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Politecnico di Milano

Software Engineering 2 Project
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Customers Line-up
Design Document

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Chapter 1

Introduction

1.1 Purpose

The Design Document aims to give usefull information to help in software development by providing the details for how the software should be built. In particolar it should be detailed enough so that developers could code the project without having to make any significant decisions. This is done thanks to detailed description with graphical documentation of the software design for the project including different diagram types and other supporting requirement informations.

1.2 Scope

The main scope of the system is to provide users the possibility to make a booking in order to give access to the market. This could be done with two options: the first allows users to be inserted in the virtual queue; instead, the second give the possibility to schedule the booking in a precise moment in an particular day. So, the system have to reply users' requests in real time without waiting more than few seconds due to its reliability. To achieve this, the system is organized with a three tiers architecture which divides the systems in independent modules: presentation, application and a data tier. The detailed architecture will be described as well in the next chapter.

1.3 Definitions, Acronyms, Abbreviations

Bottom Navigation Bar

1.4 Revision history

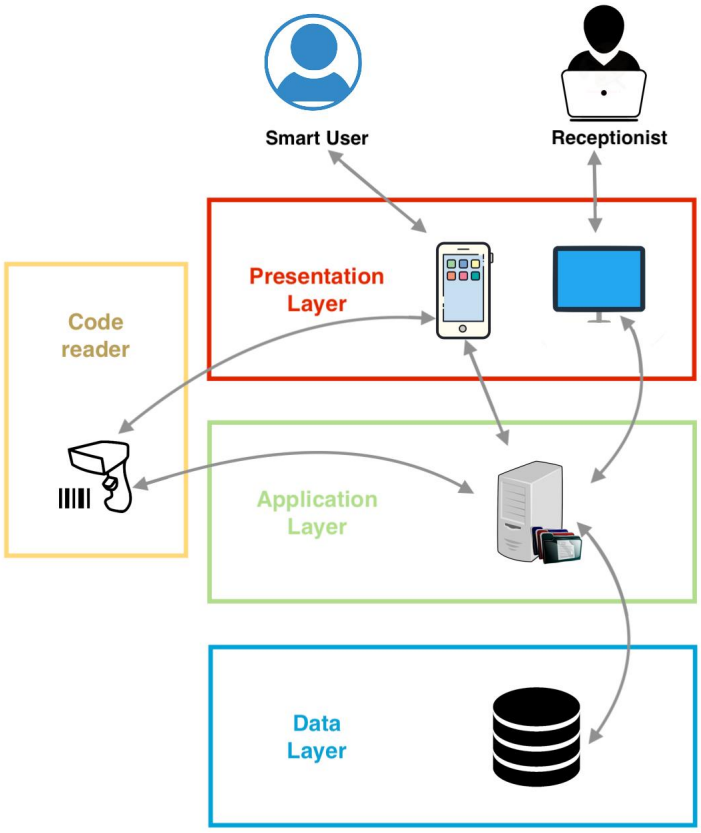
1.5 Reference Documents

1.6 Document Structure

Chapter 2

Architectural Design

Figure 2.1: Three tiers architecture of the system



2.1 Overview: High-level components and their interaction

The system is organized following the three tiers architecture. This aims to decouple logical layers in order to gurantee an horizontal scalability and a low fault tolerance. Graphically it's shown in the figure 2.1.

Presentation layer. It's the front end layer which consists of the user interface. We have two types of user interface, depending on his functionality:

- **CLup**: It's the mobile application used by users who have a smartphone. They can manage their booking by themselves;
- **CLup Operator**: It's the desktop application used by receptionists that act as an intermediary to manage booking of users that have only a mobilephone.

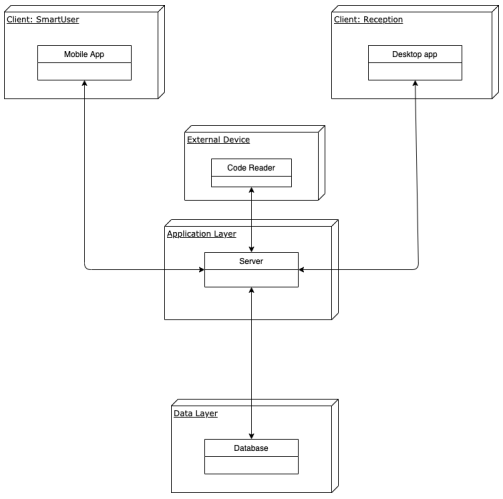
Application layer. It deals with the model of the system, by containing the business logic of the application. In our system it consists in a remote server to which mobile and desktop applications have to connect due to manage any bookings.

Data layer. It's composed by a data storage system. It includes:

- User sensitive data asked during the registration process;
- Information about user's grocery shopping;

2.2 Component view

Figure 2.2: High-Level component diagram



component diagram ogni componente descritto er diagram o class diagram specificp

-strittura -model applicazione -database

2.3 Deployment view

-deployment diagram

2.4 Runtime view

sequence diagrams

2.5 Component interfaces

ogni componente app server+db laptop receptionist

2.6 Selected architectural styles and patterns

mvc + tier + ..

2.7 Other design decisions

security+google api asyncrnous coomunication because eccc

Chapter 3

User Interface Design

In this chapter we will illustrate most of action allowed in CLup and CLup Operator using UI flowchart digrams. UI flowchart diagrams are used to model the interactions that users have with the software, by understanding how the system is expected to work. Diagrams are built using the mockups already put in the RASD, but in a more detailed way.

3.1 Mobile Interface: CLup

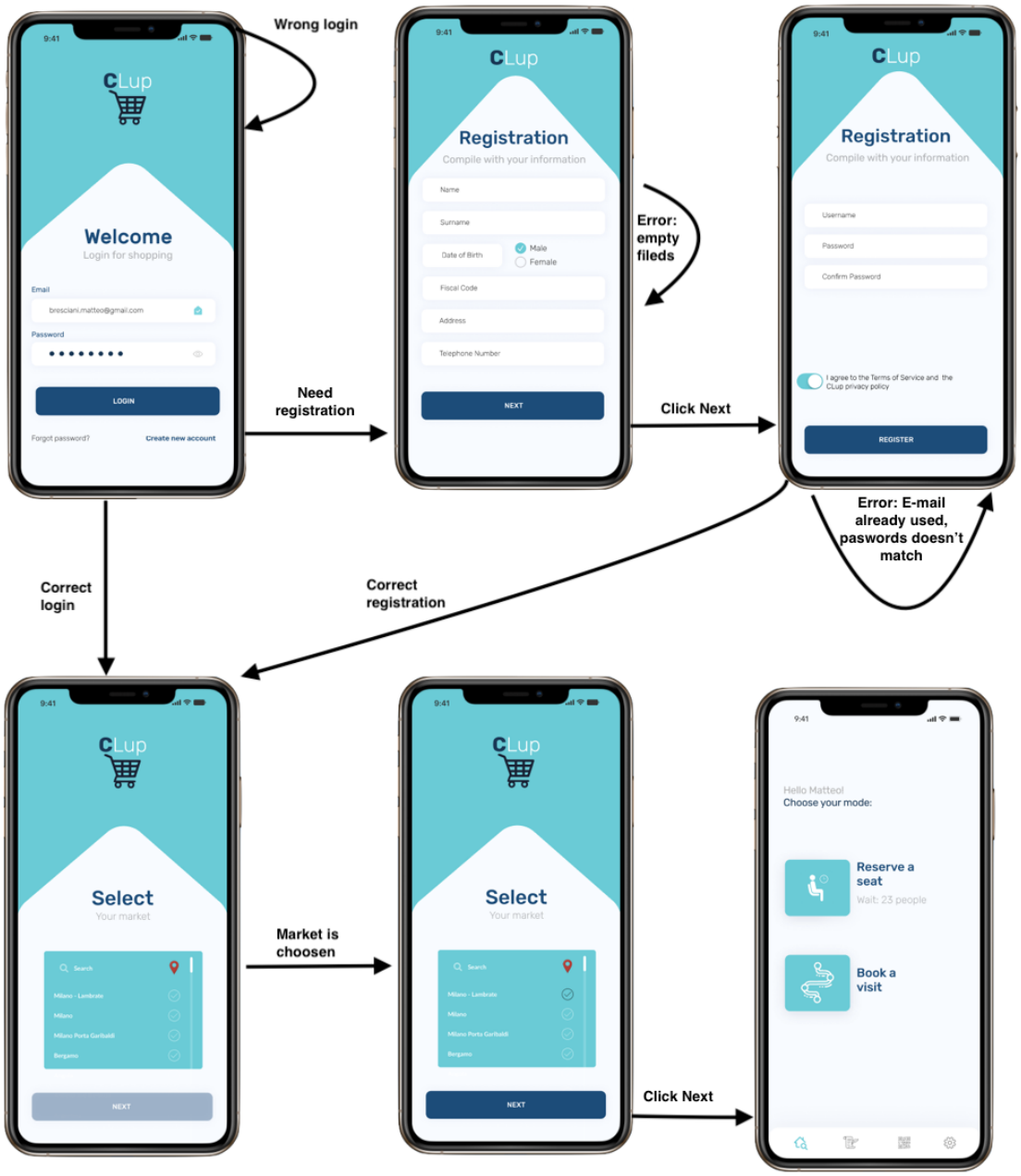


Figure 3.1: Login and registration interface: starting from the first screenshot the user must authenticate or register himself to use CLup. Hypothetically if a User signs up for the first access, he will be already logged in. After procedure the home screen will be displayed.

Figure 3.2: From the home screen it's possibile to move in the other three app section by selecting them in the Bottom Navigation Bar

Figure 3.3: Procedure needed to book a Visit.

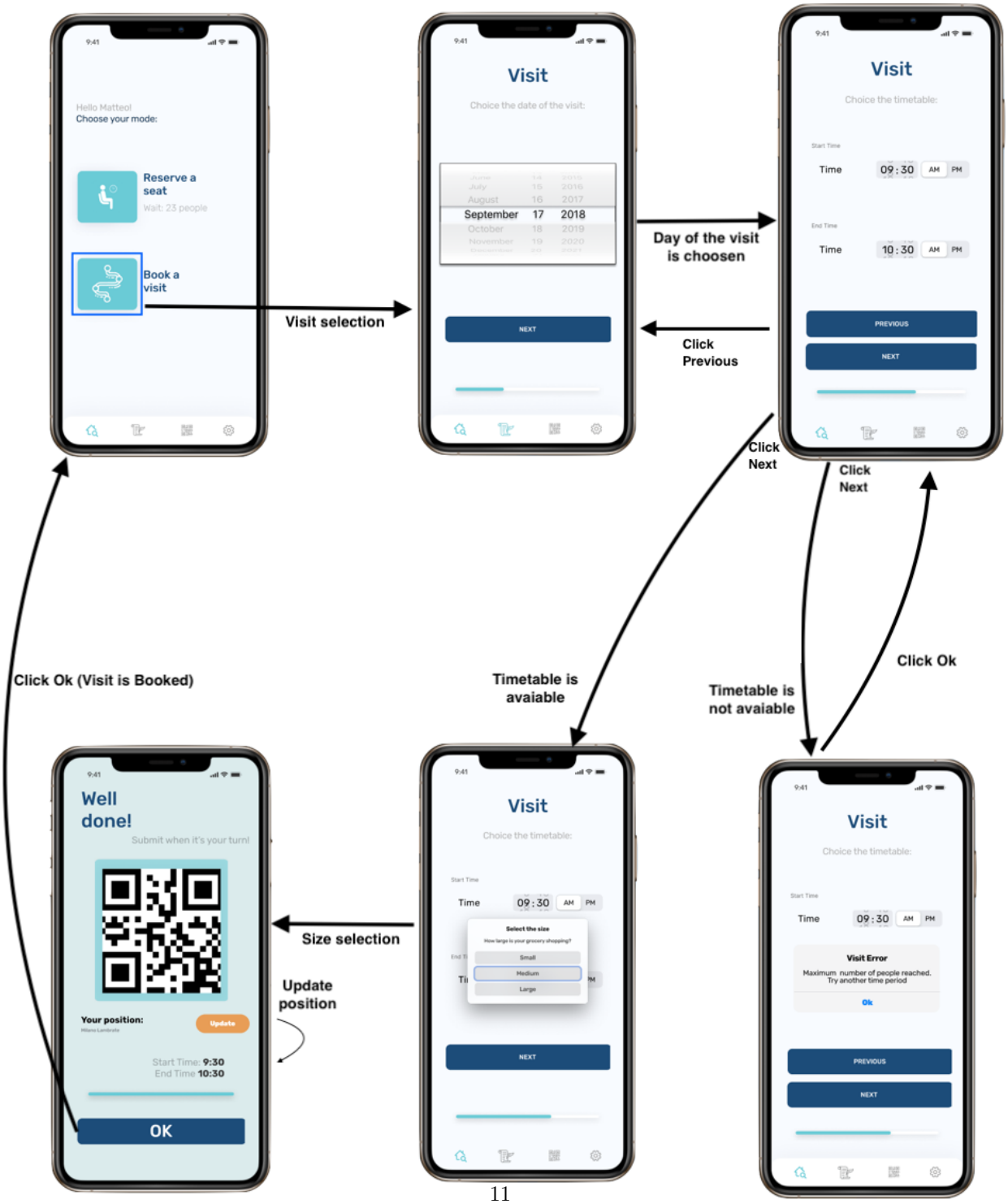


Figure 3.4: Procedure needed to make a Reservation.

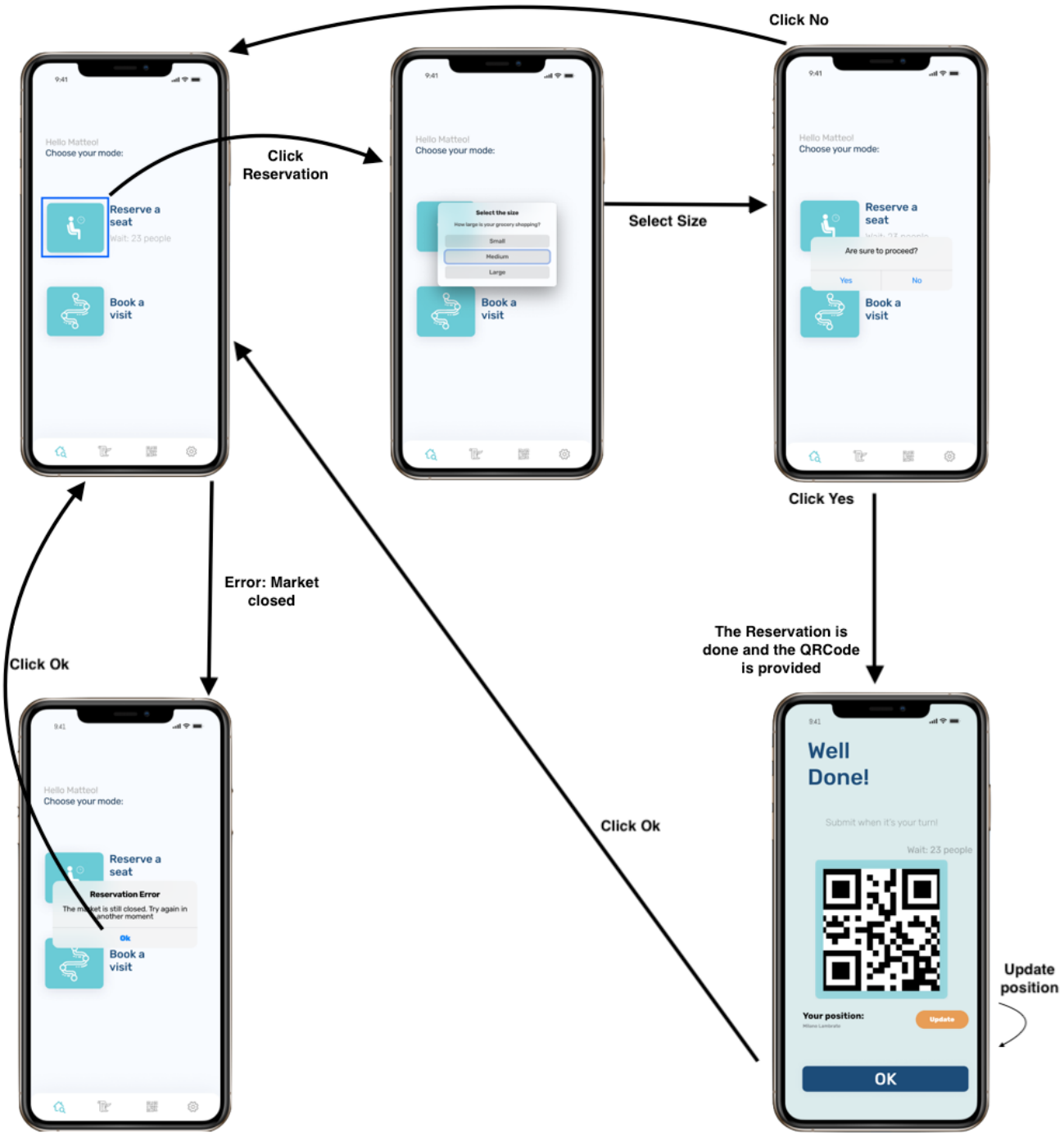
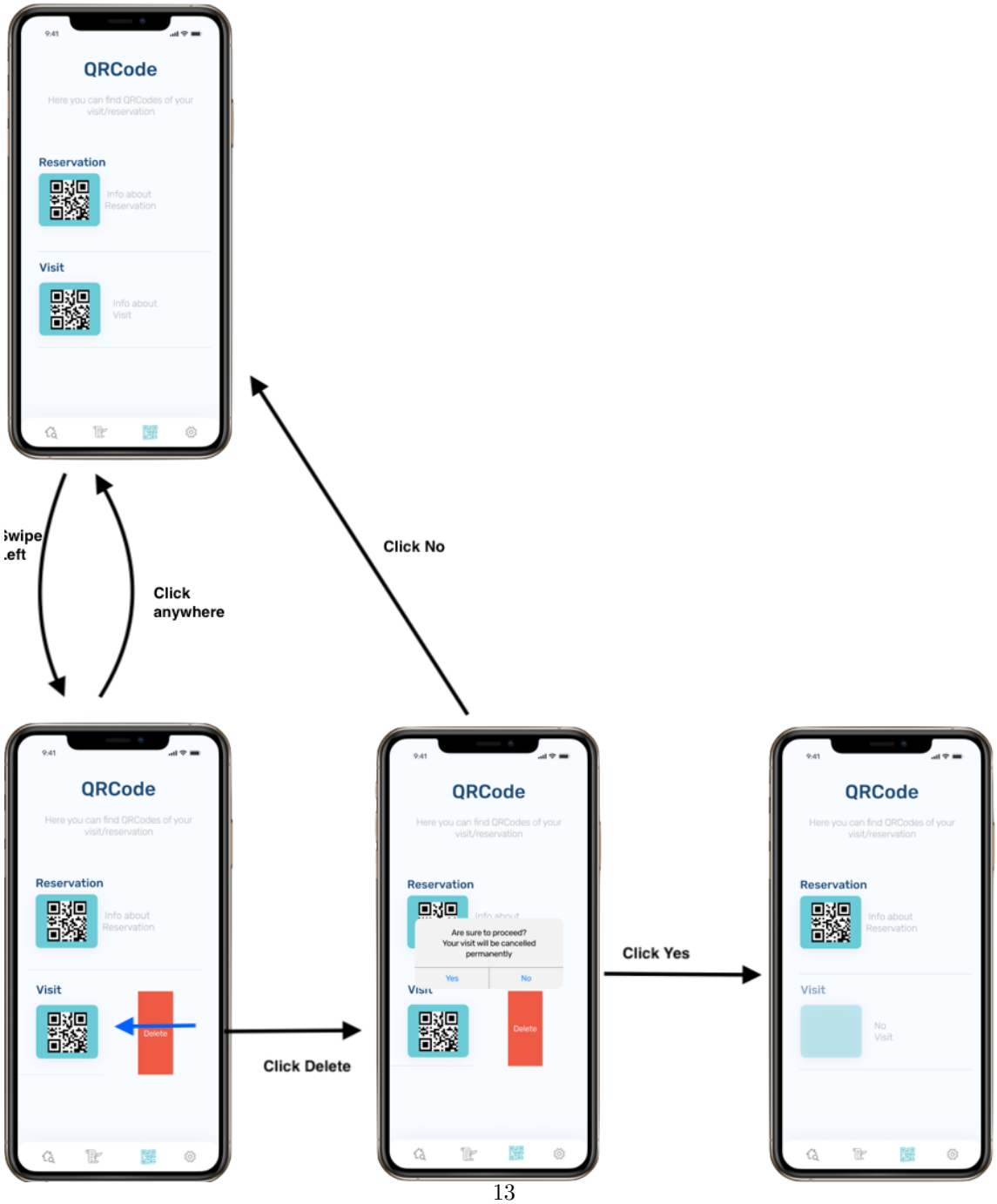


Figure 3.5: The diagrams shows how it's possibile, from the QRCode section, to cancel a Visit. The procedure will be the same also for a Reservaiton cancellation. In particular the following screenshoots illustrate the procedure in a scenario in which a user has booked both Reservation and Visit.



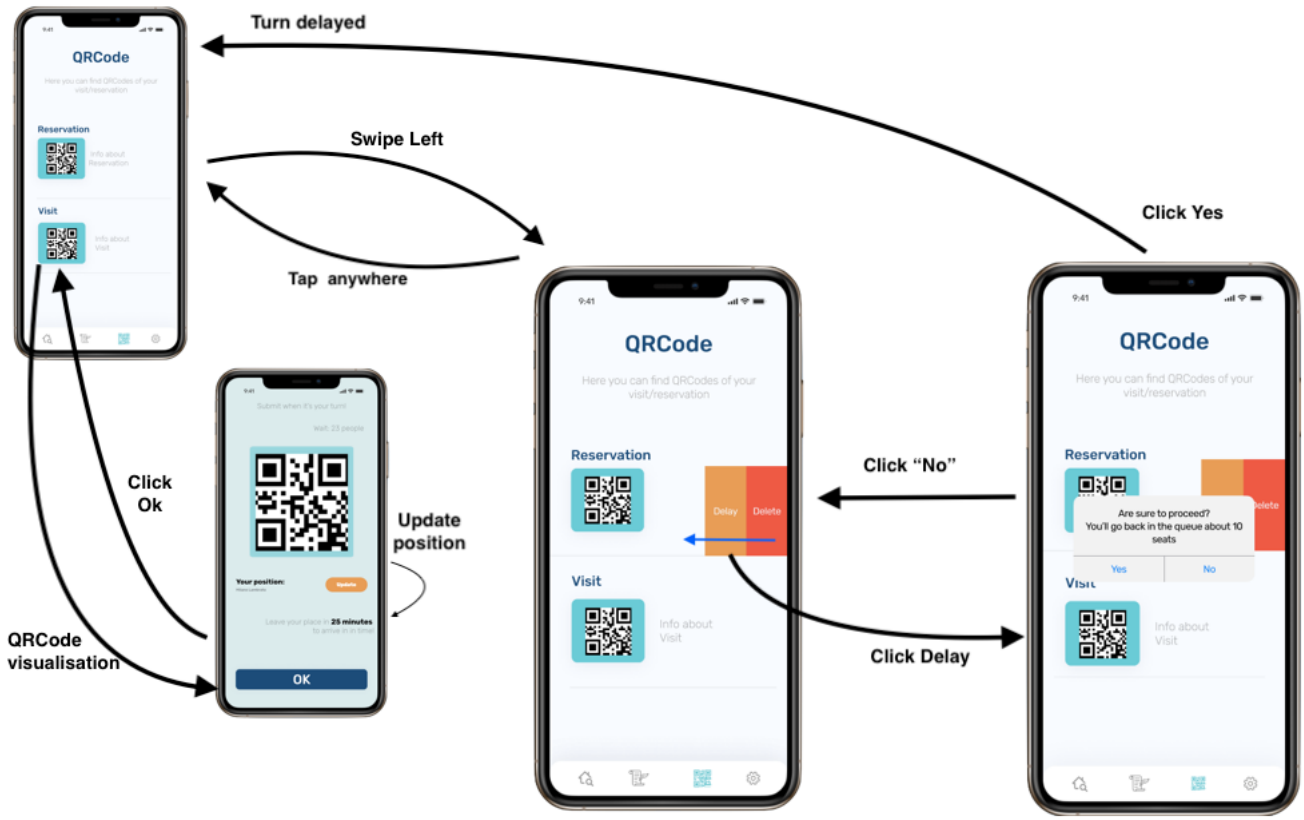


Figure 3.6: The diagrams shows how it's possibile, from the QRCode section, to postpone the own turn in queue for a Reservation. In particular the following screenshoots illustrate the procedure in a scenario in which a user has booked both Reservation and Visit.

3.2 Desktop Interface: CLup Operator

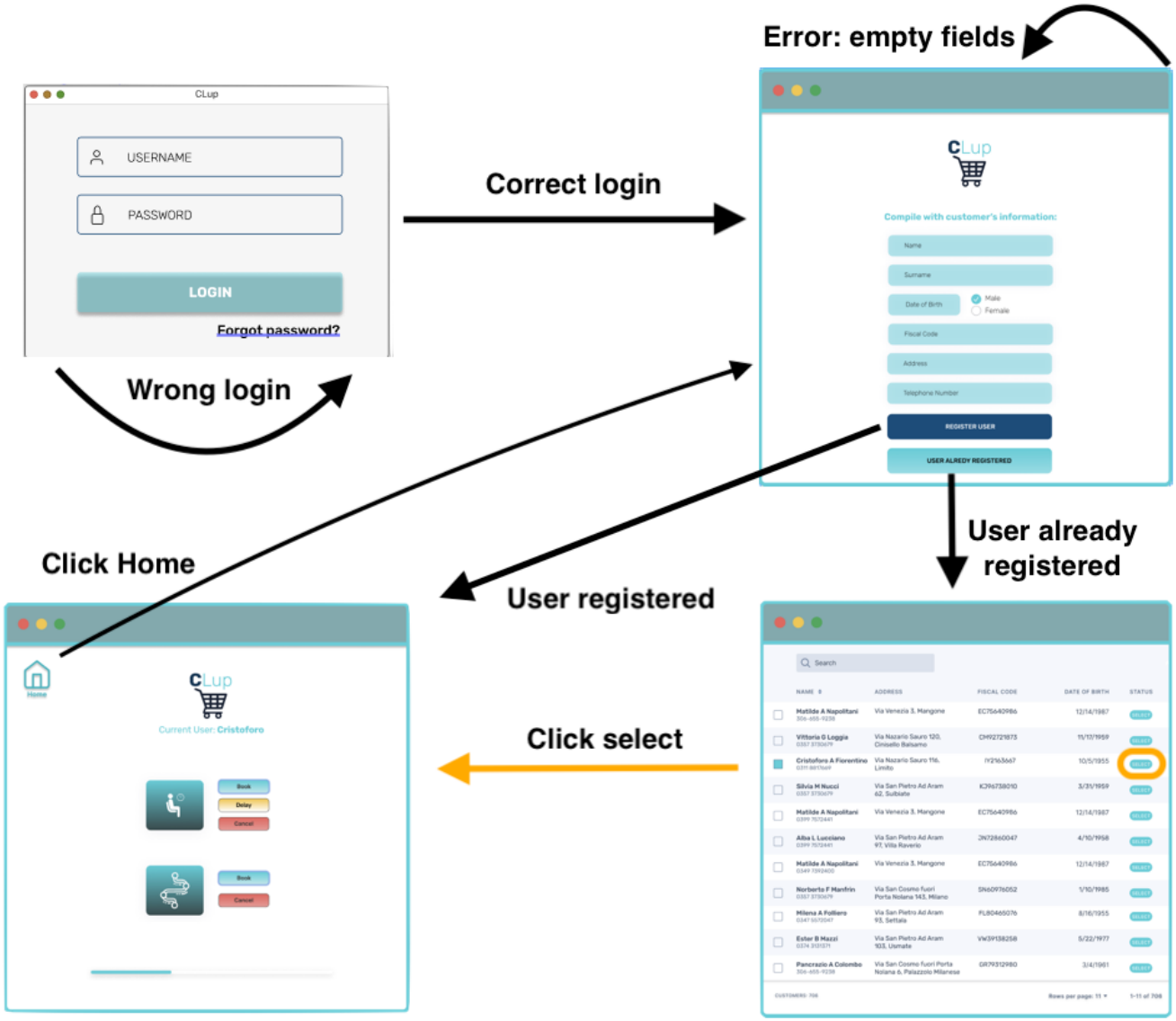


Figure 3.7: A receptionist must authenticate himself before taking into account the user's request. After this the receptionist is able to select an existing or register a new user in order to satisfy his request.

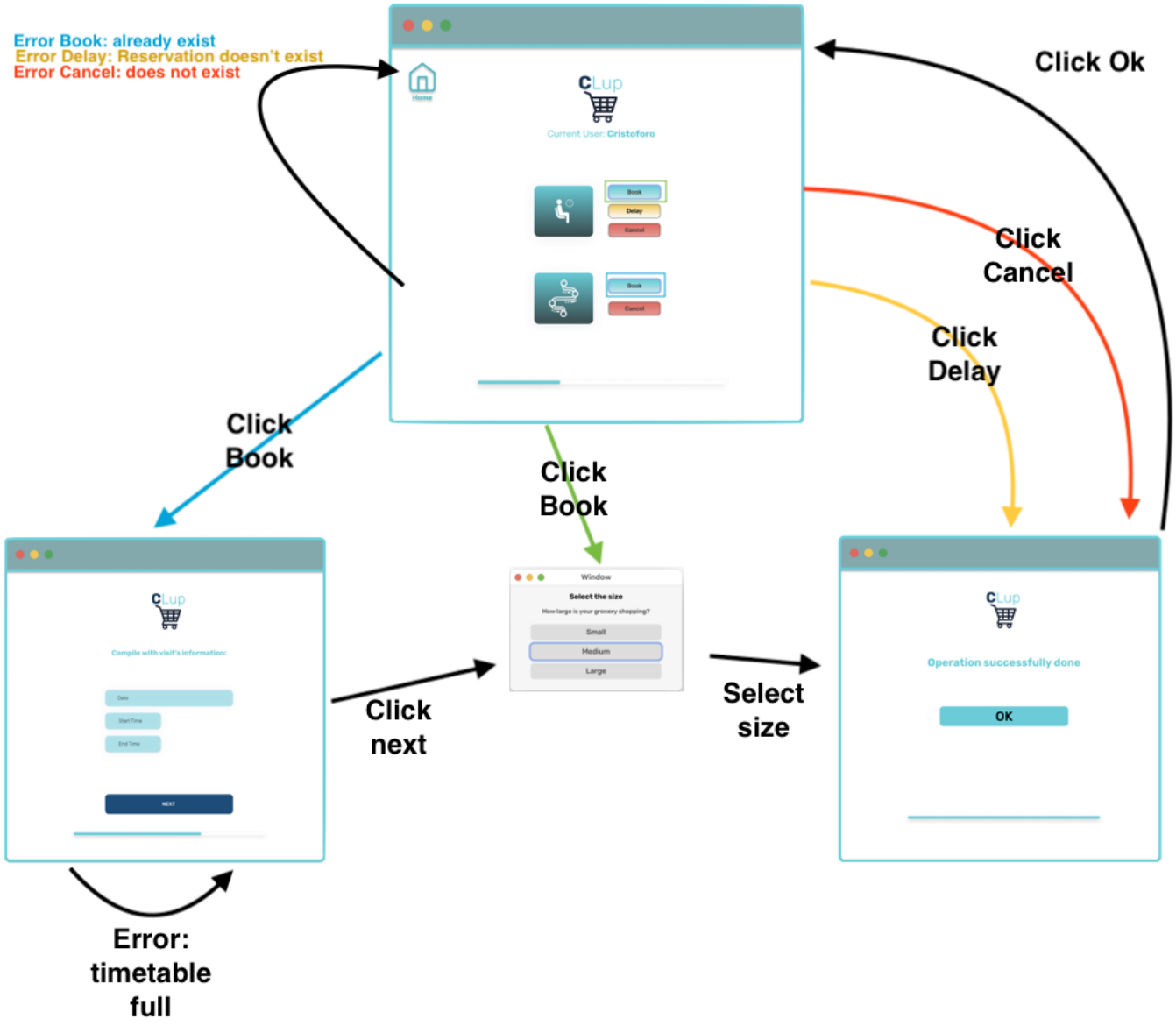


Figure 3.8: The following screenshots illustrate how a receptionist can manage user's request through some steps.

Chapter 4

Requirements Tracebility

requirement of rasd in relation to components

Chapter 5

Implementation, Integration and Test Plan

how to (dividing each parts)

testing how to integratio plan

Chapter 6

Effort Spent

Chapter 7

References