

# Deliverable #3

SE 3A04: Software Design II – Large System Design

March 27, 2023

## 1 Introduction

### 1.1 Purpose

The purpose of this document is to provide detailed design for the carpool app that can be looked upon for implementation. The objective is to take the overview of the system and its architecture and transform it into designs that describe the app's composition and behaviour. The intended audience for this document includes software developers and engineers, systems design architects, and other potential stakeholders who may benefit from an understanding of the system design.

### 1.2 System Description

The system is organized into multiple sections, each fulfilling a requirement of the product. These include Update Account, Default Home View, Database, Dispatch Ride, Arrival Response, and User Authentication. Within these sections, controllers are used to interact with both the user and the databases, as well as other sections to support the function of the application. The controllers also determine what pages are displayed to the user and the functions of the pages, and the logic and decision-making that determines which pages are displayed are illustrated in section 2 using state diagrams. The pages represent the user interface layer of the system. The use cases of our system and the orders of interactions and responses are shown using sequence diagrams. The overarching structure of the system and its sections can be seen in the detailed class diagram in Section 4.

### 1.3 Overview

The document will be organized by sections based on the type of UML diagram.

In Section 2, the behaviour for all controller classes will be visualized in the form of a state chart diagram.

In Section 3, the behaviour for all use cases will be visualized in the form of a sequence diagram.

In Section 4, the entire system's structure and interaction will be visualized in the form of a detailed class diagram.

At the end of the document, there is a record which represents the division of labour of all contributors to this deliverable.

## 2 State Charts for Controller Classes

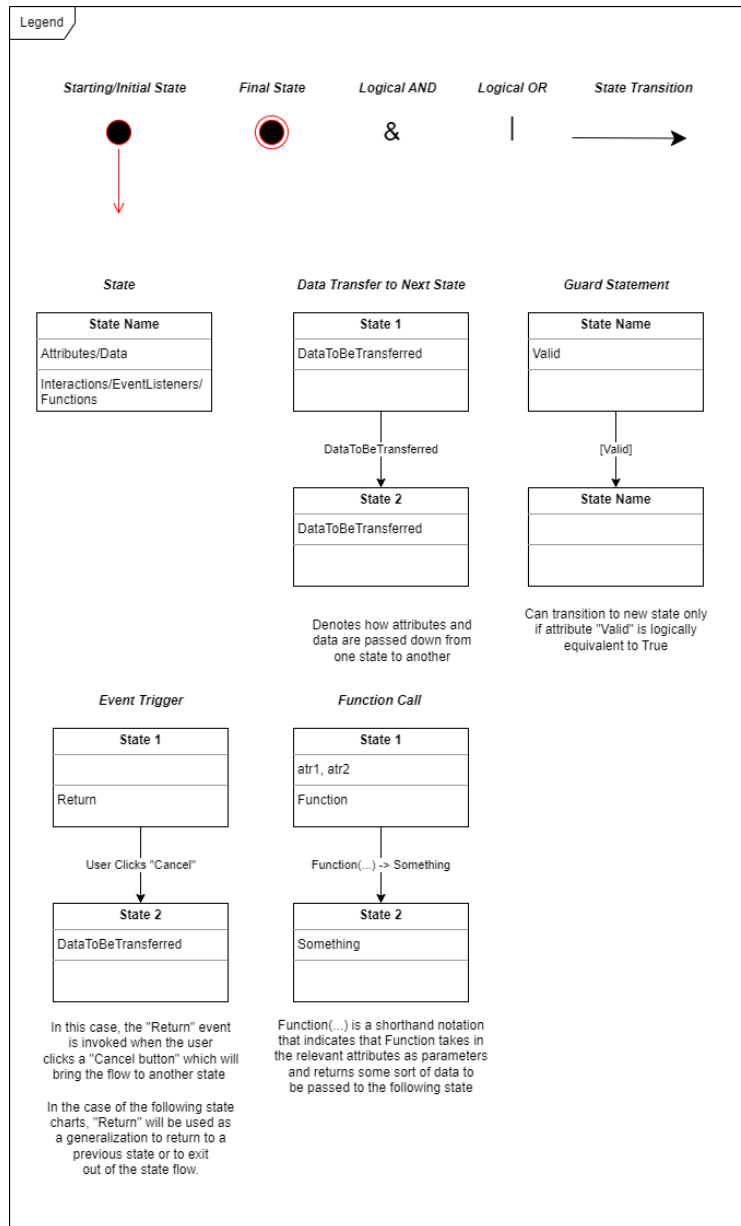


Figure 1: Legend

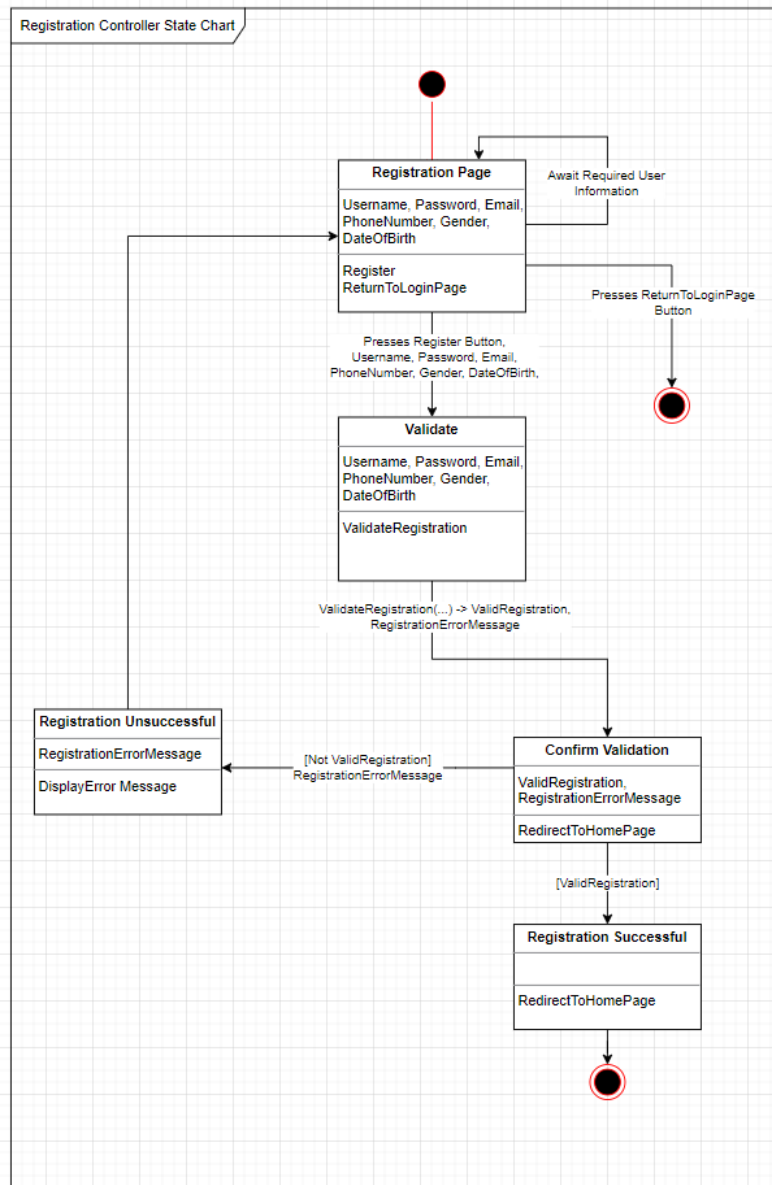


Figure 2: Registration Controller State Diagram

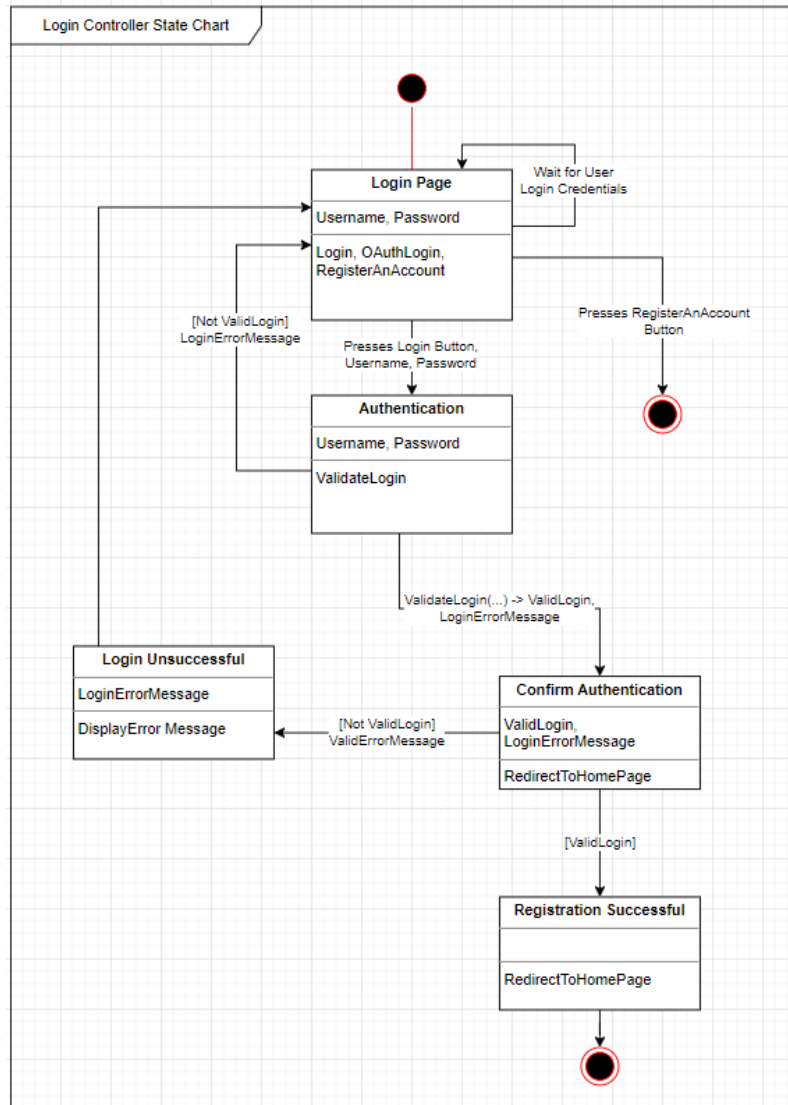


Figure 3: Login Controller State Chart

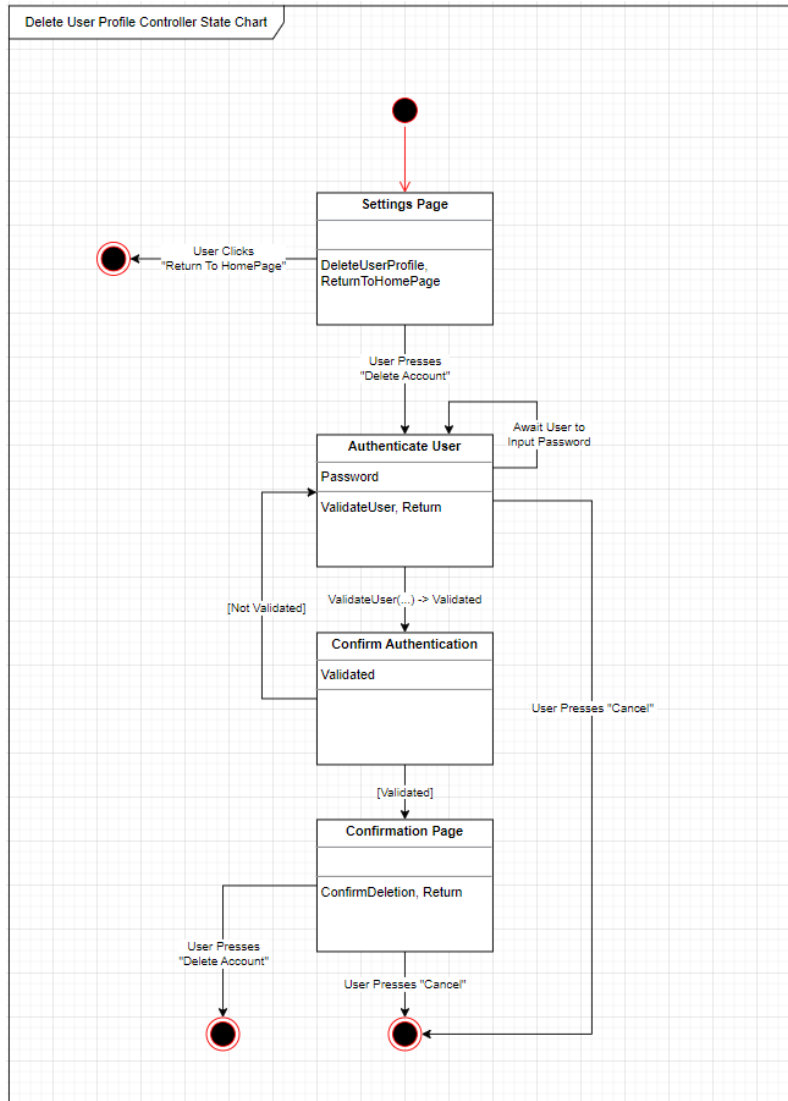


Figure 4: Delete User Profile Controller State Diagram

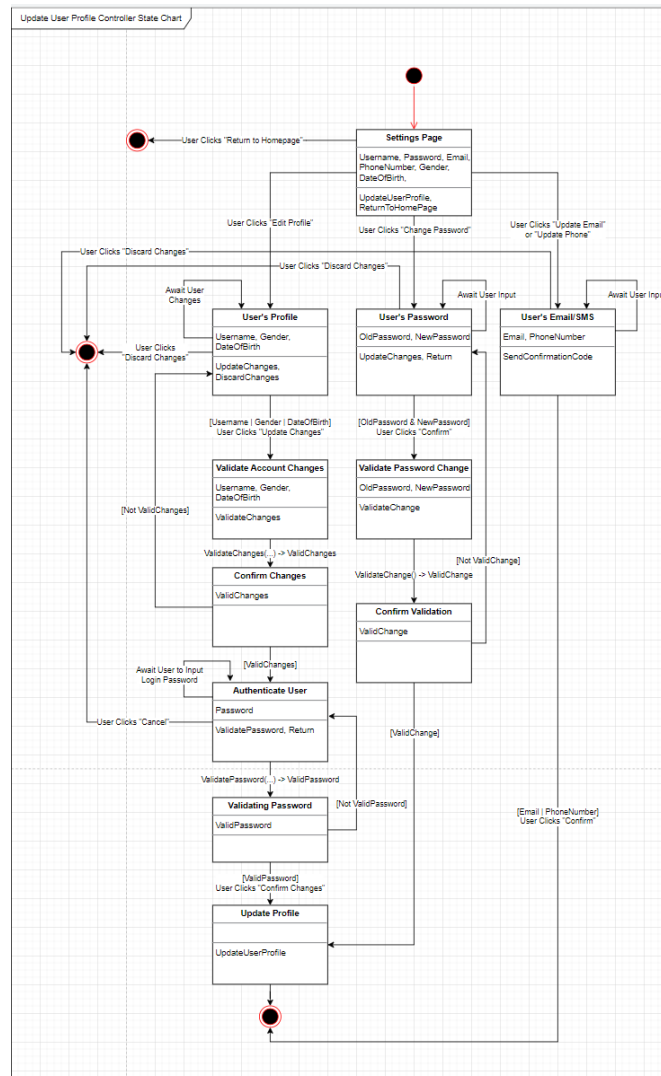


Figure 5: Update User Profile Controller State Diagram

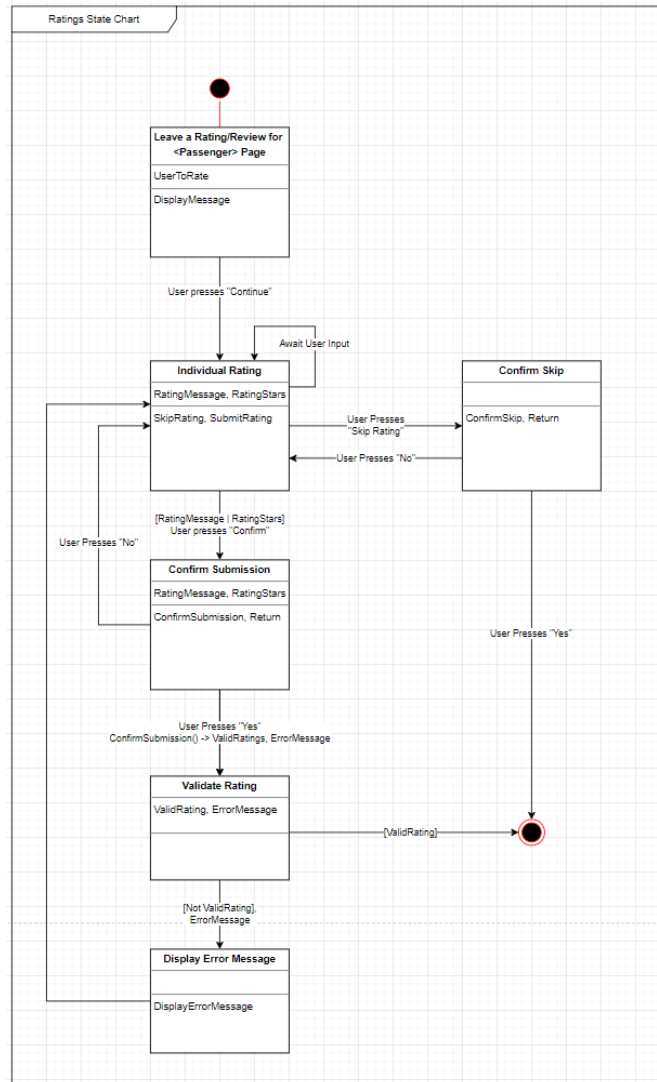


Figure 6: Ratings Controller State Diagram

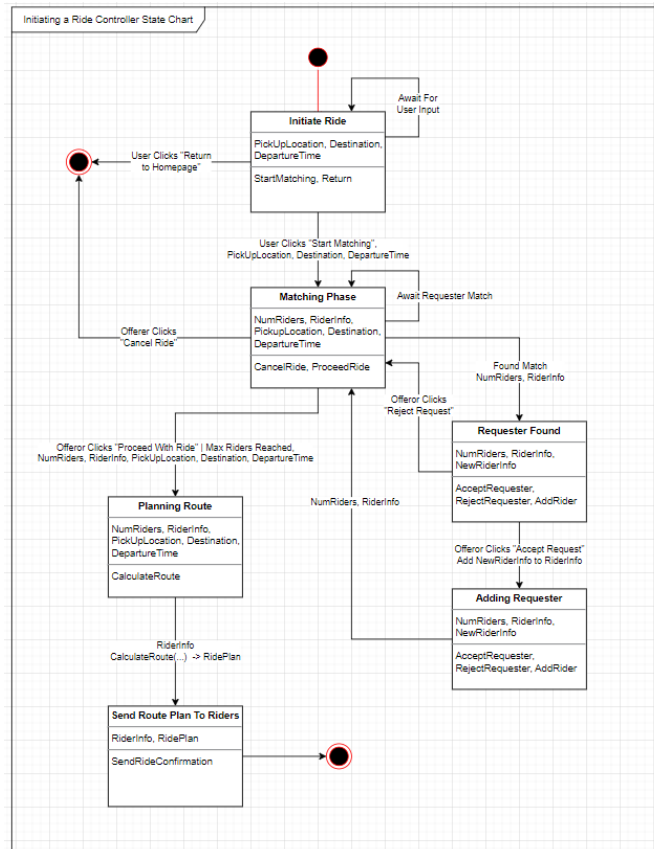


Figure 7: Initiate Ride Controller State Diagram



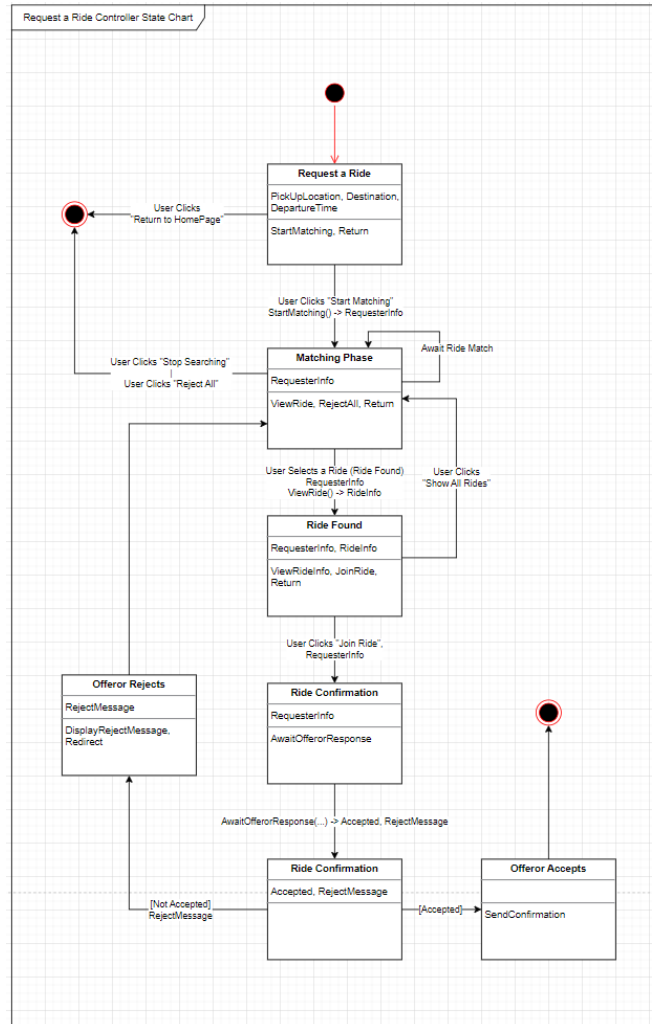


Figure 8: Request a Ride Controller State Diagram

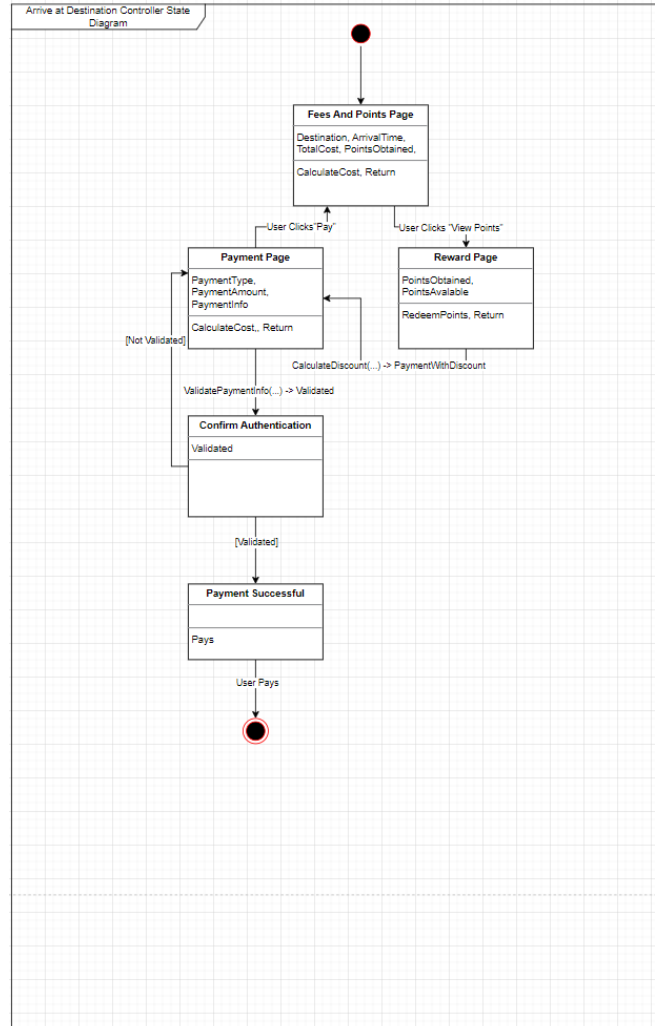


Figure 9: Arrive at Destination Controller State Diagram

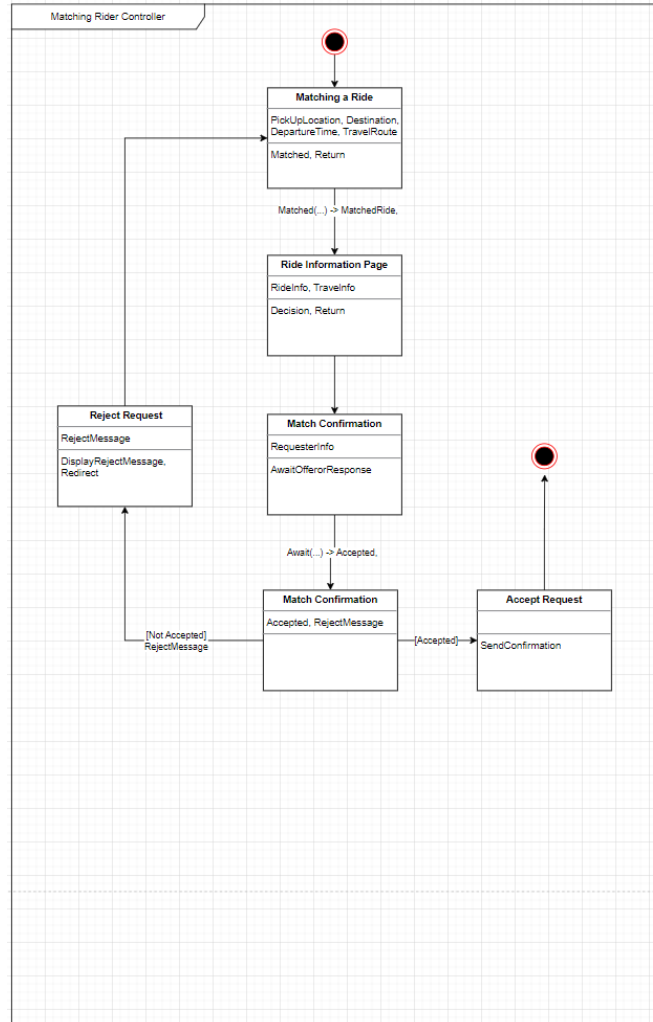


Figure 10: Matching Rider Controller State Diagram

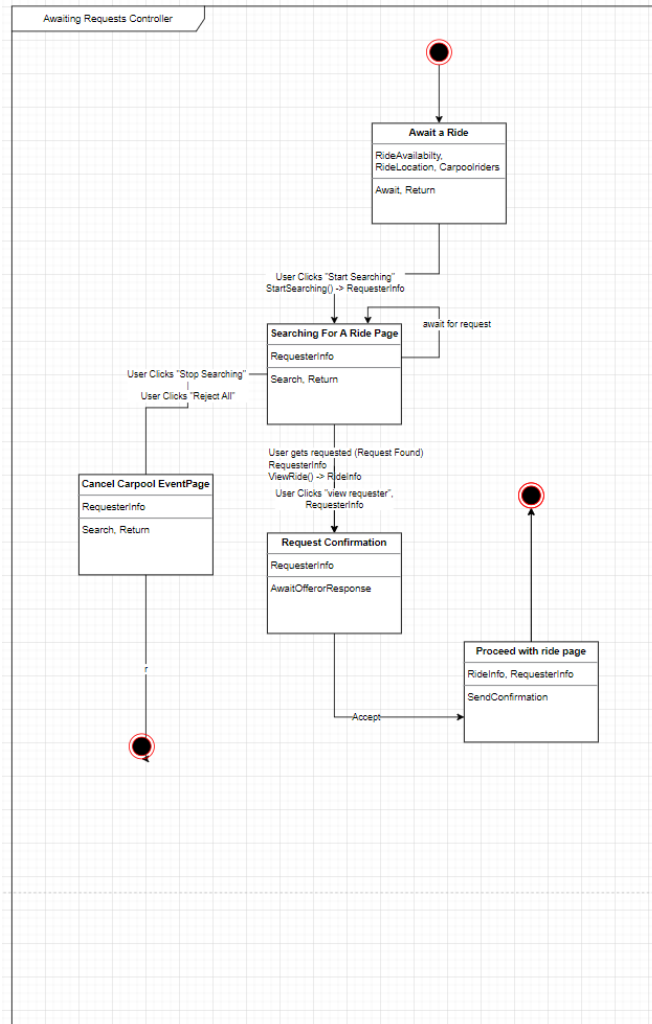


Figure 11: Awaiting Requests Controller State Diagram

### 3 Sequence Diagrams

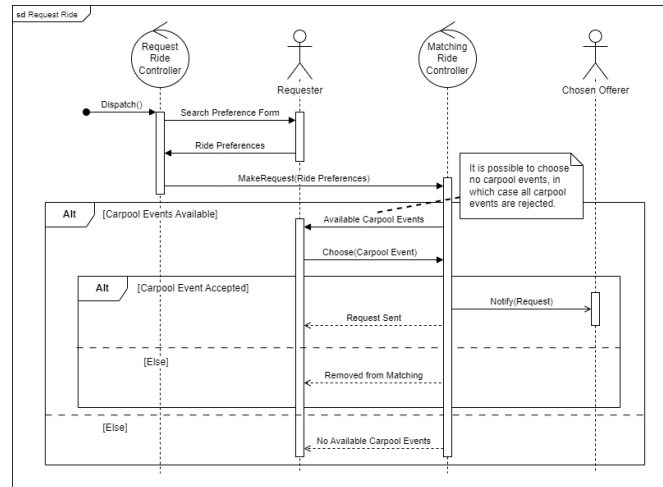


Figure 12: Request Ride Sequence Diagram

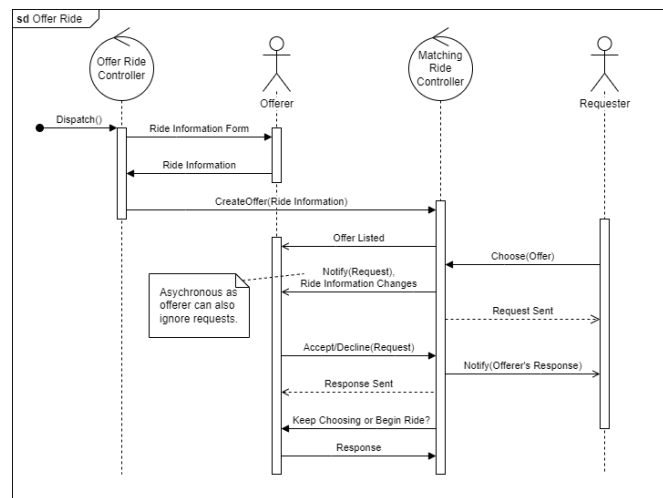


Figure 13: Offer Ride Sequence Diagram

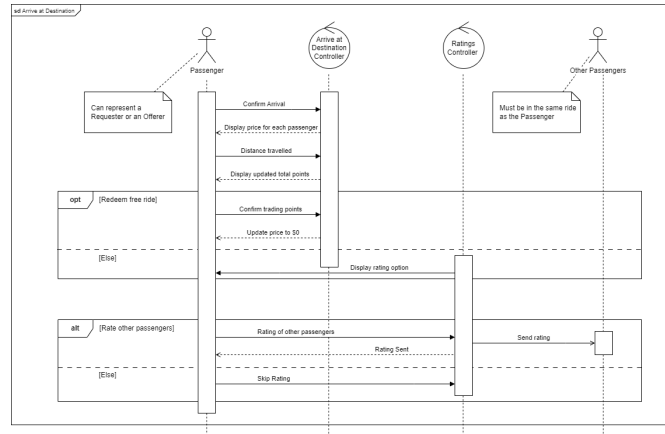


Figure 14: Arrive at Destination Sequence Diagram

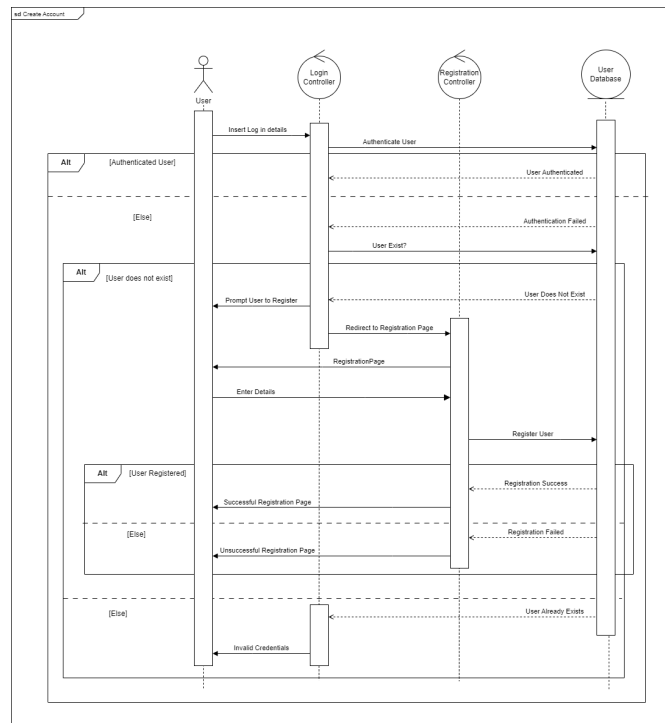


Figure 15: Login/Create Account Sequence Diagram

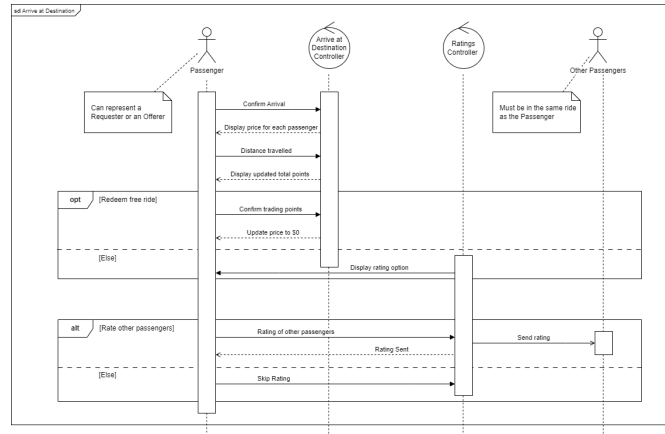


Figure 16: Remove Account Sequence Diagram

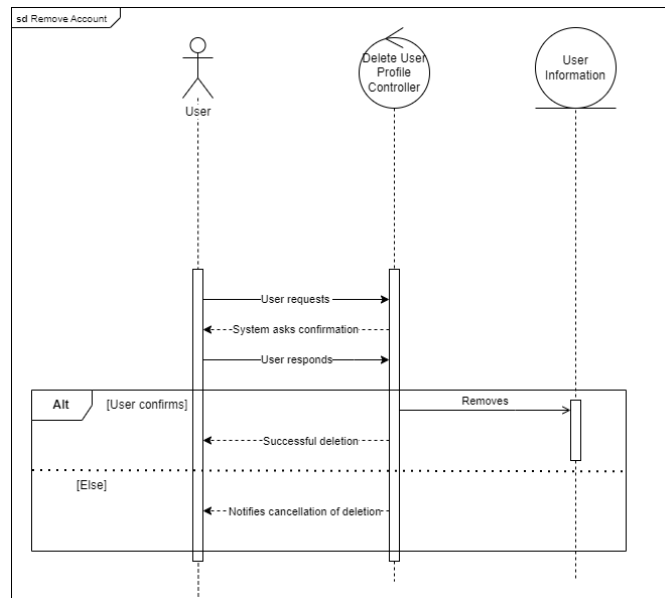


Figure 17: Update Account Sequence Diagram

## 4 Detailed Class Diagram

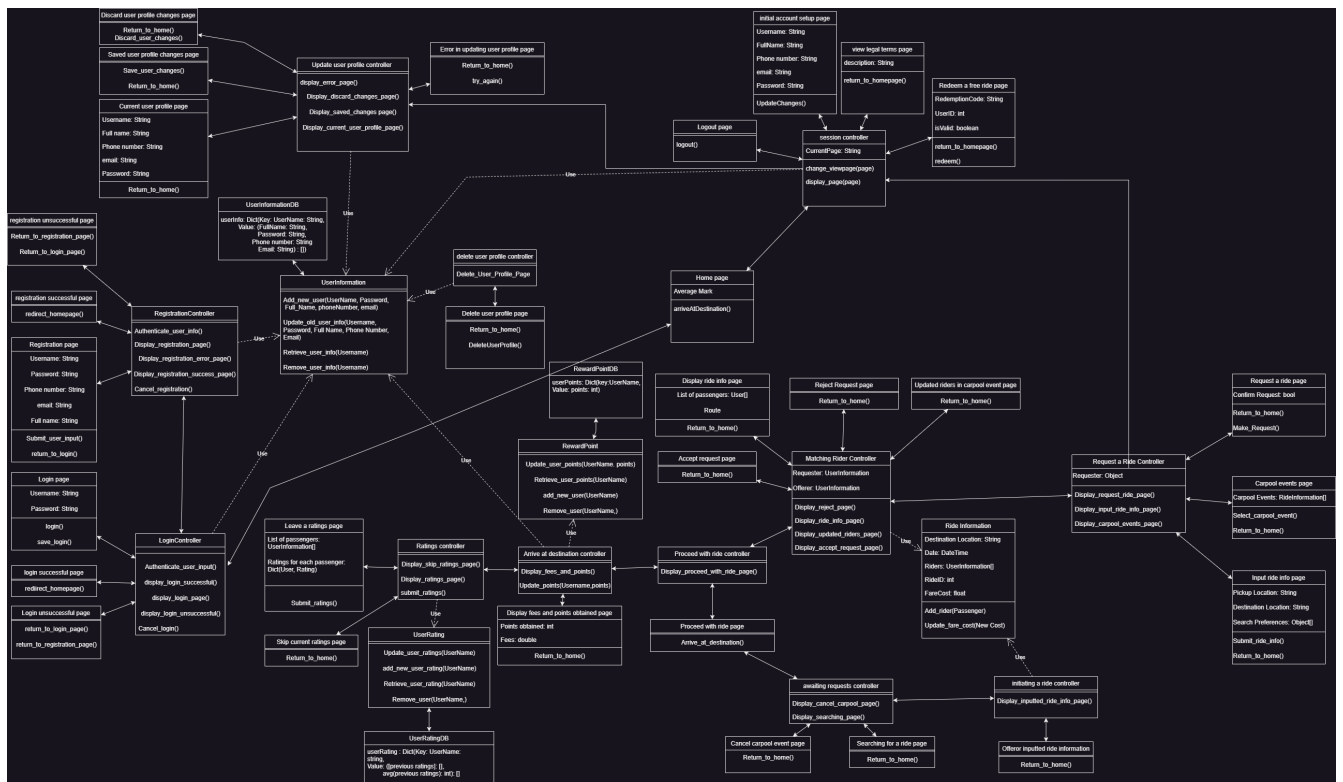


Figure 18: Detailed Class Diagram

## A Division of Labour

Include a Division of Labour sheet which indicates the contributions of each team member. This sheet must be signed by all team members.



Team Member	Contribution
Adam Mak	Purpose, Overview, Request and Offer Ride sequence diagram, contributed to the detailed class diagram. Signed by: Adam Mak
Eric Chen	State Diagrams: Update User Profile Controller, Registration Controller, Login Controller, Delete User Profile Controller, Ratings Controller, Initiating a Ride Controller, Request a Ride Controller, Legend. Contributed to the detailed class diagram. Signed by: Eric Chen
Justin Ho	Class diagrams layout, organization and connections. Class attributes and methods. Fixed errors from previous deliverable Signed by: Justin Ho
Ahmad Hamadi	Await Requests Controller State, Login Controller State Chart, initiate ride Controller State Chart, Controller State Chart, Arrive at destination Controller State Chart, Matching Rider Controller State Chart, Contributed to detailed class diagram. Signed by: Ahmad Hamadi
Kevin Ishak	Create Account Sequence diagram, Arrive at Destination Sequence diagram and Assisted in creating some of the classes for the Detailed Class Diagram. Signed by: Kevin Ishak
Jonathan Jiang	Update account sequence diagram, Remove account sequence diagram, System Description, Overview, contributed to discussions. Signed by: Jonathan Jiang

## IMPORTANT NOTES

- You do NOT need to provide a text explanation of each diagram; the diagram should speak for itself
- Please document any non-standard notations that you may have used
  - *Rule of Thumb*: if you feel there is any doubt surrounding the meaning of your notations, document them
- Some diagrams may be difficult to fit into one page
  - It is OK if the text is small but please ensure that it is readable when printed
  - If you need to break a diagram onto multiple pages, please adopt a system of doing so and thoroughly explain how it can be reconnected from one page to the next; if you are unsure about this, please ask me
- Please submit the latest version of Deliverable 1 and Deliverable 2 with Deliverable 3
  - They do not have to be a freshly printed versions; the latest marked versions are OK
- If you do NOT have a Division of Labour sheet, your deliverable will NOT be marked