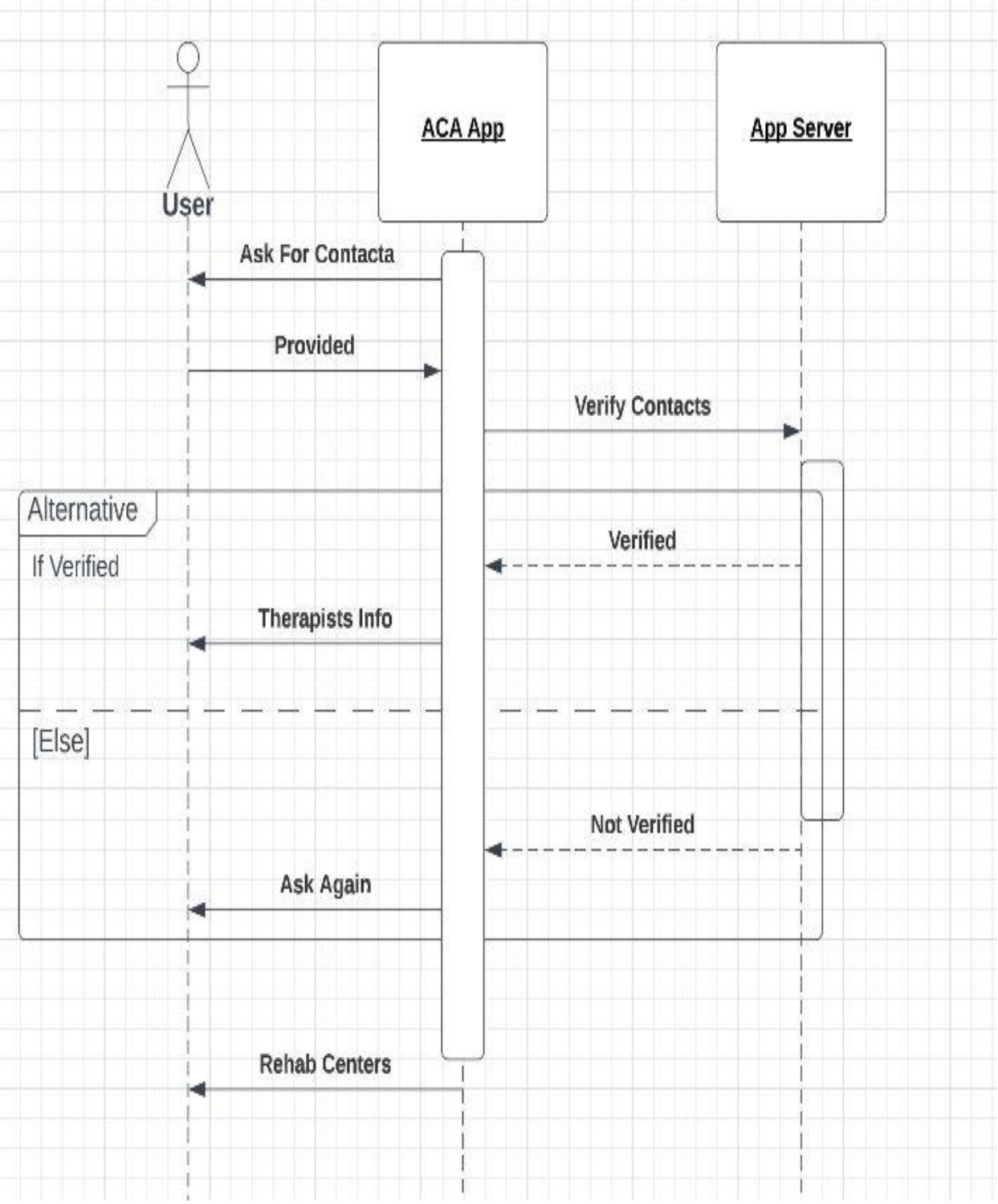
8.2 (DA): Determine addiction level

The application will assess the severity of the user's addiction and provide personalized recommendations for treatment.



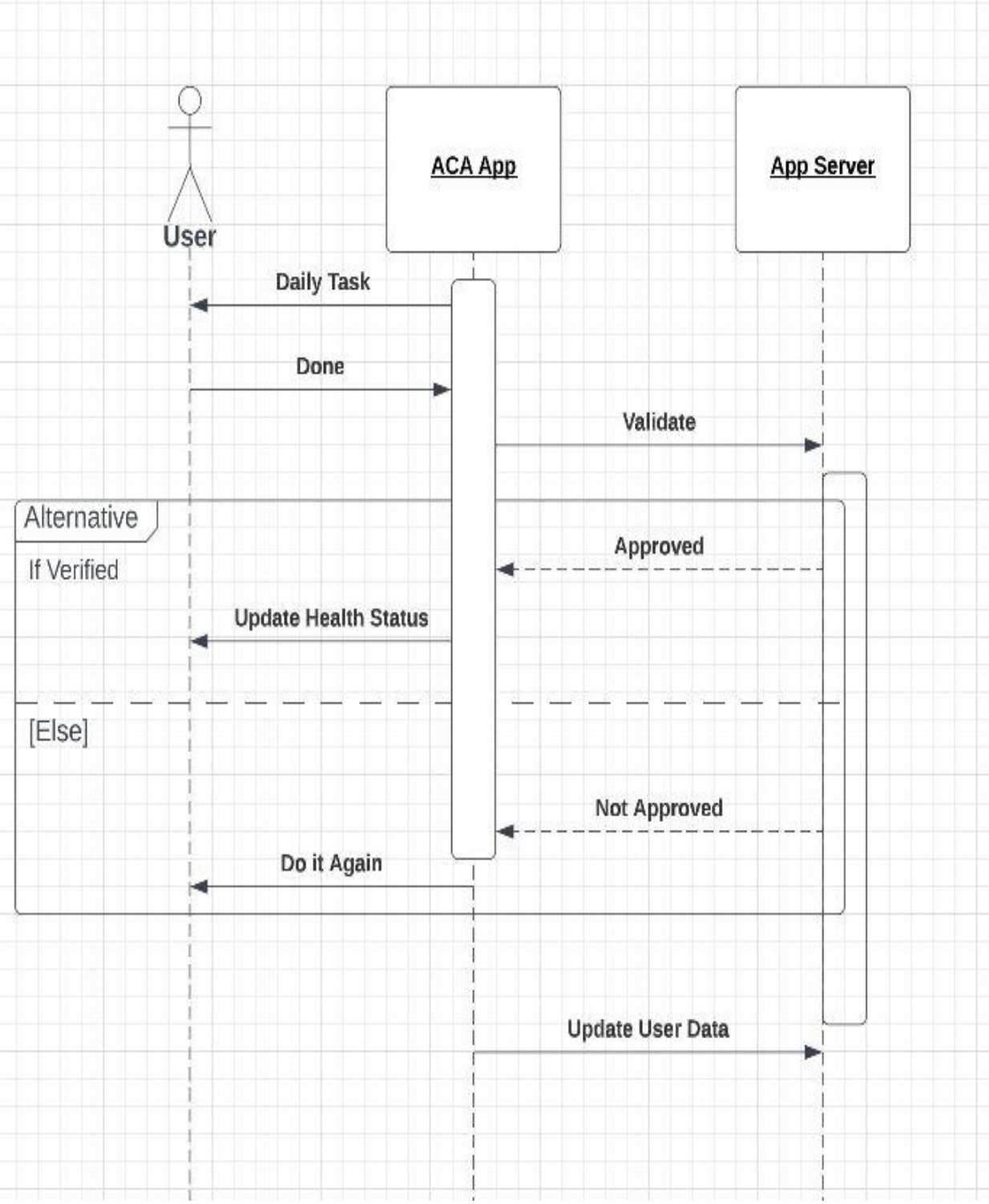
8.3 (U): Get Contacts

The application will provide users with a list of local resources and support organizations for addiction treatment.



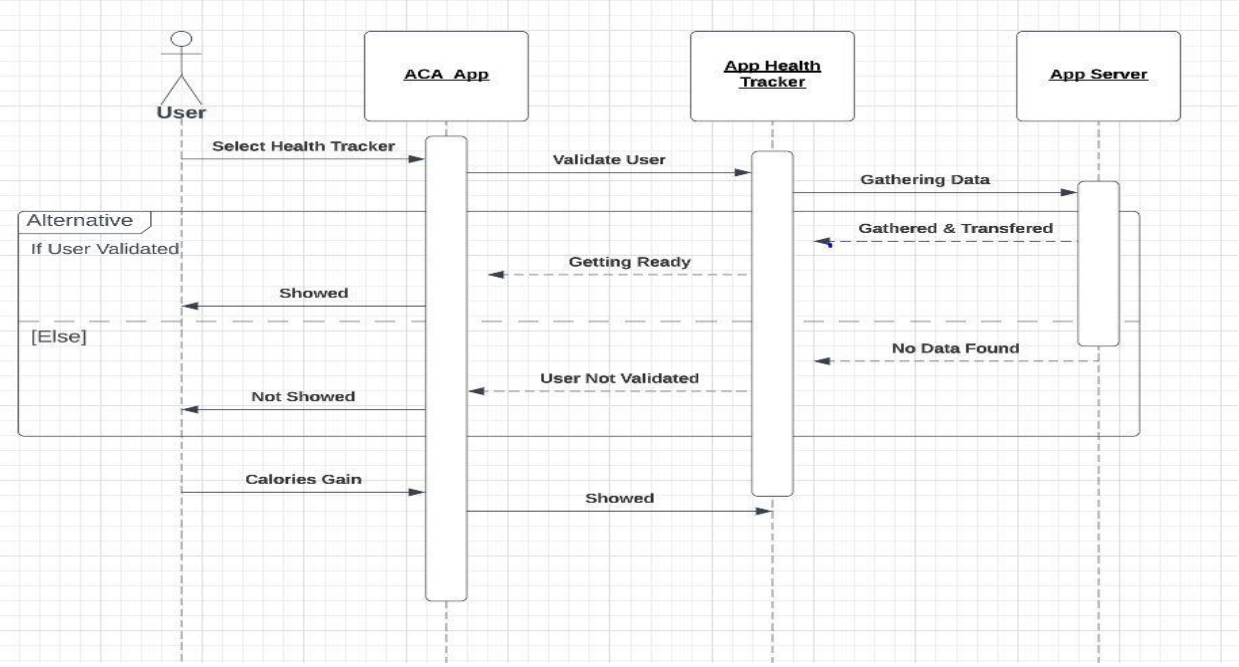
8.4 (U): Update User Health

Users will be able to track and update their physical and mental health status within the application.



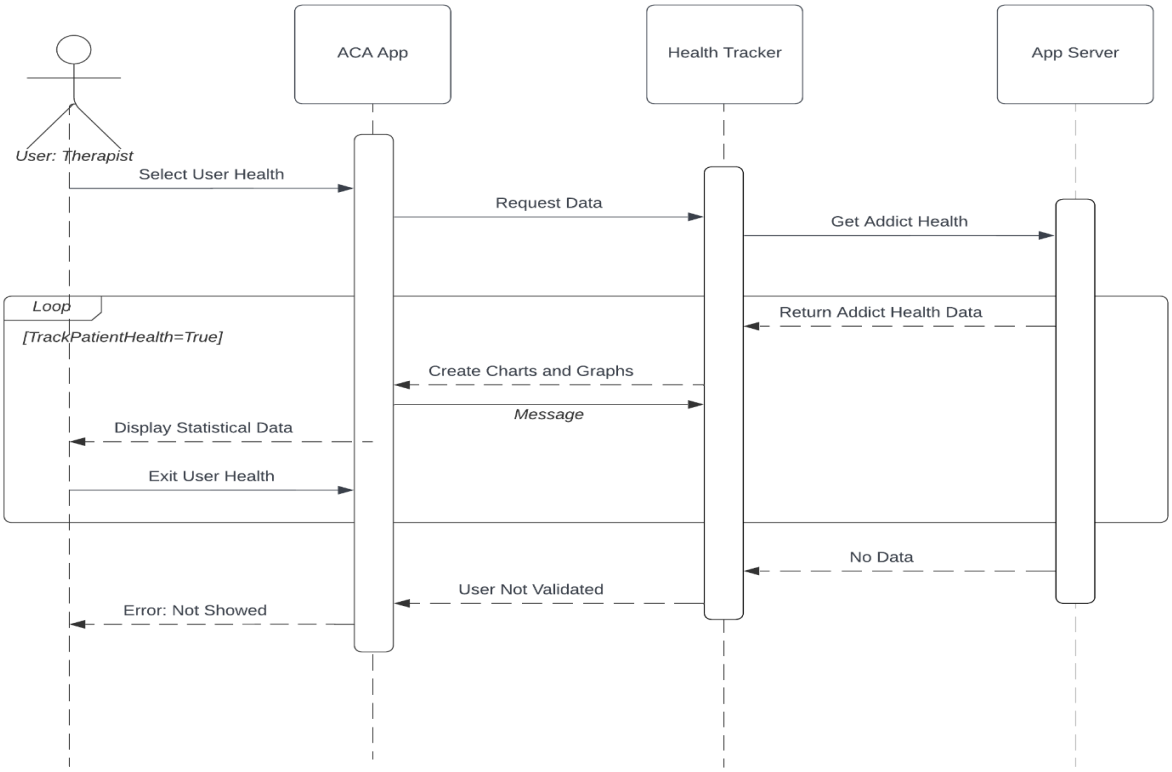
8.5 (U): Health Tracker

The application will provide users with tools to monitor and track their health and recovery progress.



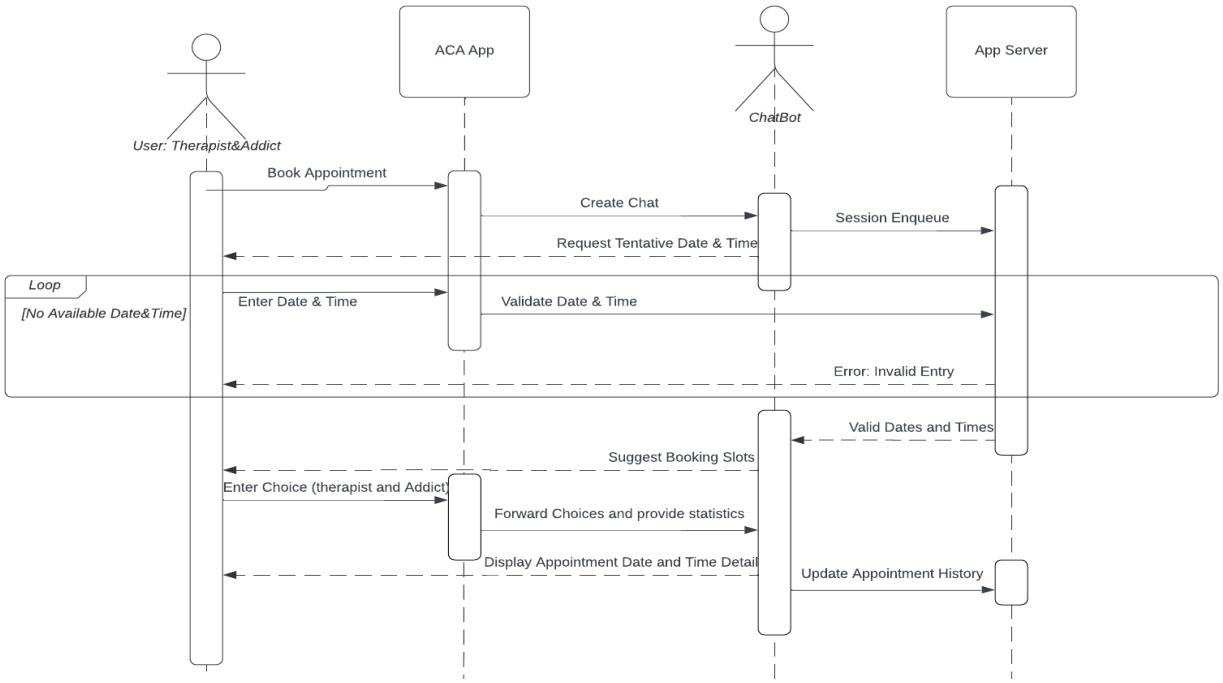
8.6 (U): Manage Statistics

The application will allow users to view and manage their progress data, including statistics on their substance use and recovery.



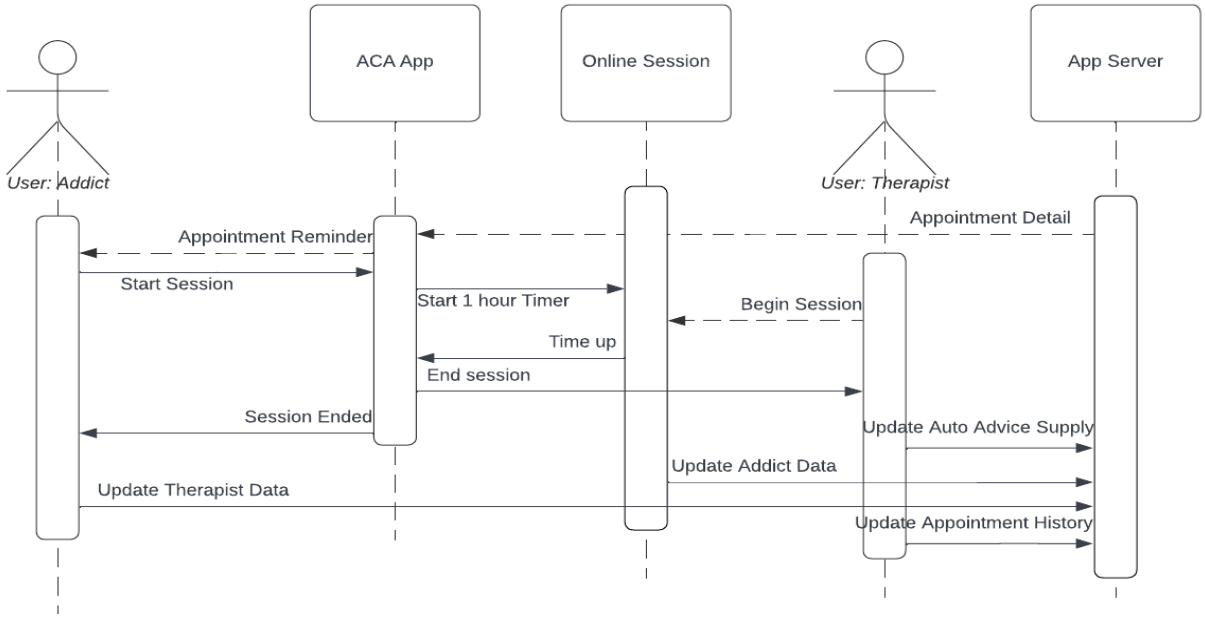
8.7 (A): Appointment System

The application will provide users with a calendar and scheduling system for managing appointments with healthcare providers using an AI chatbot system.



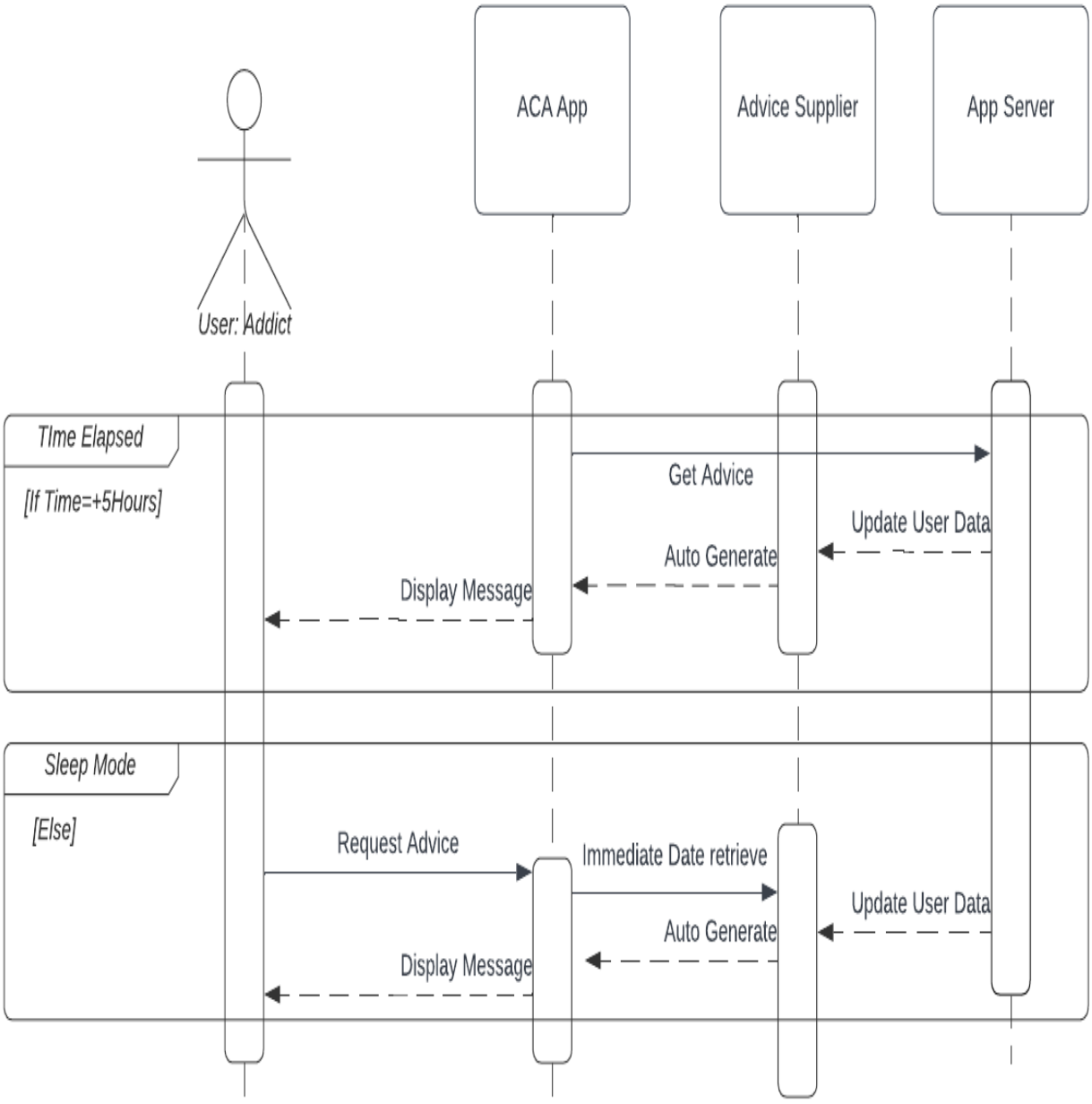
8.8 (T): Online Therapy

The application will offer users access to online therapy sessions with licensed therapists.



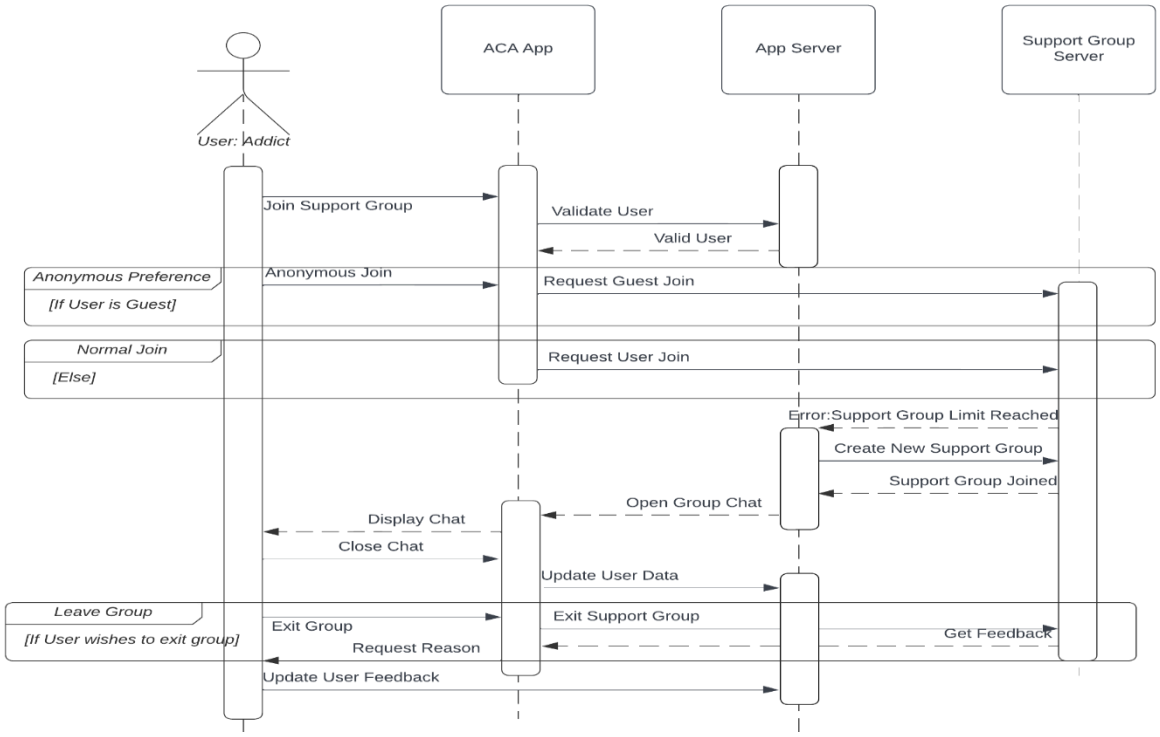
8.9 (T): Auto Advice Supplier

The application will provide users with personalized recommendations and advice for managing their addiction.



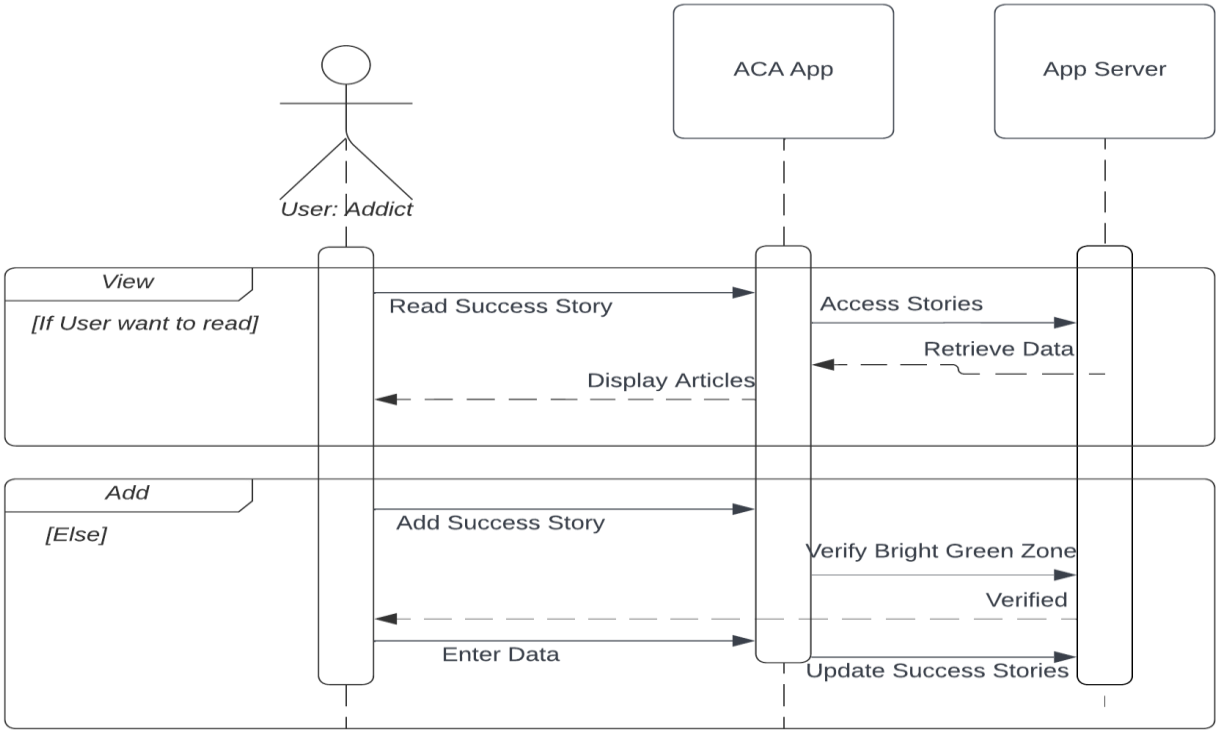
8.10 (T): Online Support Group

The application will connect users with online peer support communities for additional support and encouragement.



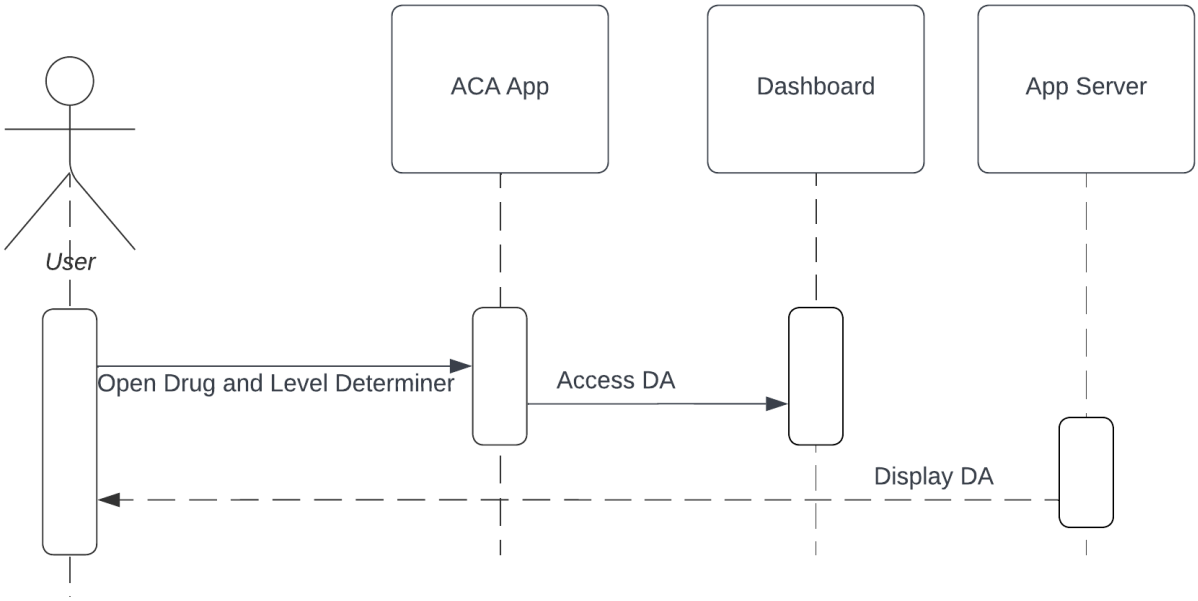
8.11 (T): Success Story

The application will feature user-submitted success stories to provide inspiration and motivation for recovery.



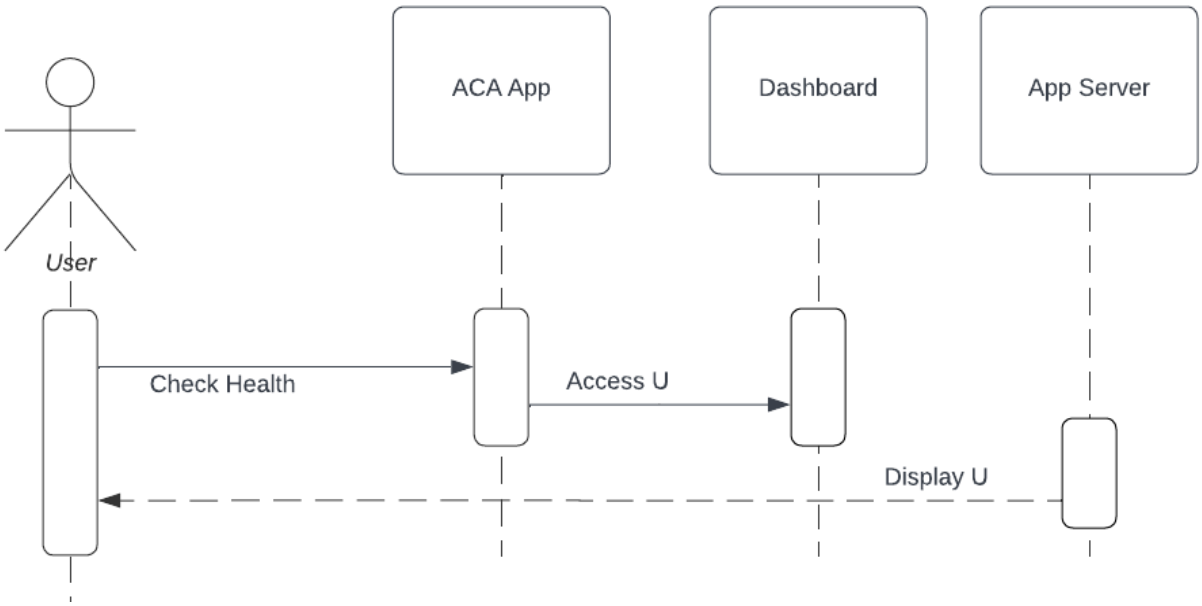
8.12 (D): Access (DA)

Access the Determine type and determine addiction level sequences



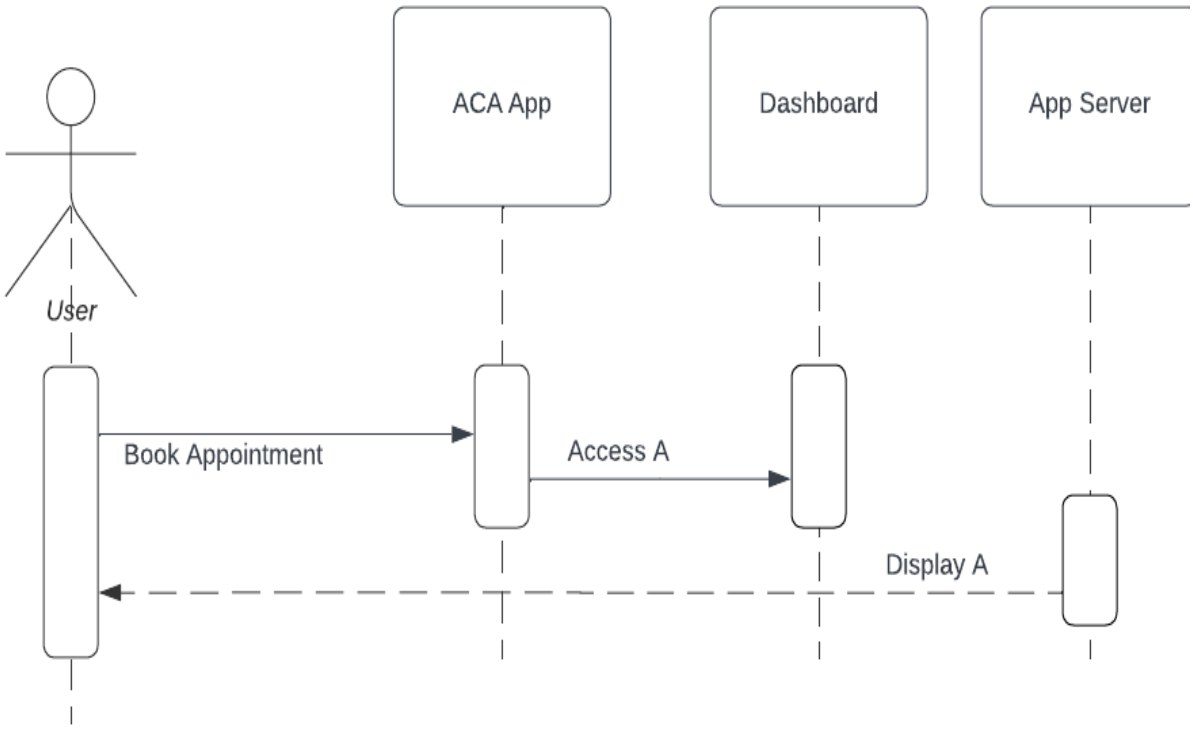
8.13 (D): Access (U)

Access the Get Contacts, Update User Health, Health Tracker, Manage Statistics sequences.



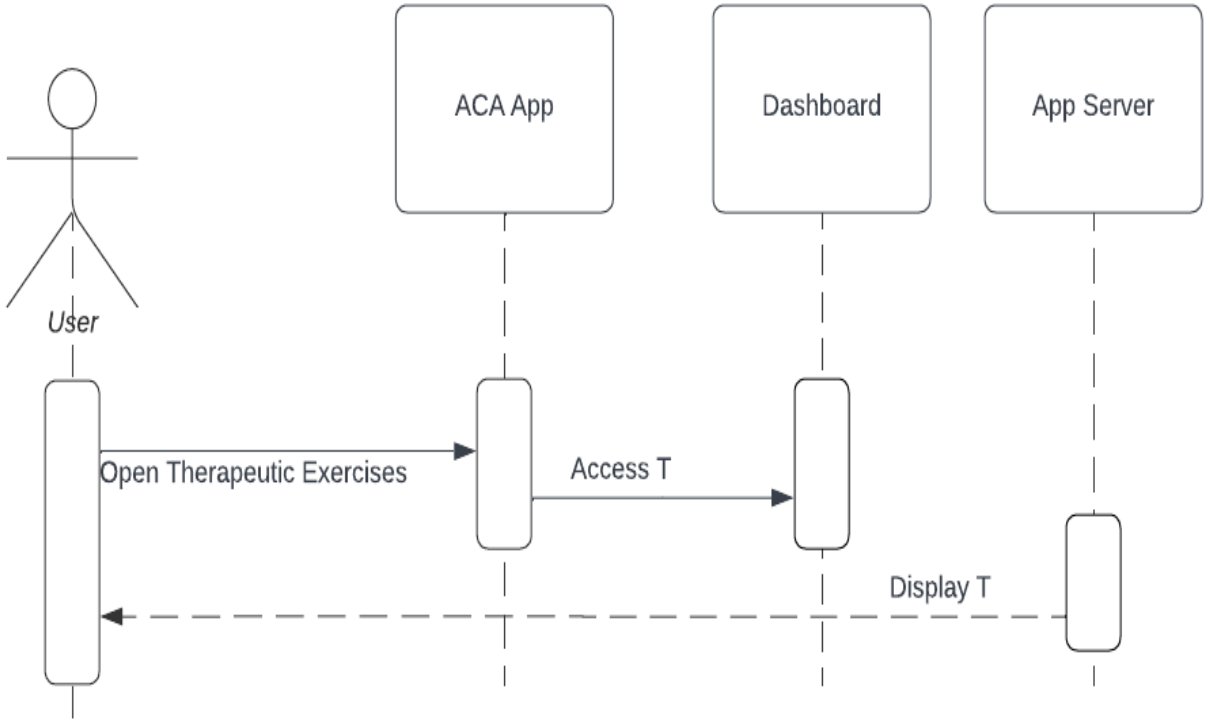
8.14 (D): Access (A)

Access Appointment System sequence



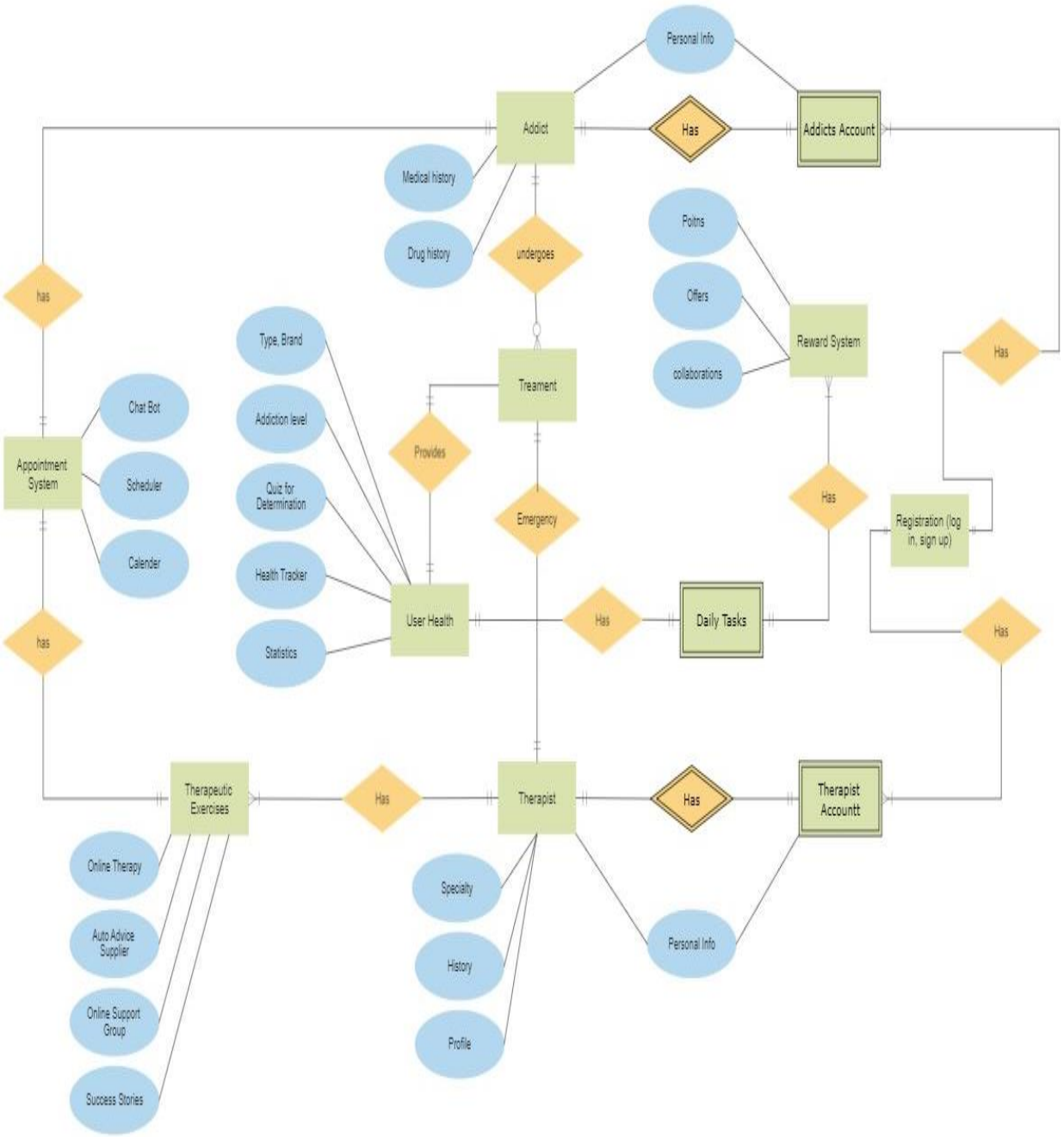
8.15 (D): Access (T)

Access Online Therapy, Auto Advice Supplier, Online Support Group, Success Story sequences.



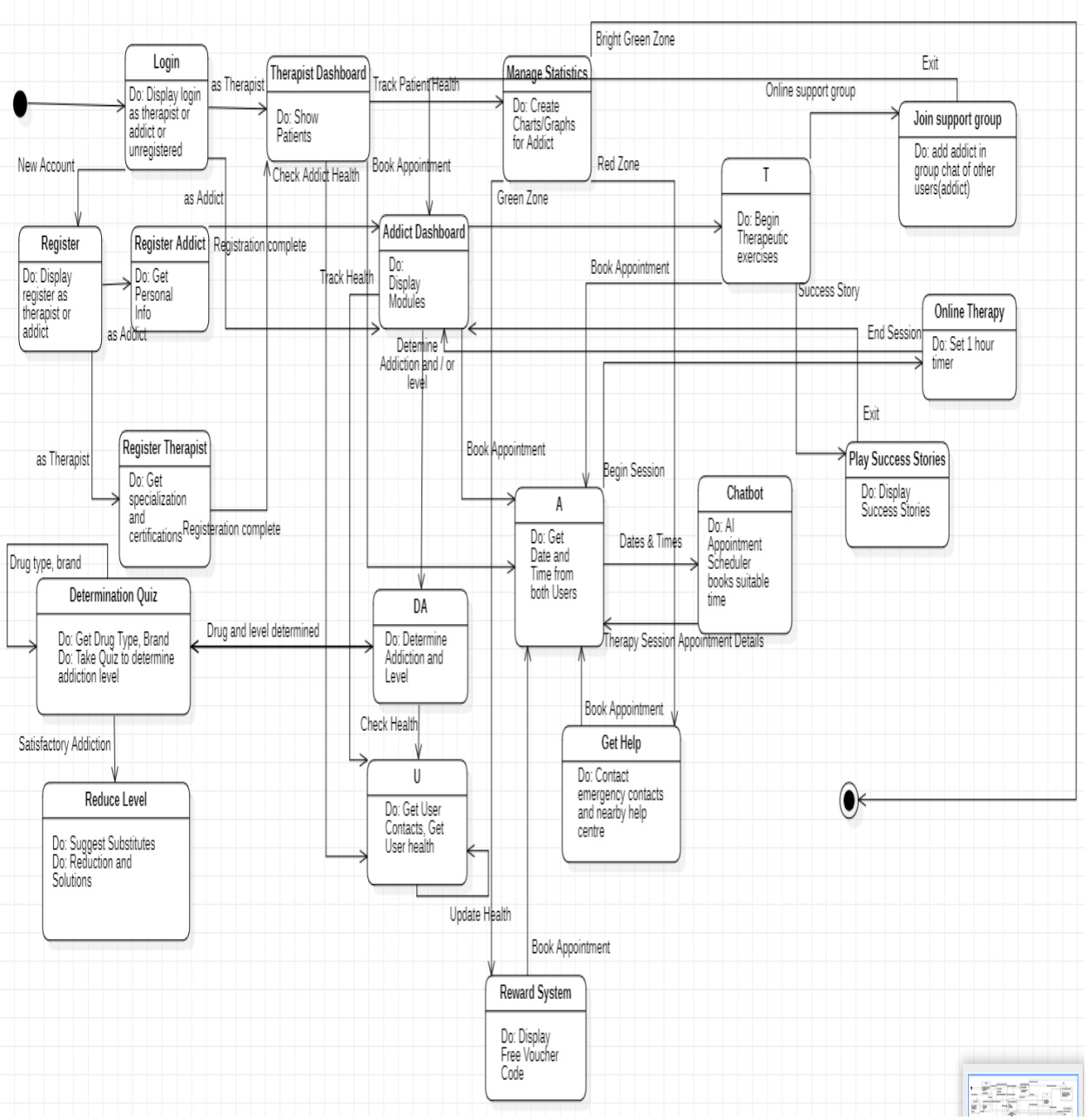
9. Entity Relationship Diagram

In the context of an addiction control app, an ER diagram could be used to model the relationships between entities such as users, addiction types, appointments, and health data. It could also be used to identify the data that needs to be collected and stored within the system, and the relationships between that data.



10. State Transition Diagram

The purpose of a state transition diagram for an addiction control app would be to provide a clear and visual representation of the recovery process, and to help software engineers understand the logic behind the transitions between states. It could be used to identify the different states that a user might experience, and to define the conditions under which transitions between those states would occur.



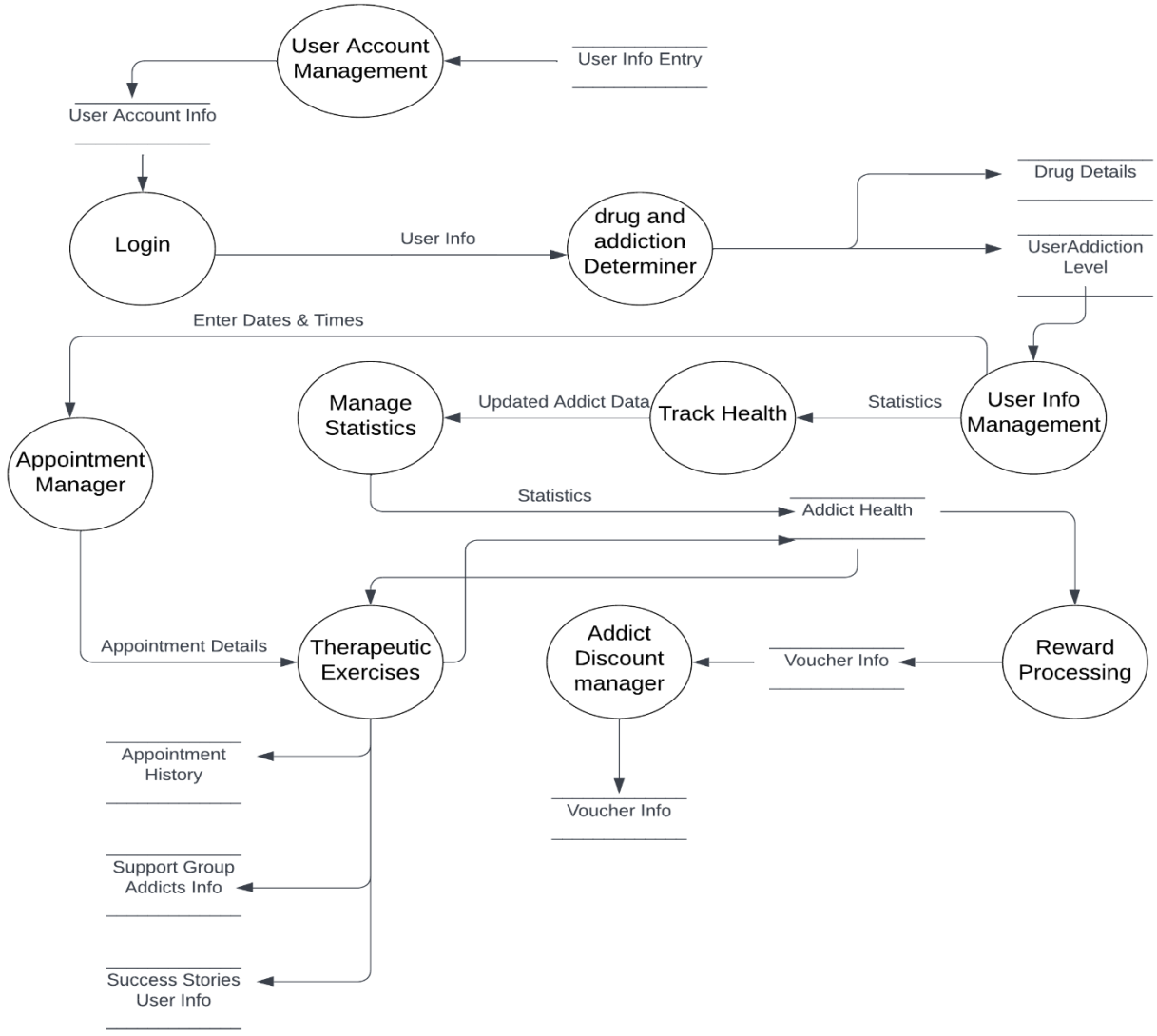
11. Data Flow Model

The purpose of a data flow diagram for an addiction control app would be to provide a clear and visual representation of the data flows within the system, and to help software engineers understand how data is processed and stored within the app. It could be used to identify the sources of data, the processes that use or manipulate the data, and the destinations of the data, as well as the relationships between these elements.

ADA has been divided into 3 levels for the data flow model as follows:

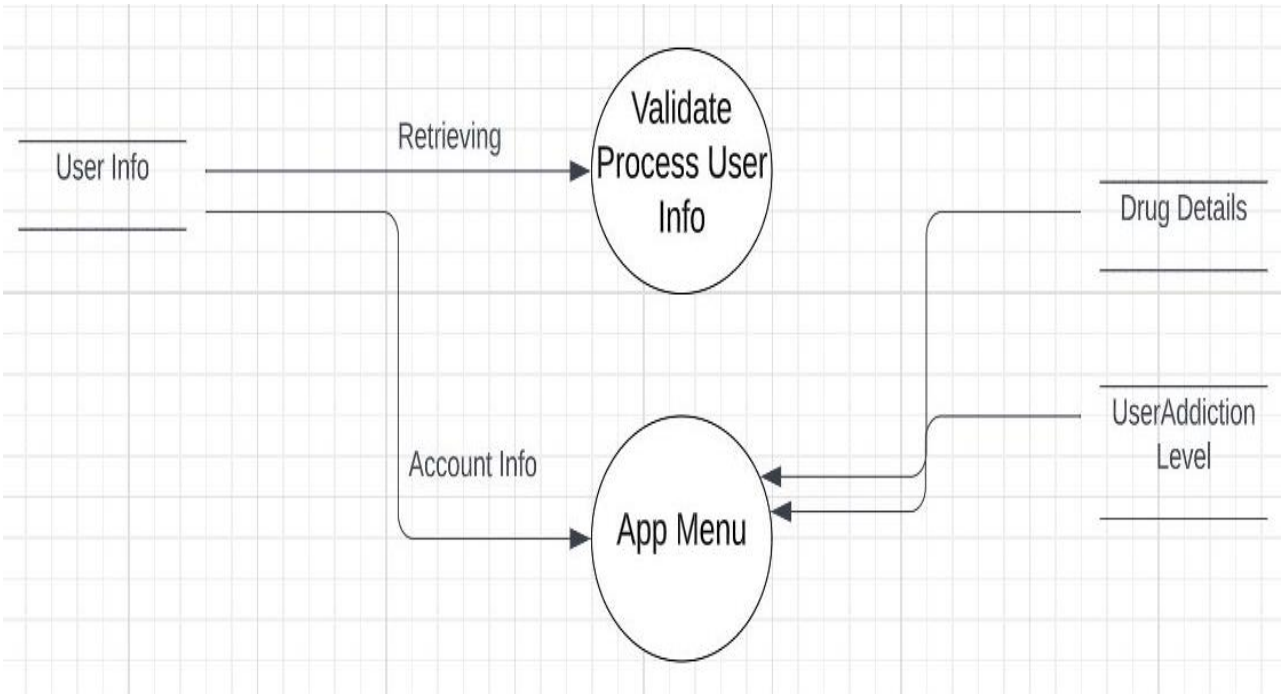
11.1 Level 0: Context Model is considered as the level 0 DFD in this context.

11.2 Level 1:

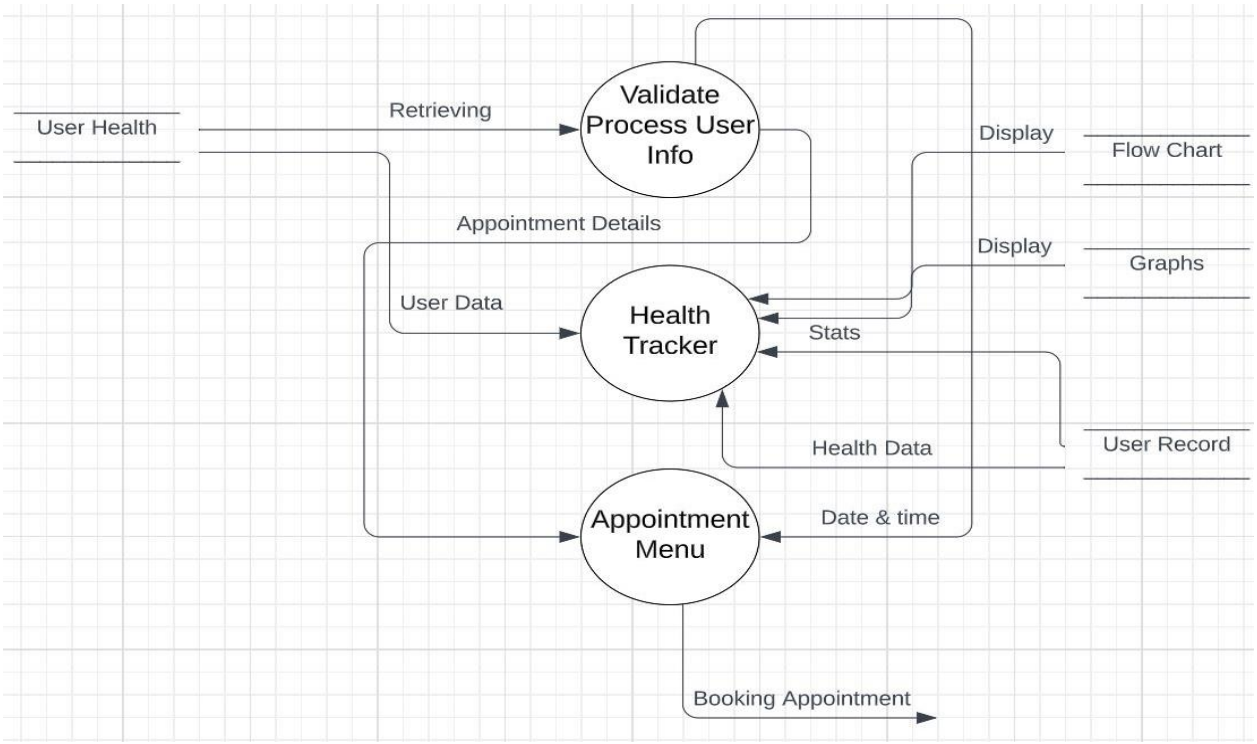


11.3 Level 2:

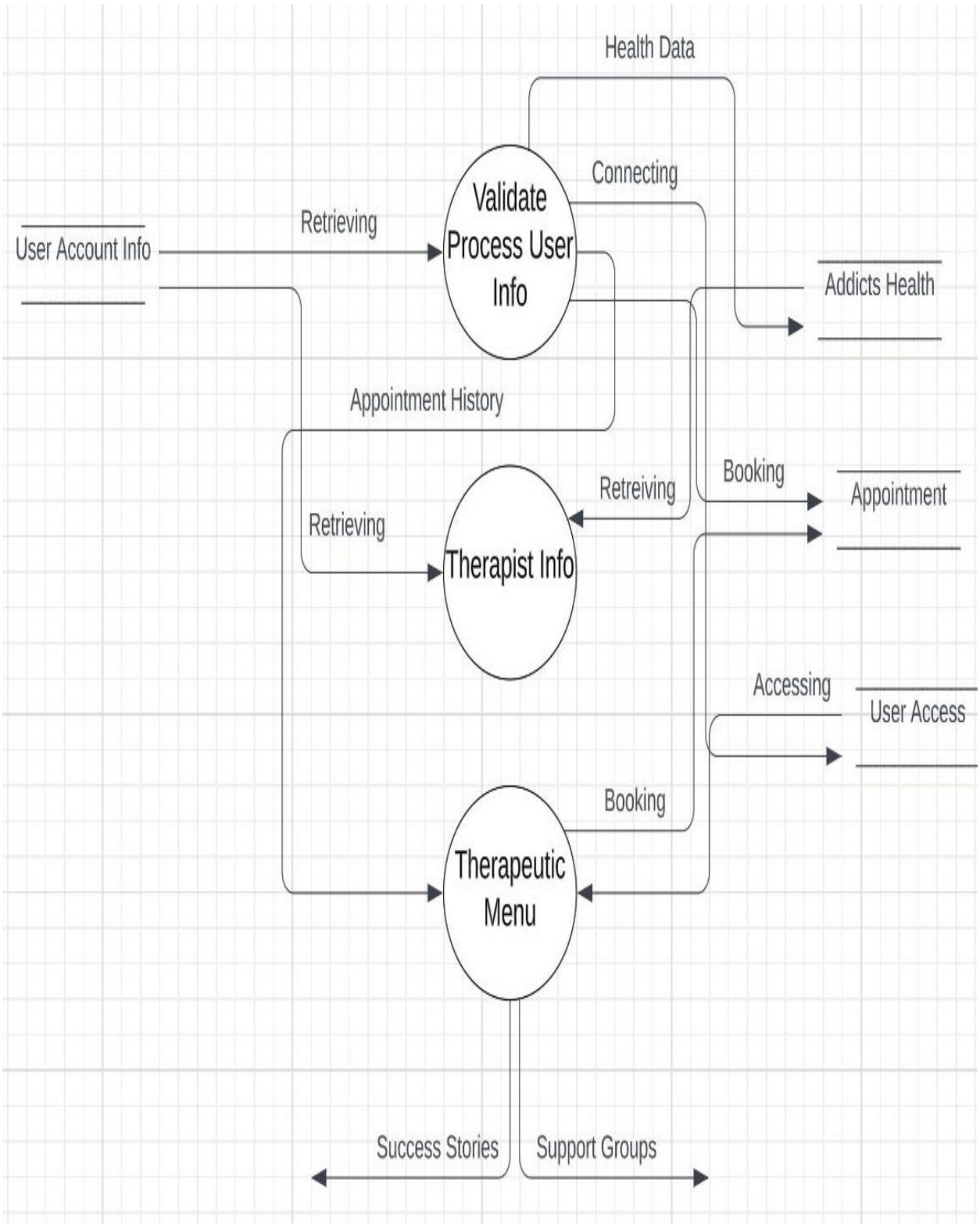
Module 1



Module 2

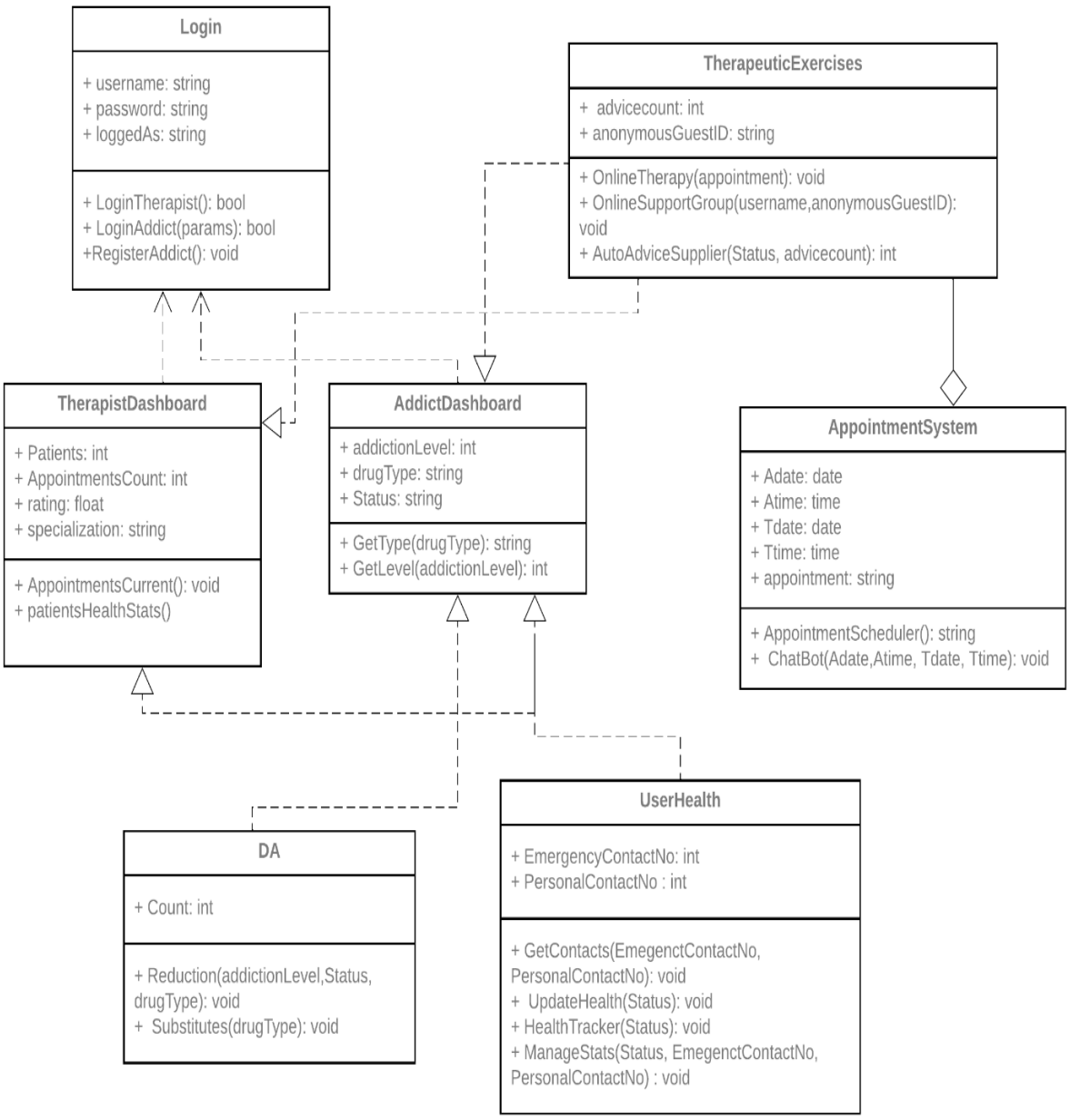


Module 3


Health Data
Validate Process User Info
Connecting
Retrieving
User Account Info
Addicts Health
Appointment History
Booking
Retreiving
Appointment
Retrieving
Therapist Info
Accessing
User Access
Booking
Therapeutic Menu
Success Stories
Support Groups

12. Class Diagram

Provides a high-level view of the structure of the app, and to help software engineers understand the relationships between the different classes within the system. It could be used to identify the key objects or concepts within the app, and to define the relationships between those objects, including inheritance, dependency, and aggregation.



13. Conclusion

The Addiction Control app is a mobile application designed to support individuals struggling with substance use disorders. Through a combination of self-assessment tools, educational materials, and peer support communities, the app aims to provide users with the resources and support they need to overcome addiction and achieve long-term recovery.

Overall, the Addiction Control app has the potential to make a significant impact on the accessibility and effectiveness of addiction treatment. By leveraging the convenience and accessibility of mobile technology, the app has the potential to reach and support individuals who may not have access to traditional treatment options. Moving forward, we recommend continued user testing and feedback to refine and improve the app, as well as exploration of partnerships with healthcare providers and support organizations to enhance the app's resources and support capabilities.