COLLECTIFY

Group - 1

Software Engineering

BLG 411E

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1. INTRODUCTION

The primary objective of this document is to provide a detailed exploration and analysis of the project at hand. By doing so, it aims to offer a comprehensive understanding of the application from both a developer and customer perspective. The overarching goal is to guide the development process effectively, ensuring that the end product aligns with the expectations and requirements of all stakeholders involved. Through the examination of various diagrams and architectures we examine functionalities, and system models for the project, enabling a clear road map for its successful implementation.

There's a detailed system architecture that lays out how everything fits together. This helps guide the development process. We've also got a component package diagram showing how functions are grouped together for easy handling and maintenance. For a closer look at how our software works, there are class diagrams that break down the different parts and how they relate. And don't forget the sequence diagrams, which show the step-by-step interactions during actual use. This report is basically a user-friendly guide that explains how we're building our software and what to expect in the next phases.

In summary, document provides a thorough exploration of the project, guiding both developers and stakeholders.

Table 1.1: Changelog

System Architecture	System Architecture Graph added
Component Diagram	Component Diagram added
Class Diagram	Class Diagram added
Sequence Diagram	Sequence Diagram added

2. SYSTEM ARCHITECTURE

2.1. SYSTEM ARCHITECTURE

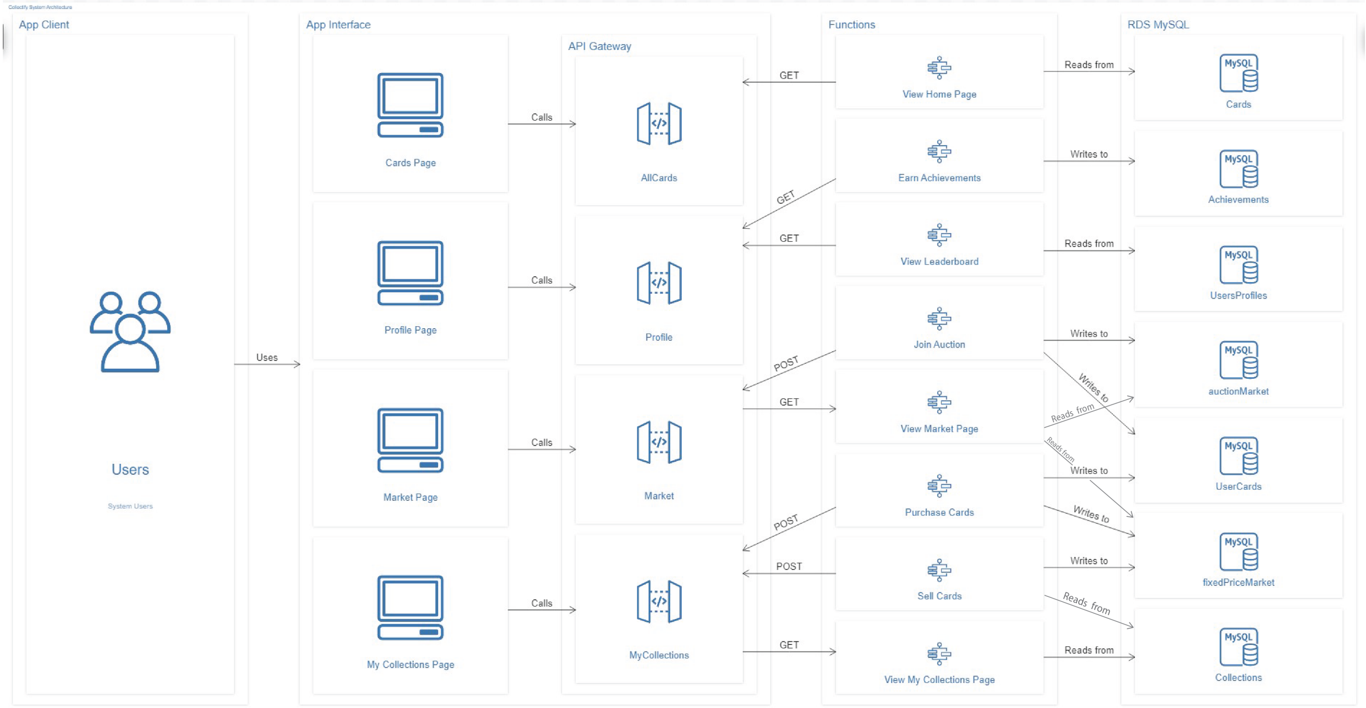

Figure 2.1: System Architecture

The interactions between these components are facilitated by the backend services, which include functions and managing the database.

The diagram also implies the existence of a data storage layer, where user information, collections, cards, and achievements are stored.

Overall, this architecture provides a foundation for users to engage with collectible cards, manage their collections, participate in auctions, and achieve various milestones within the Collectify platform.

2.2. COMPONENT PACKAGE DIAGRAM

We illustrate the dependencies among software components in component diagram. This diagram shows which operation depends on what and what needs to be done first. Also it demonstrate which external services are used.

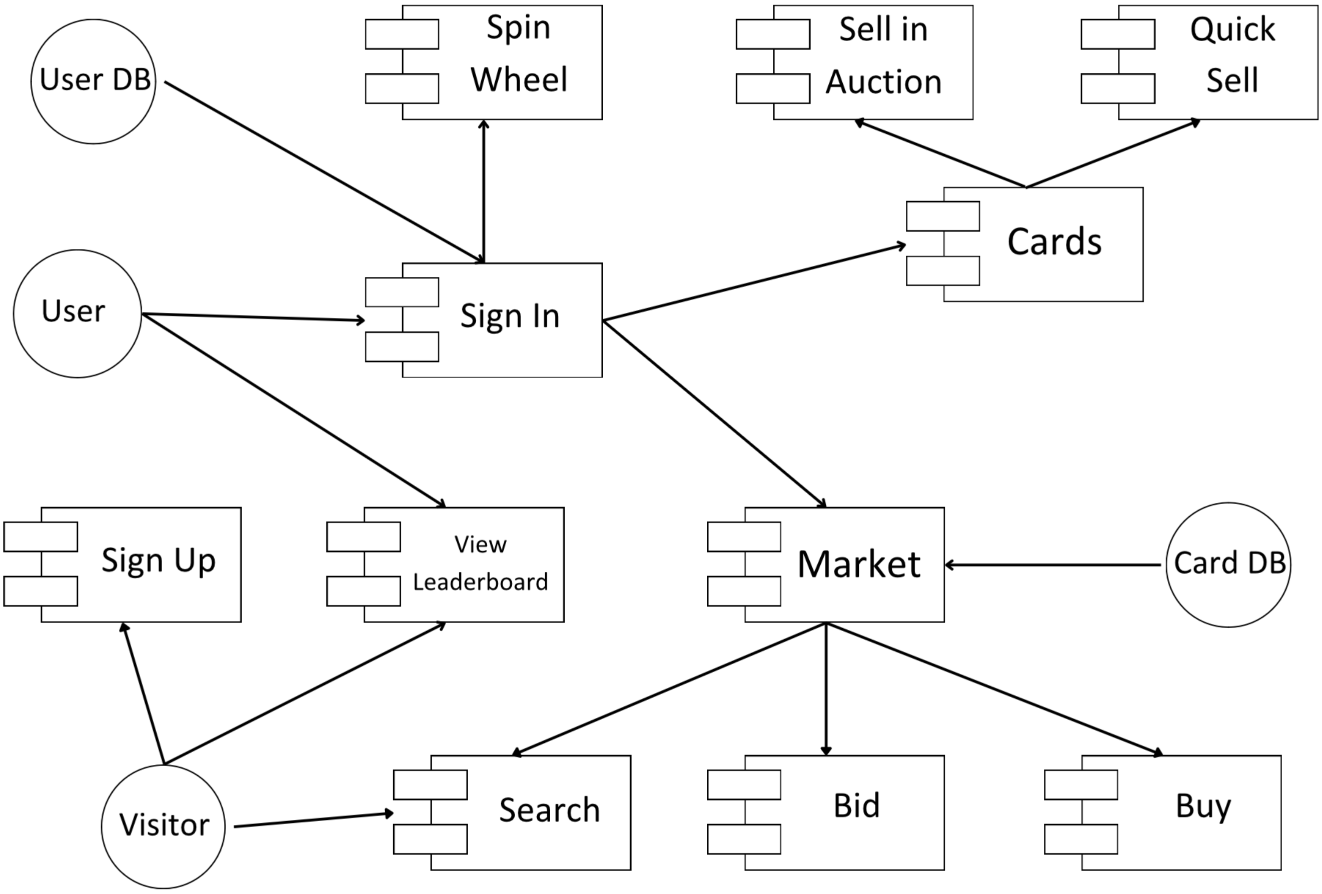

Figure 2.2: Component Diagram

3. LOW LEVEL DESIGN

3.1. CLASS DIAGRAMS

In class diagrams we take a more detailed look at our functions and variables of our components. It also shows the relations and attributes the classes have between each other. The admin is connnected with the apps crucial functions such as "addCard()" "updateCard()" for example.

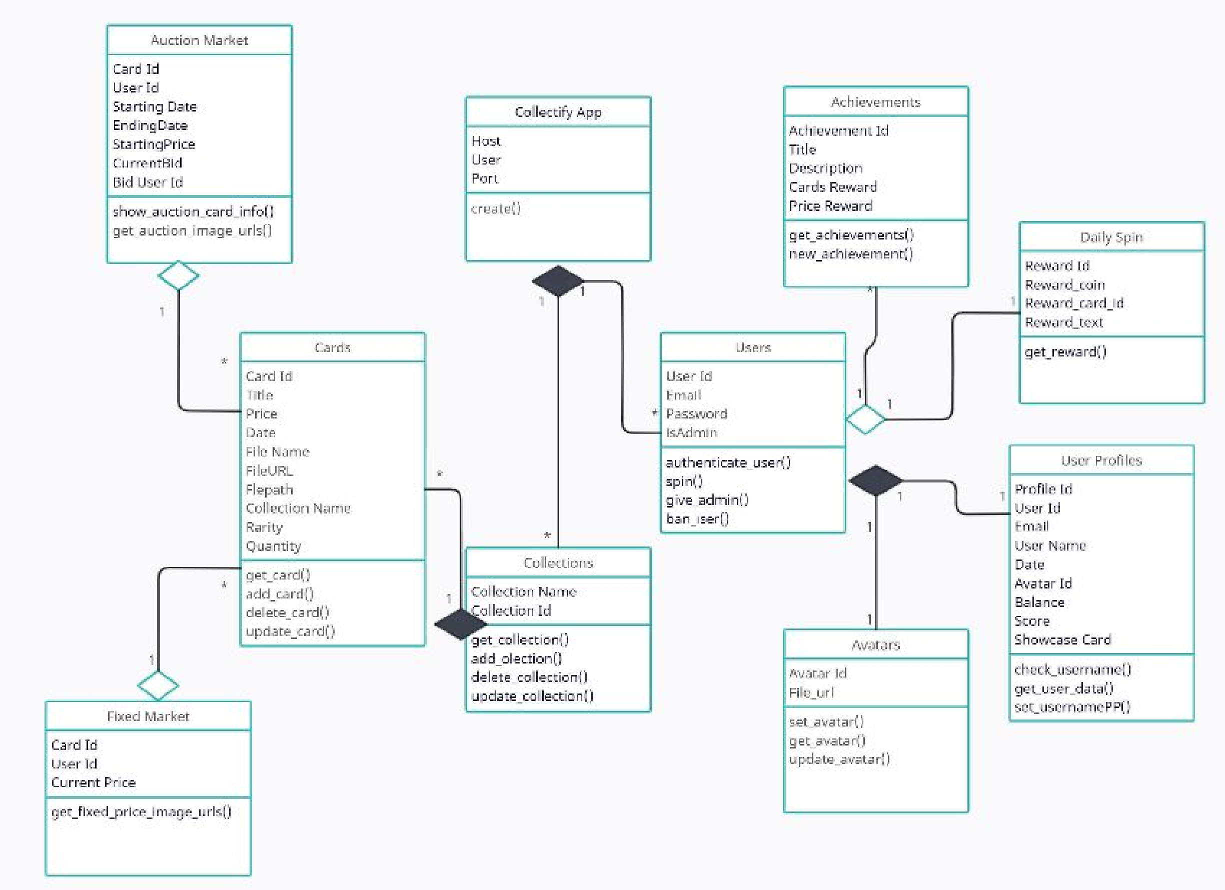

Figure 3.1: Class Diagram

3.2. SEQUENCE COLLABORATION DIAGRAMS

Sequence diagram gives us a different look on how processes work cooperatively over time. We can see that not everything is happening all at once and there is consequetivity to it. Sometimes the processes can work together at the same time.

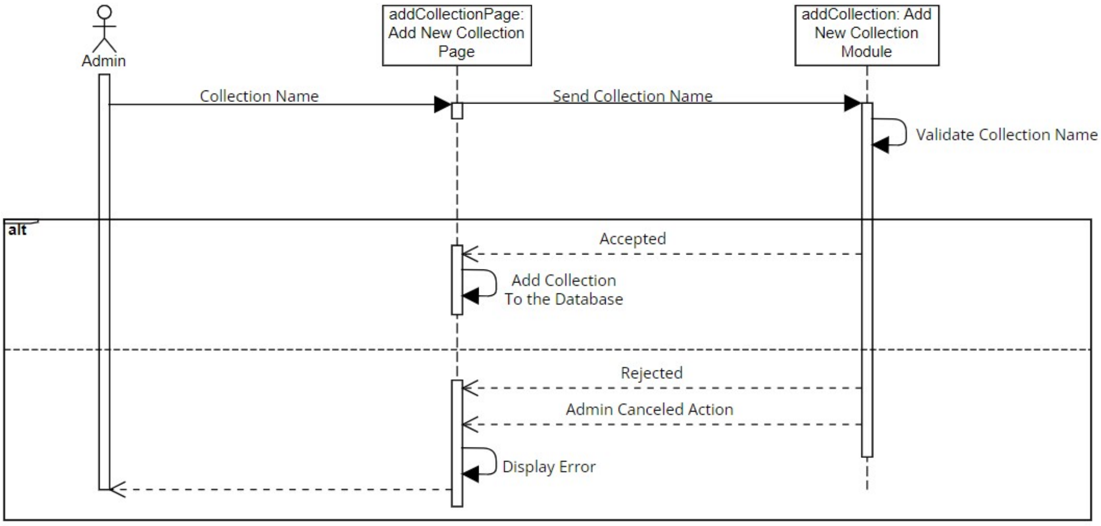

Figure 3.2: Sequence Diagram for Adding New Collection

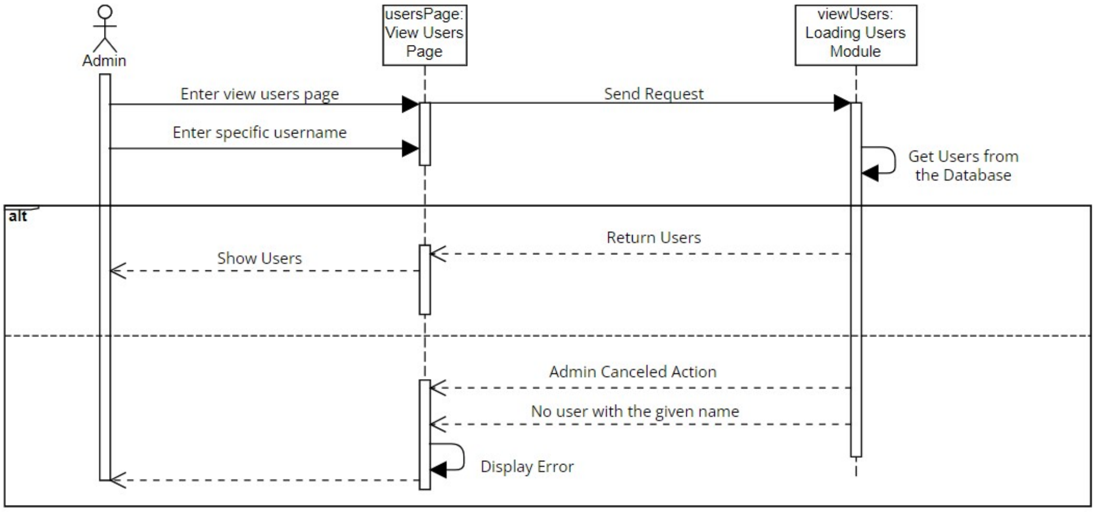

Figure 3.3: Sequence Diagram for Viewing Users

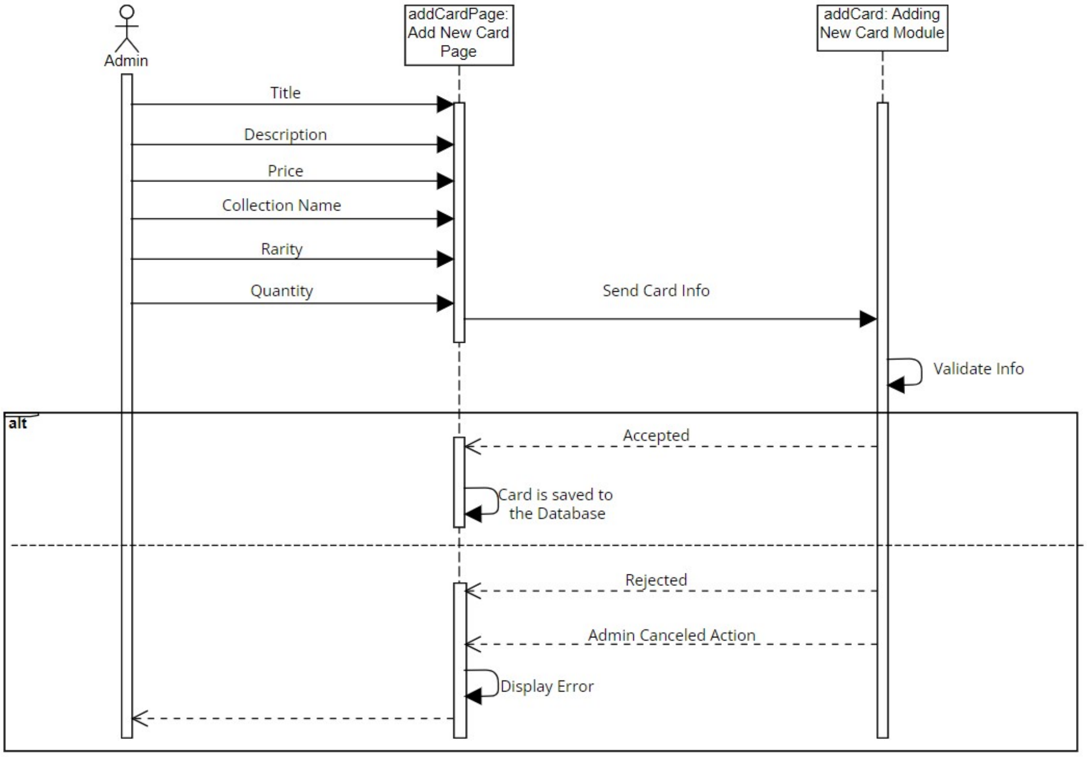

Figure 3.4: Sequence Diagram for Adding New Card

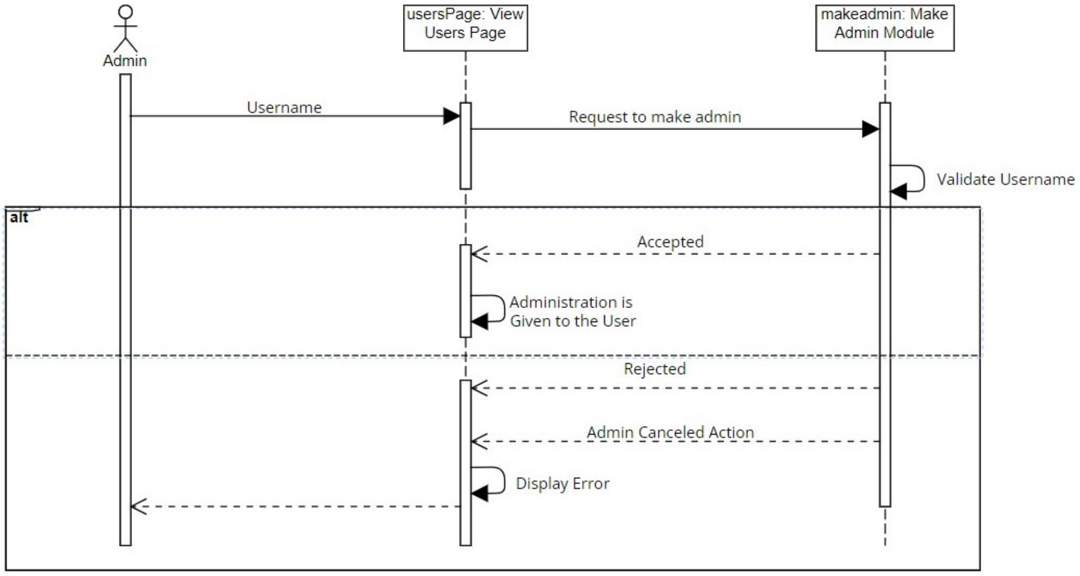

Figure 3.5: Sequence Diagram for Giving Administration

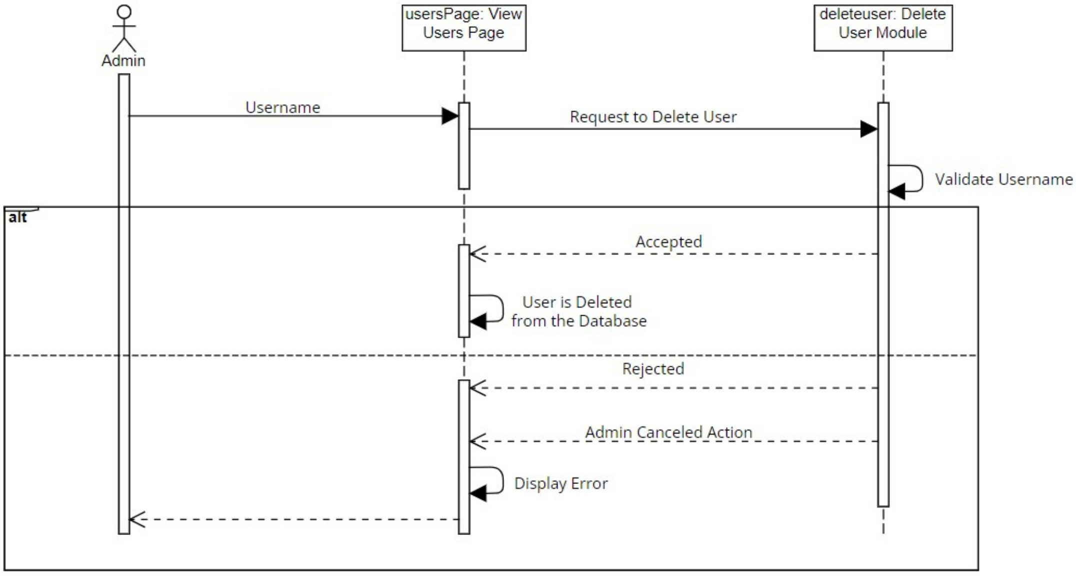

Figure 3.6: Sequence Diagram for User Deletion

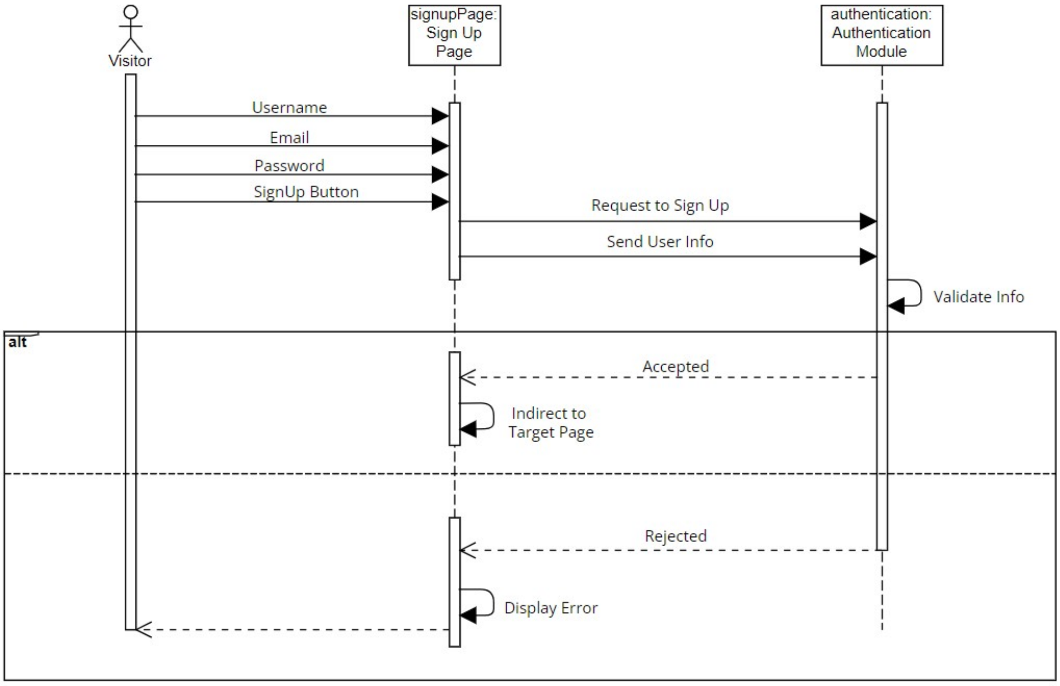

Figure 3.7: Sequence Diagram for Sign Up

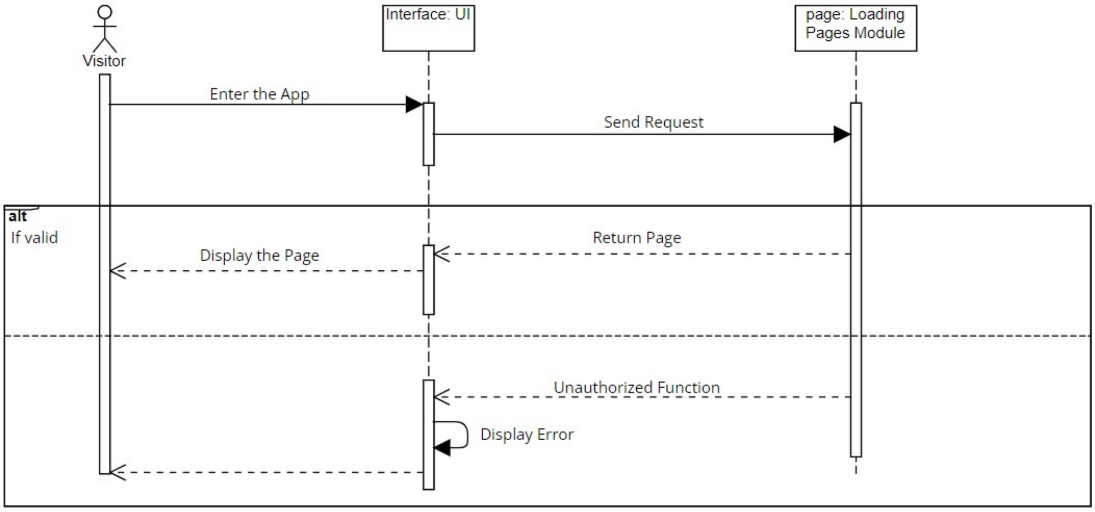

Figure 3.8: Sequence Diagram for Exploring the App

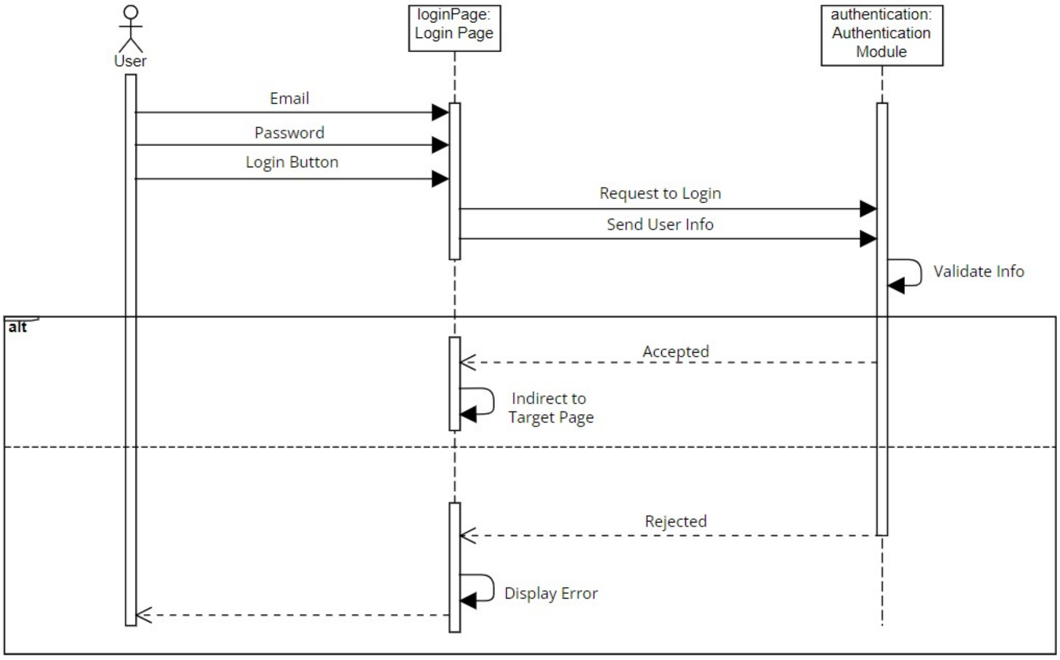

Figure 3.9: Sequence Diagram for Login

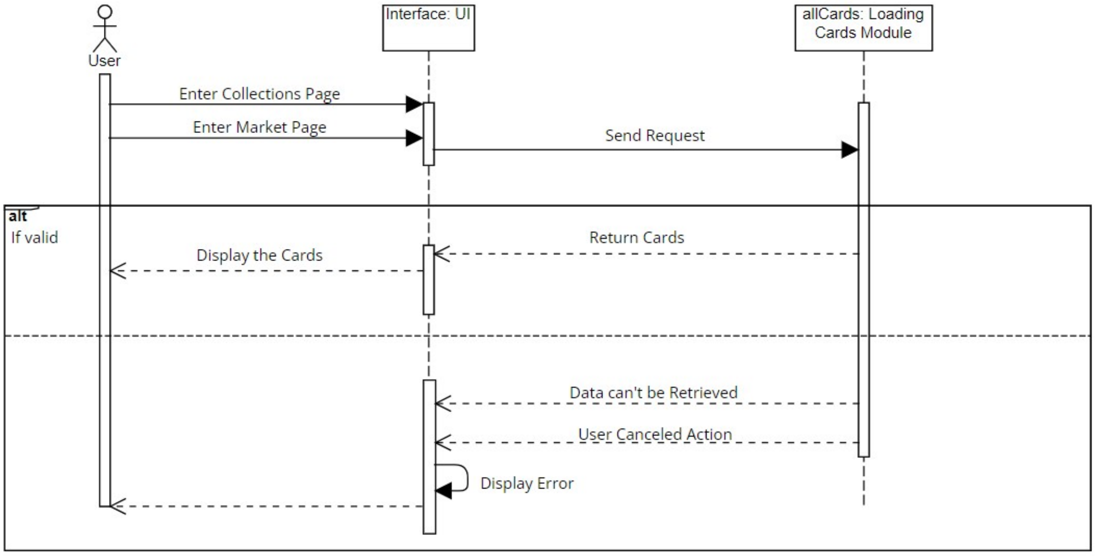

Figure 3.10: Sequence Diagram for Viewing Cards

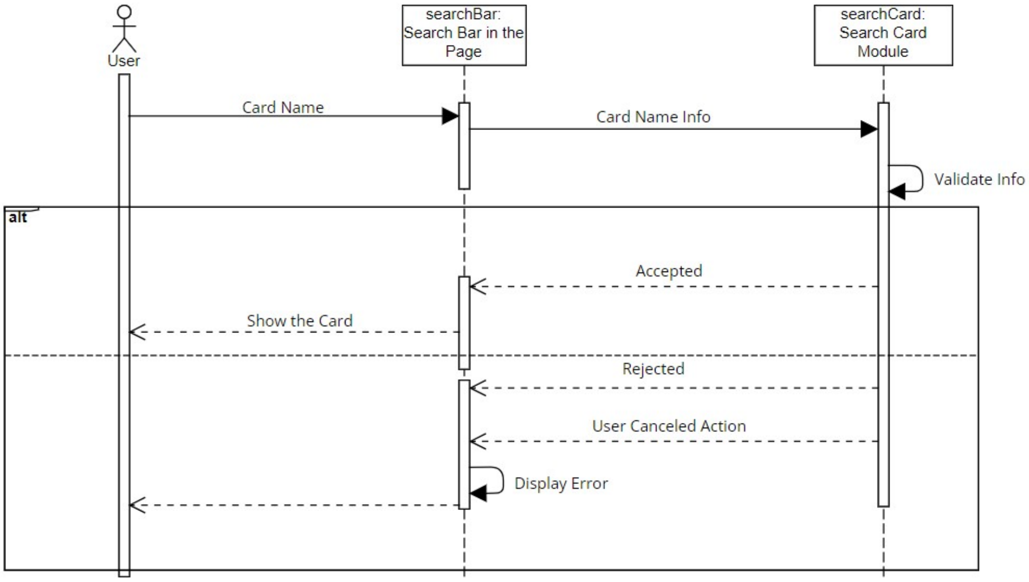

Figure 3.11: Sequence Diagram for Searching Card

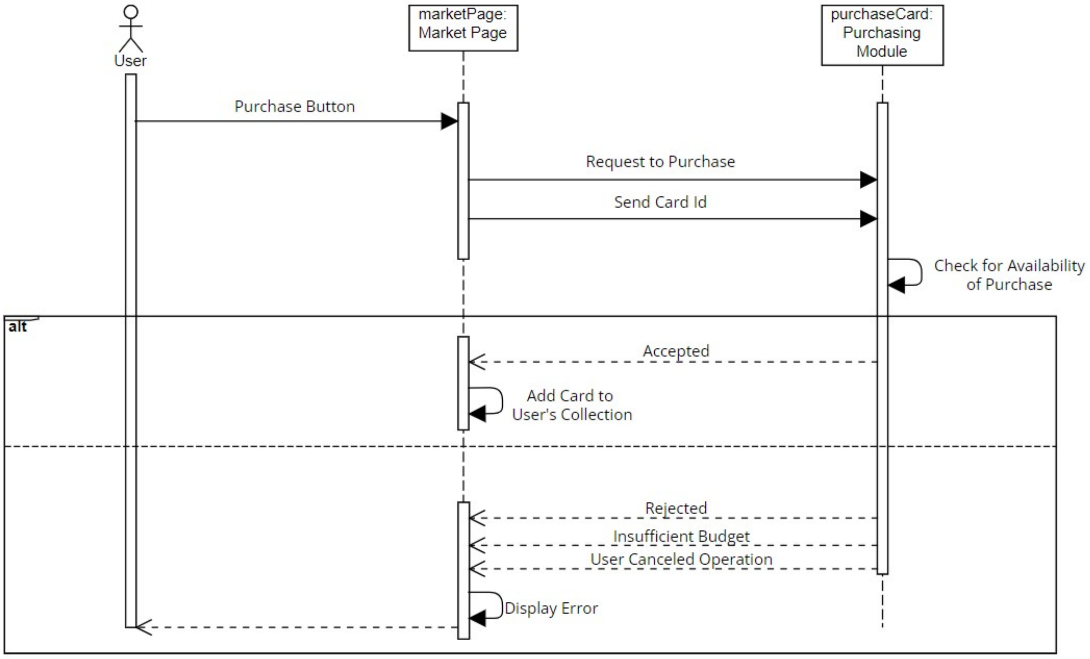

Figure 3.12: Sequence Diagram for Purchasing

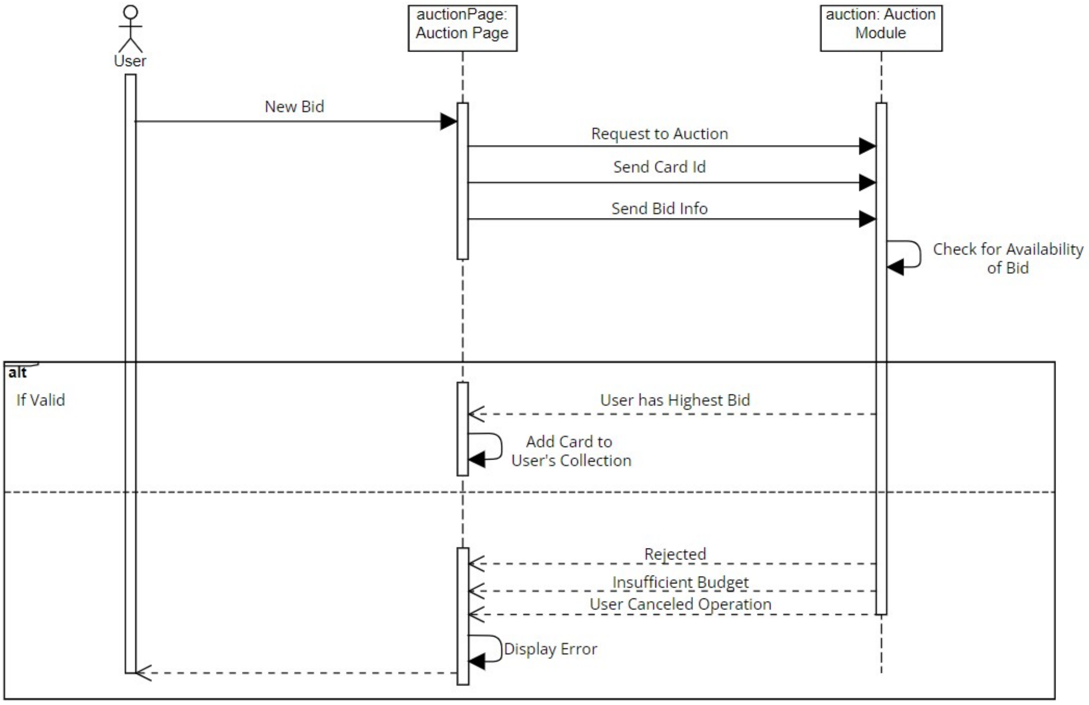

Figure 3.13: Sequence Diagram for Auction

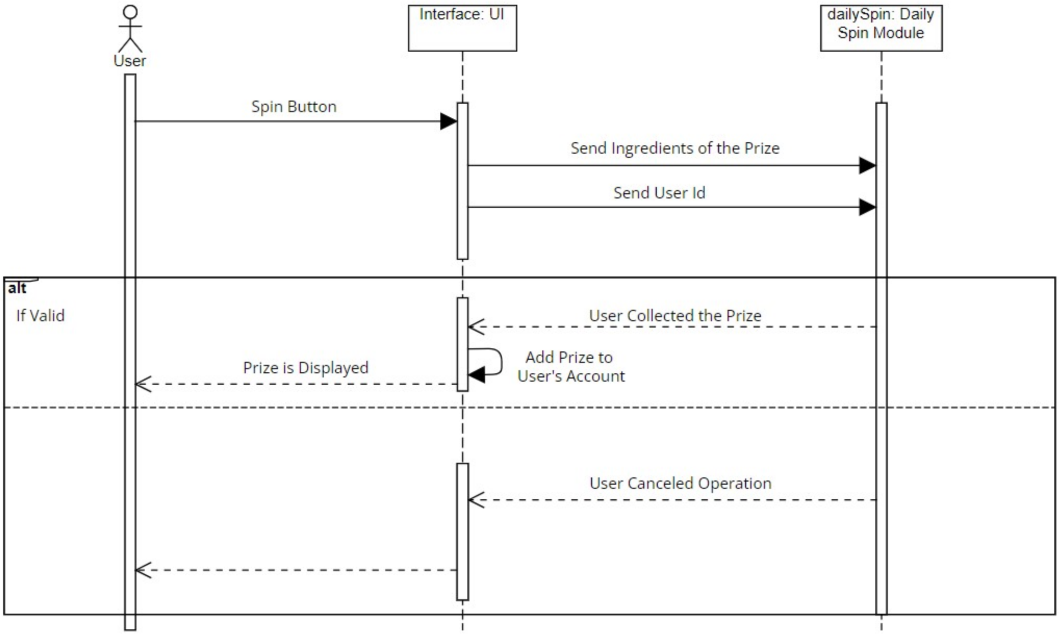

Figure 3.14: Sequence Diagram for Daily Spin

3.3. DATA FLOW DIAGRAM

There no is change in Data Flow Diagrams. Data Flow Diagram (minimum 2 levels (Level 0 - Level 2)) and its explanation.

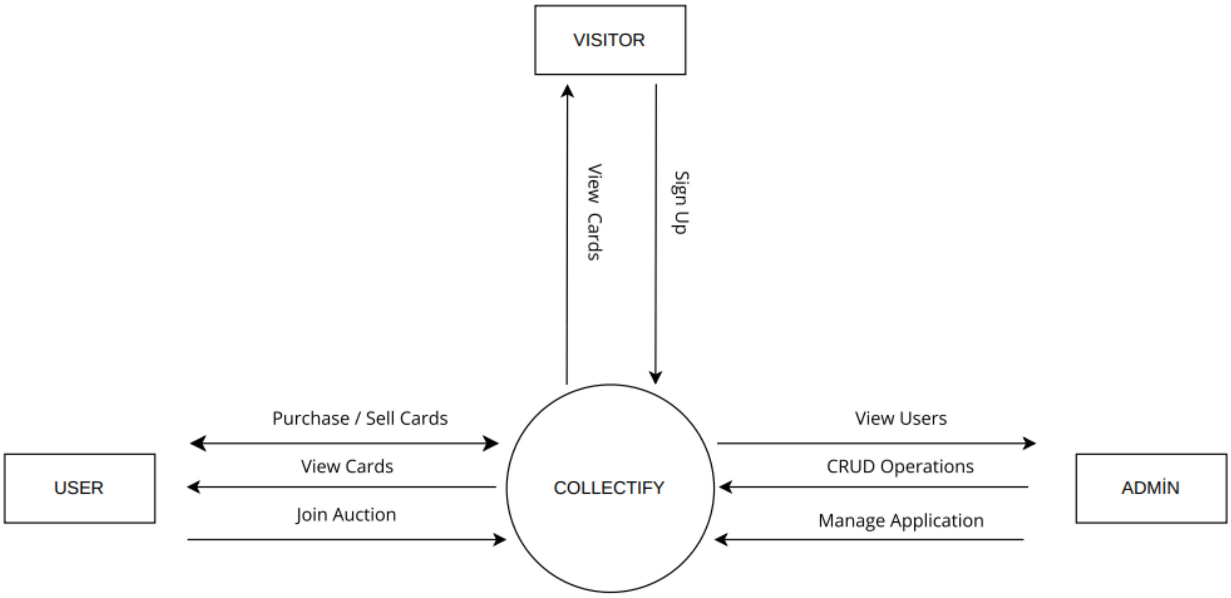

Figure 3.15: Data-Flow Diagram - Level 0

Level 1 chart shows general detailed structure of our project that covers the most crucial functions and tasks. By looking at the flow chart we can easily understand the basic methods of card transactions, admin controls and even a visitor that can interact with the app by signing up or just viewing what the app offers. The diagram also focuses on what data is being transfered or used. In example to sell a card the app needs the info cardId, price and date as key data. Some functions may also start by just User "Command". This means that no data transfer is needed until the necessary conditions are met.

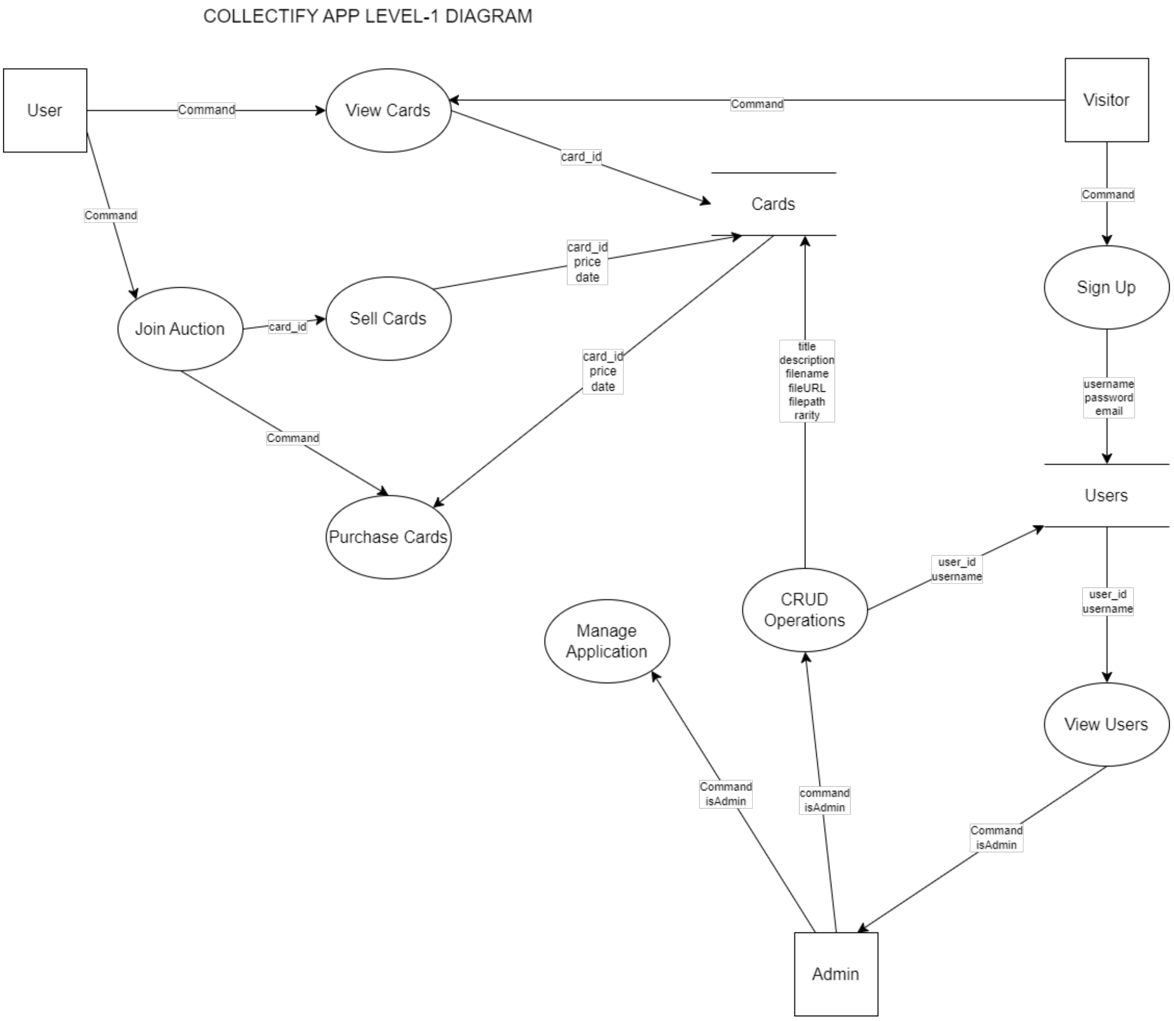

Figure 3.16: Data-Flow Diagram - Level 1

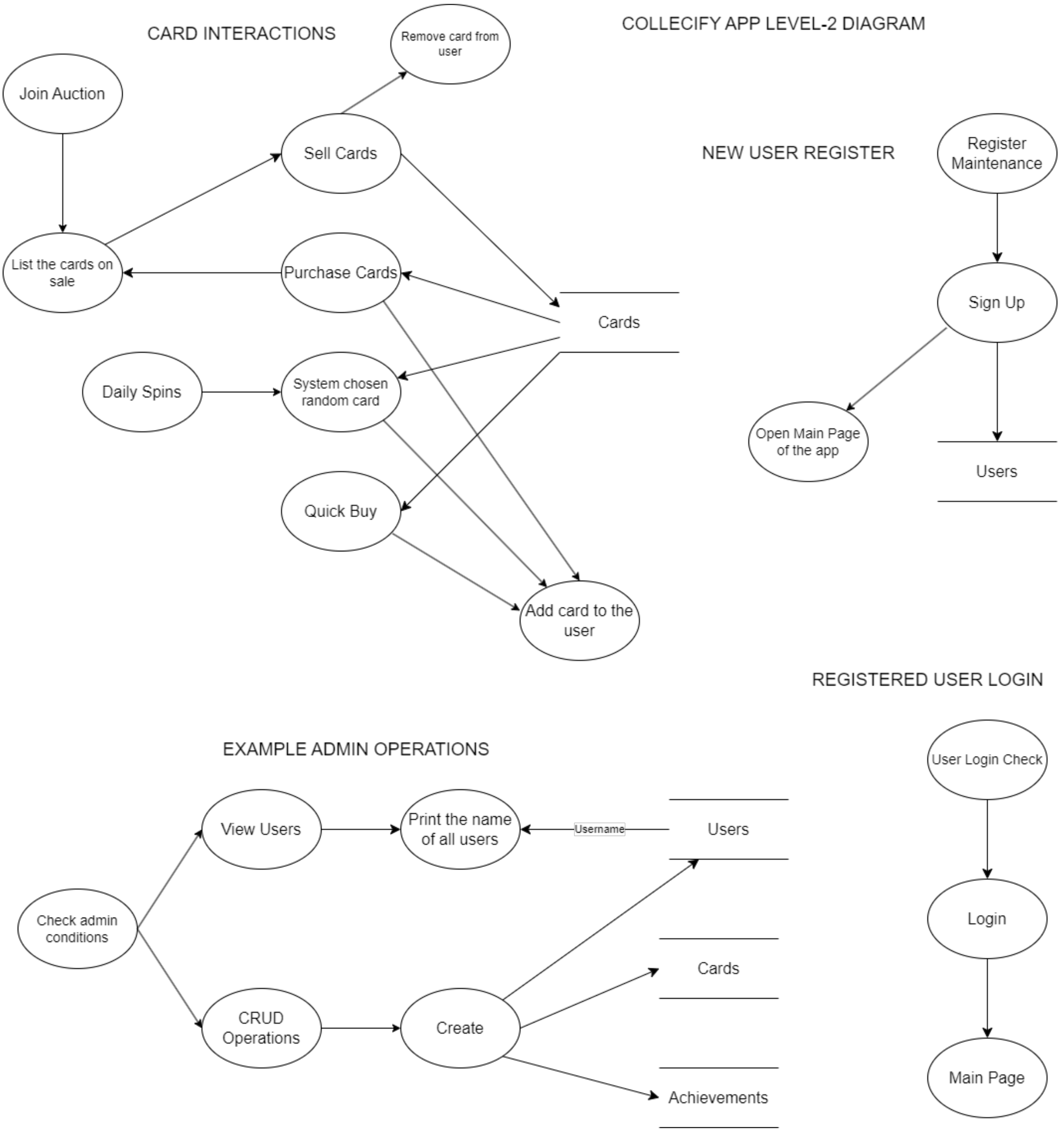

Figure 3.17: Data-Flow Diagram - Level 2

Level 2 chart focuses on specific details of certain tasks in more detail. Instead of looking at the whole app it provides insight on how certain important functions are implemented in the app. The card interactions shown in the table is the whole card trading system currently planned or started to be implemented in the app. There are different methods of trading or purchasing cards. First is the auction system where the users put their cards on some amount of time and other users give offer on it. The second is the daily spin where the user spins a wheel of luck and earns bonus card. The third method of getting a card is quick-buy some specific cards from the game store. The table provides context for example admin operations, first time user register and registered user login. By looking at the diagrams the flow of these functions can be understood. Some features of the app needs an admin account like CRUD operations or listing all users. These can be accessed if the admin conditions are met. The diagrams also shows the Register Maintenance for visitors that want to sign up to the app.