



CLUP

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1ST FEBRUARY 2021

GOALS

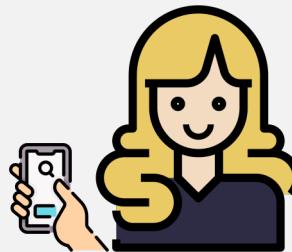
PART I

- [G.1] Allows Store Managers to **regulate** the influx of the people in their store
- [G.2] Allows Customers to **line up** from their home
- [G.3] Allows Guests to **line up** physically from a store

ACTORS



GUEST



CUSTOMER



STORE
MANAGER

GOALS

PART II

- [G.6] Allows Customers to **book a visit** to a specific store in a specific date
- [G.9] Provides Customers with periodic **notifications** about available slots in the day/time range they usually shop
- [G.4] Allows Store Manager to keep access data under control

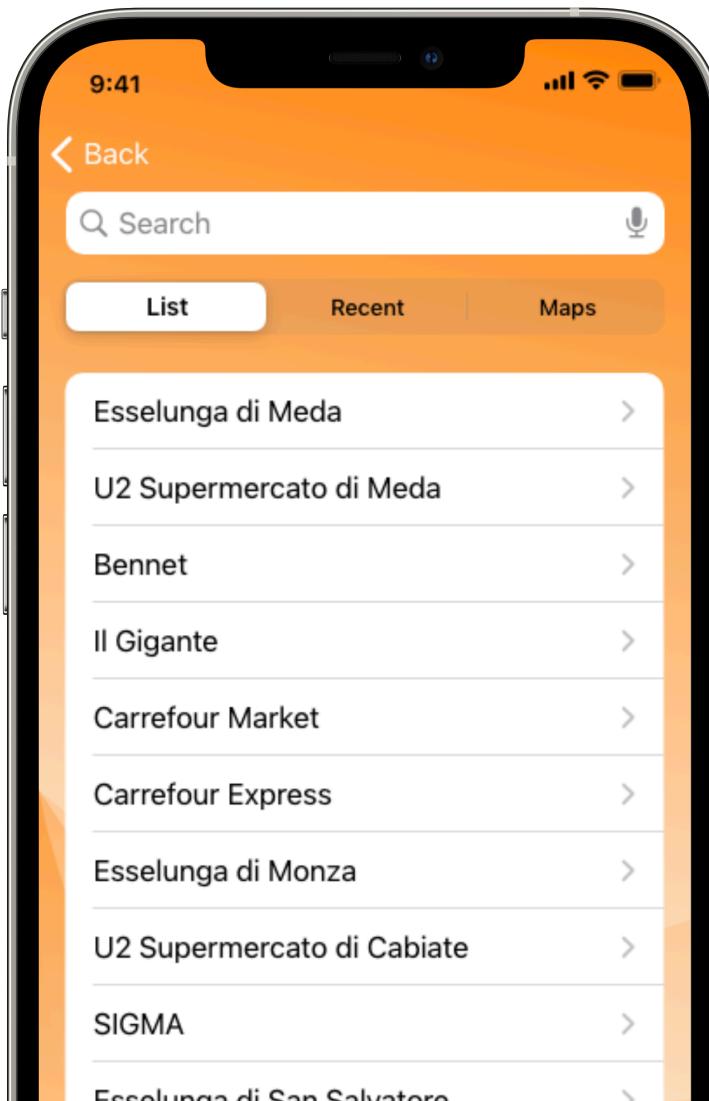
DOMAIN ASSUMPTION

- [D.1] No client, be it a Customer or a Guest, can **enter** a store without having shown a QR code at the entrance
- [D.2] No client, be it a Customer or a Guest, can **leave** a store without having shown a QR code at the exit

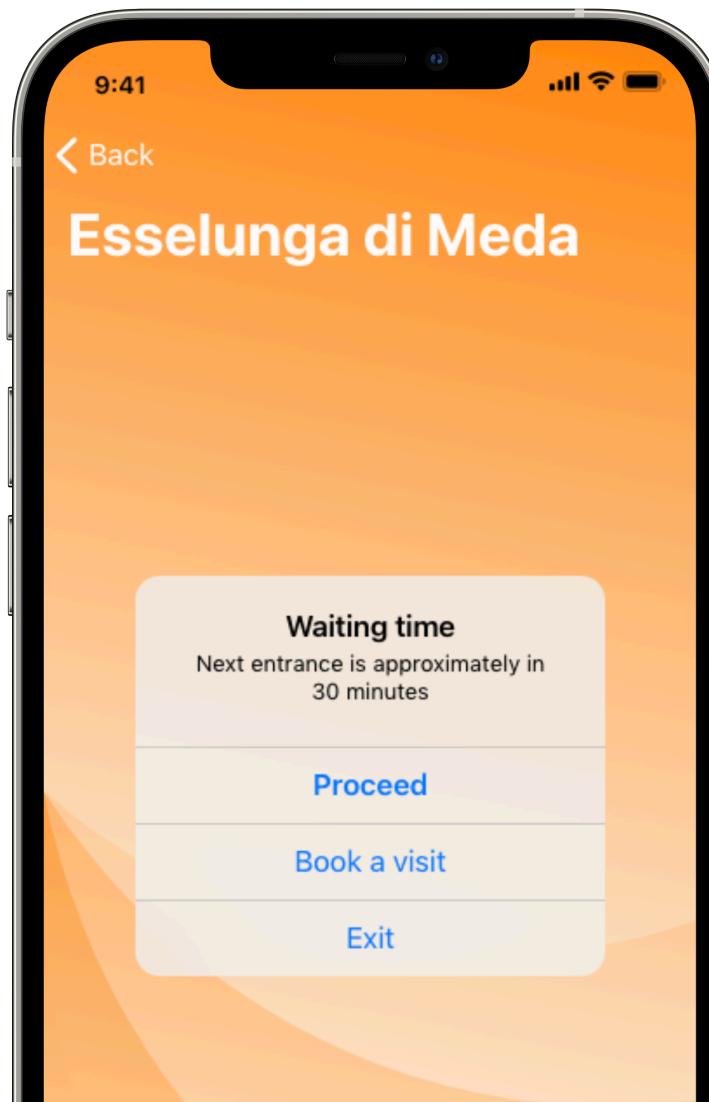
SPECIFIC REQUIREMENTS

- **QR code readers** positioned in front of all the entrances and exits of the buildings
- Remotely controllable **sliding doors**
- A **device** to show which Store Clients are allowed to enter the store
- A **device** that allows Guests to receive paper ticket.

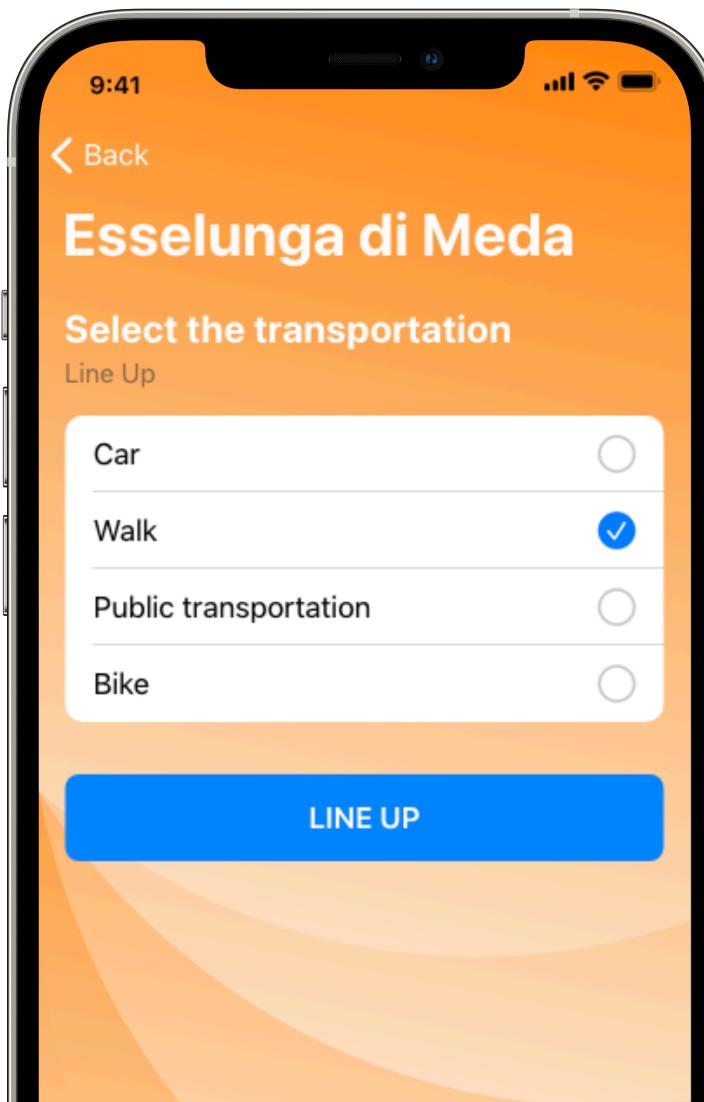
[UC.5] CUSTOMER LINE UP



[UC.5] CUSTOMER LINE UP



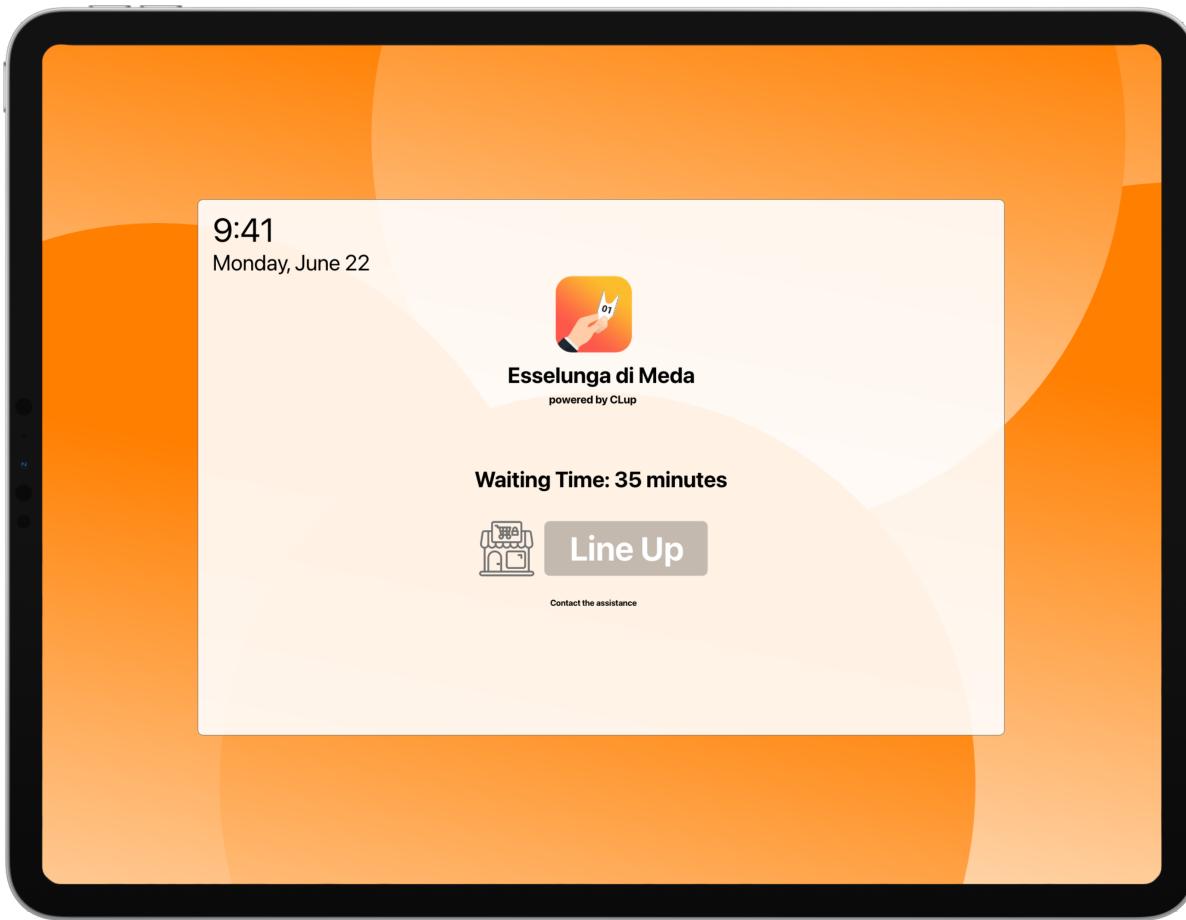
[UC.5] CUSTOMER LINE UP



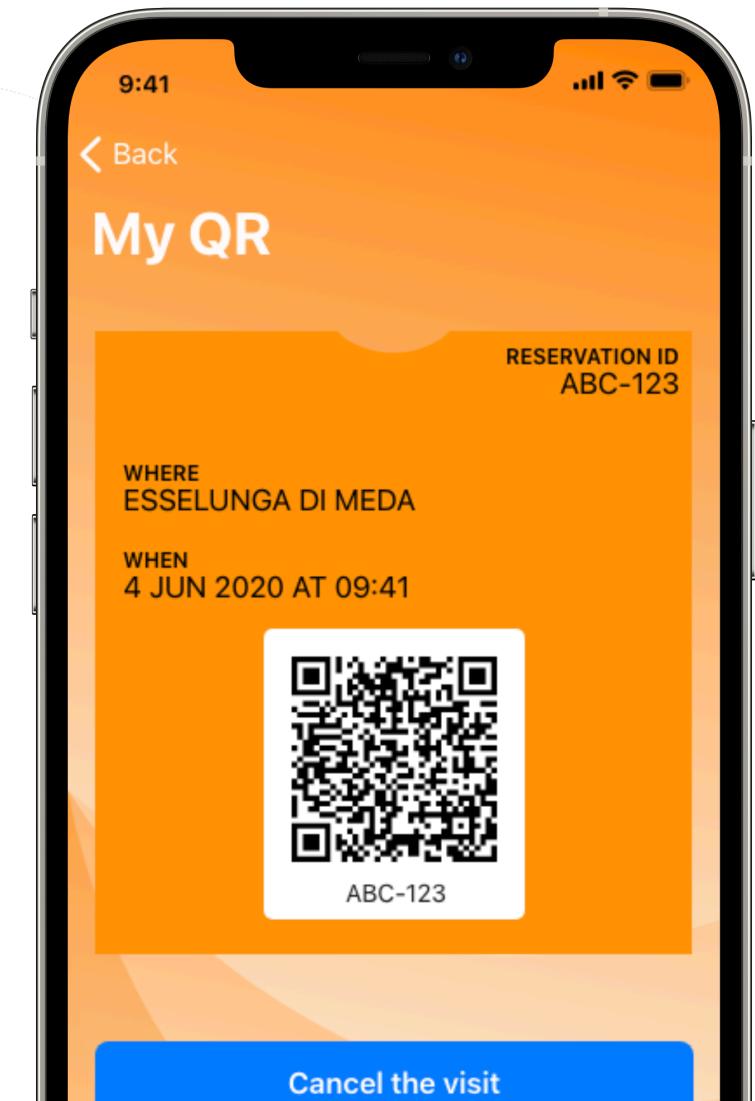
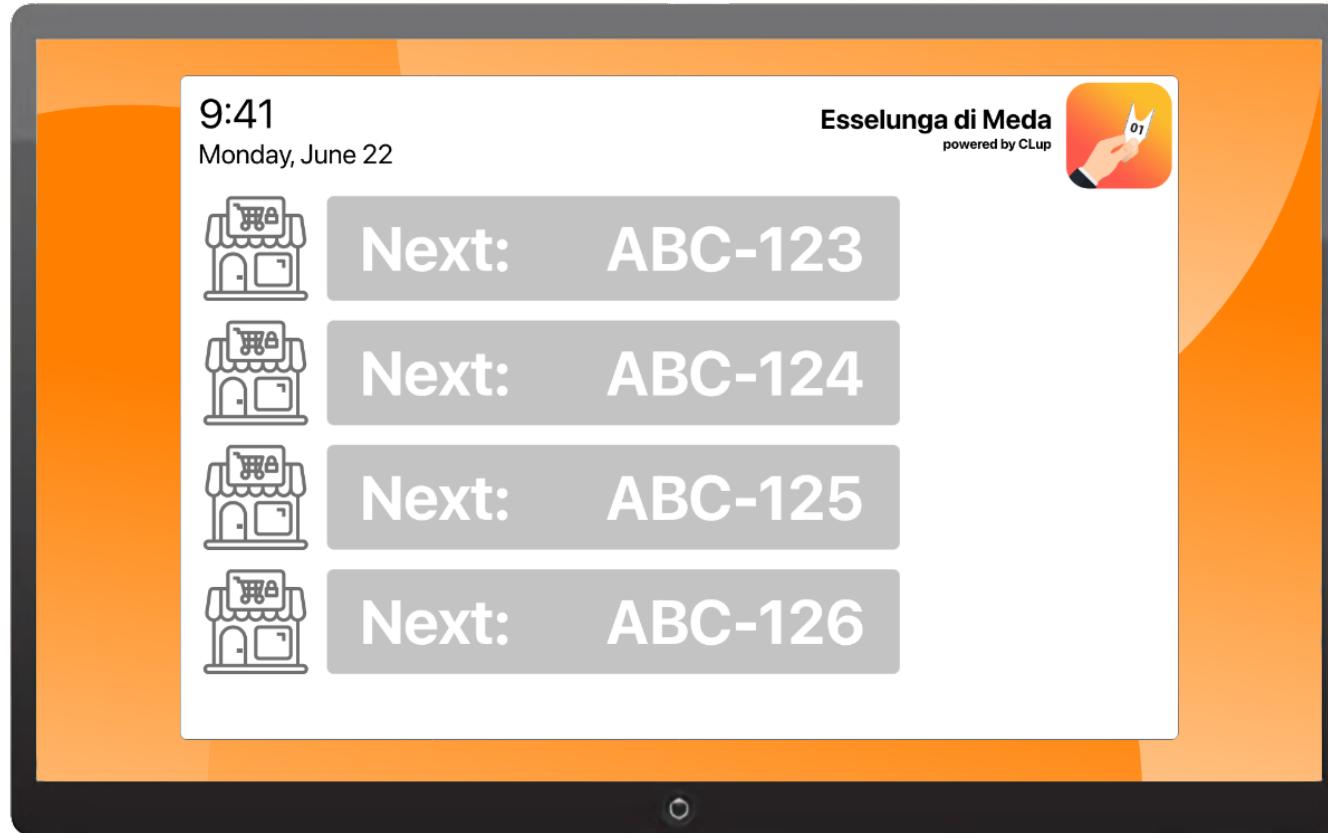
[UC.5] CUSTOMER LINE UP



[UC.7] GUEST LINE UP



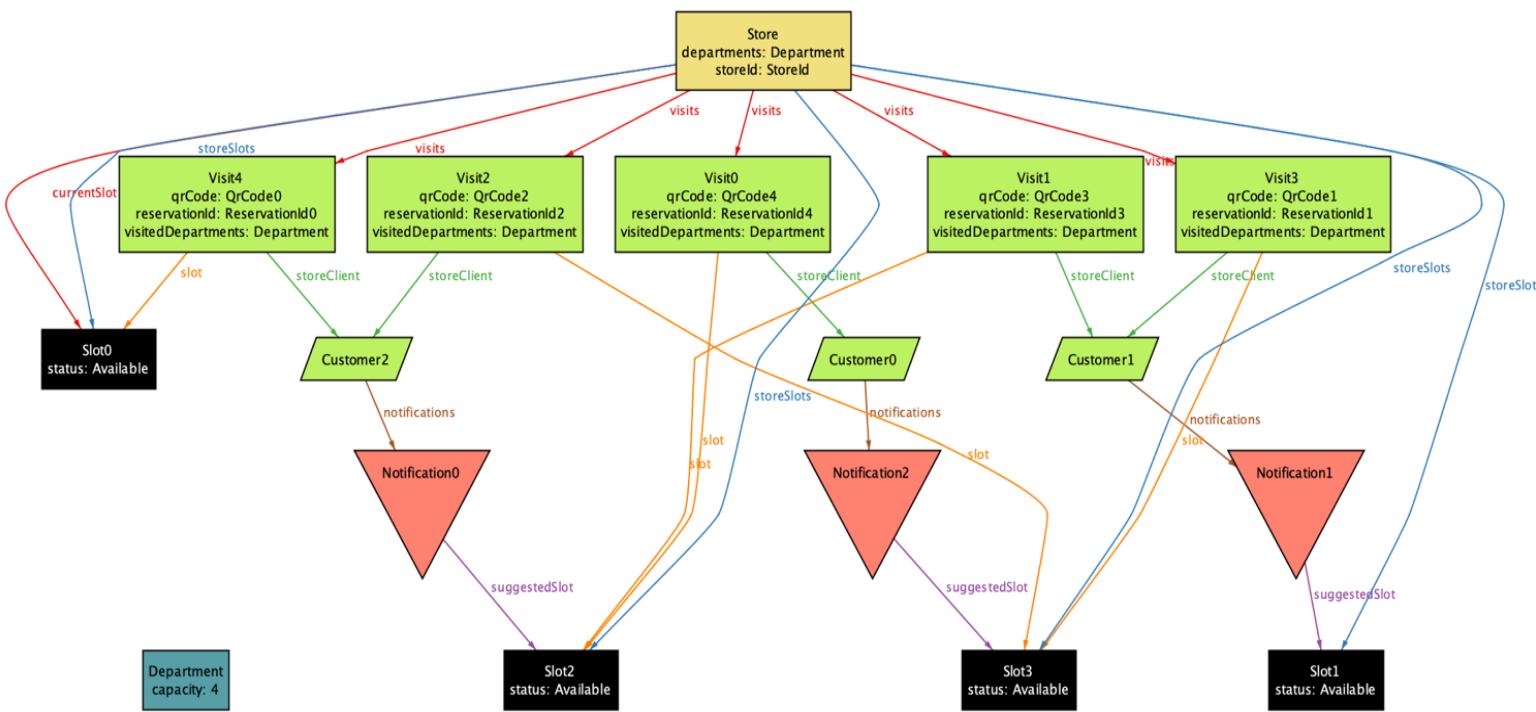
[UC.10/11] CUSTOMER/GUEST ENTERS A STORE



REQUIREMENTS

- [R.9][R.10][R.11][R.12]
The System must be able to **generate tickets** and associate them a unique **identifier**
- [R.14][R.15][R.16]
The System must be able to **read QR codes** at the entrance/exit and **control the sliding doors** of a store
- [R.21]
The System must store **historical data** in order to compute estimations and **schedule** the visits

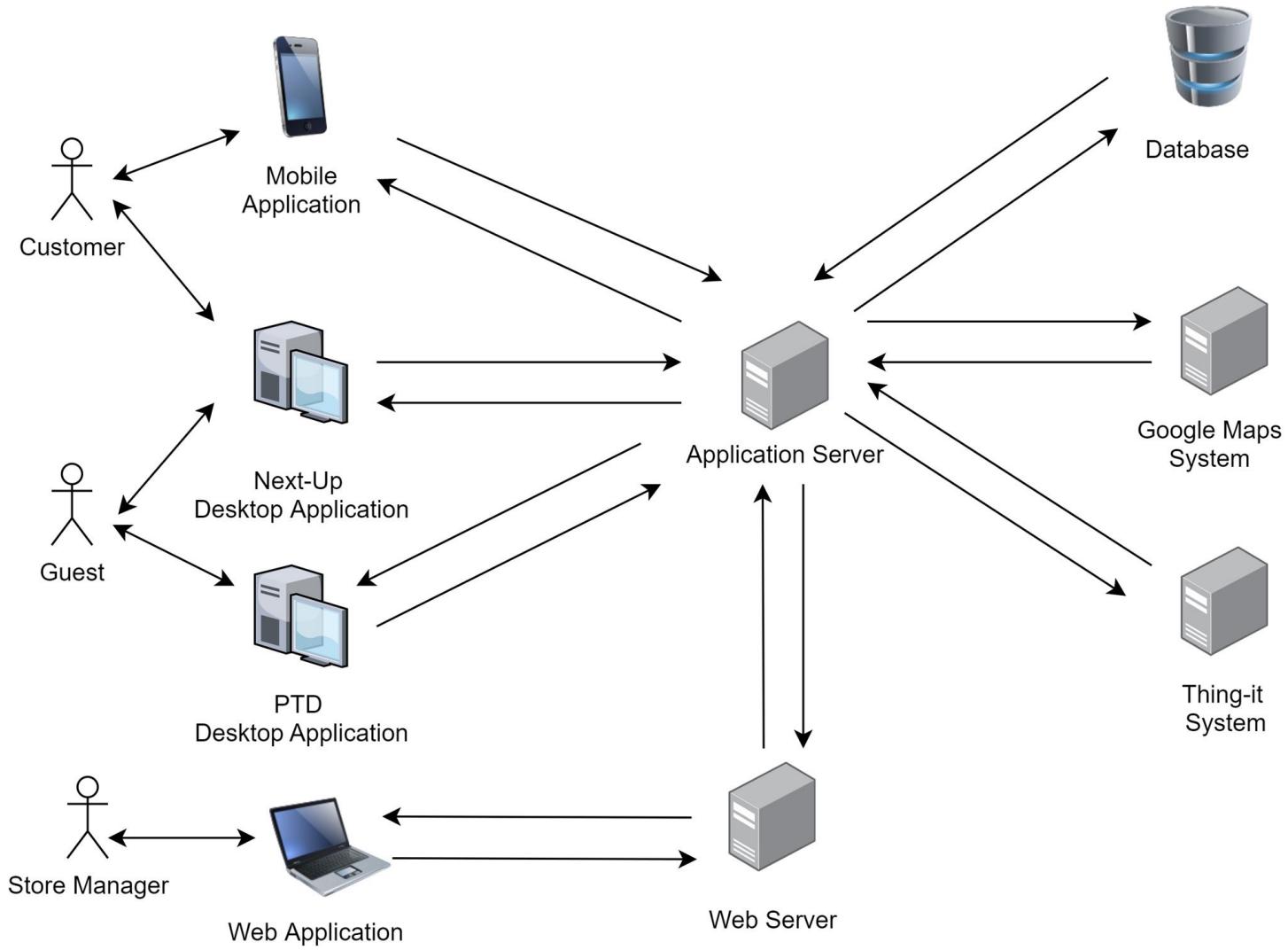
ALLOY MODEL



The Alloy model focuses on the following aspects of CLup:

- The **capacity of the departments** must always be respected
- **Access to the store** must be allowed only to those who have lined up/booked a visit through CLup

SYSTEM OVERVIEW

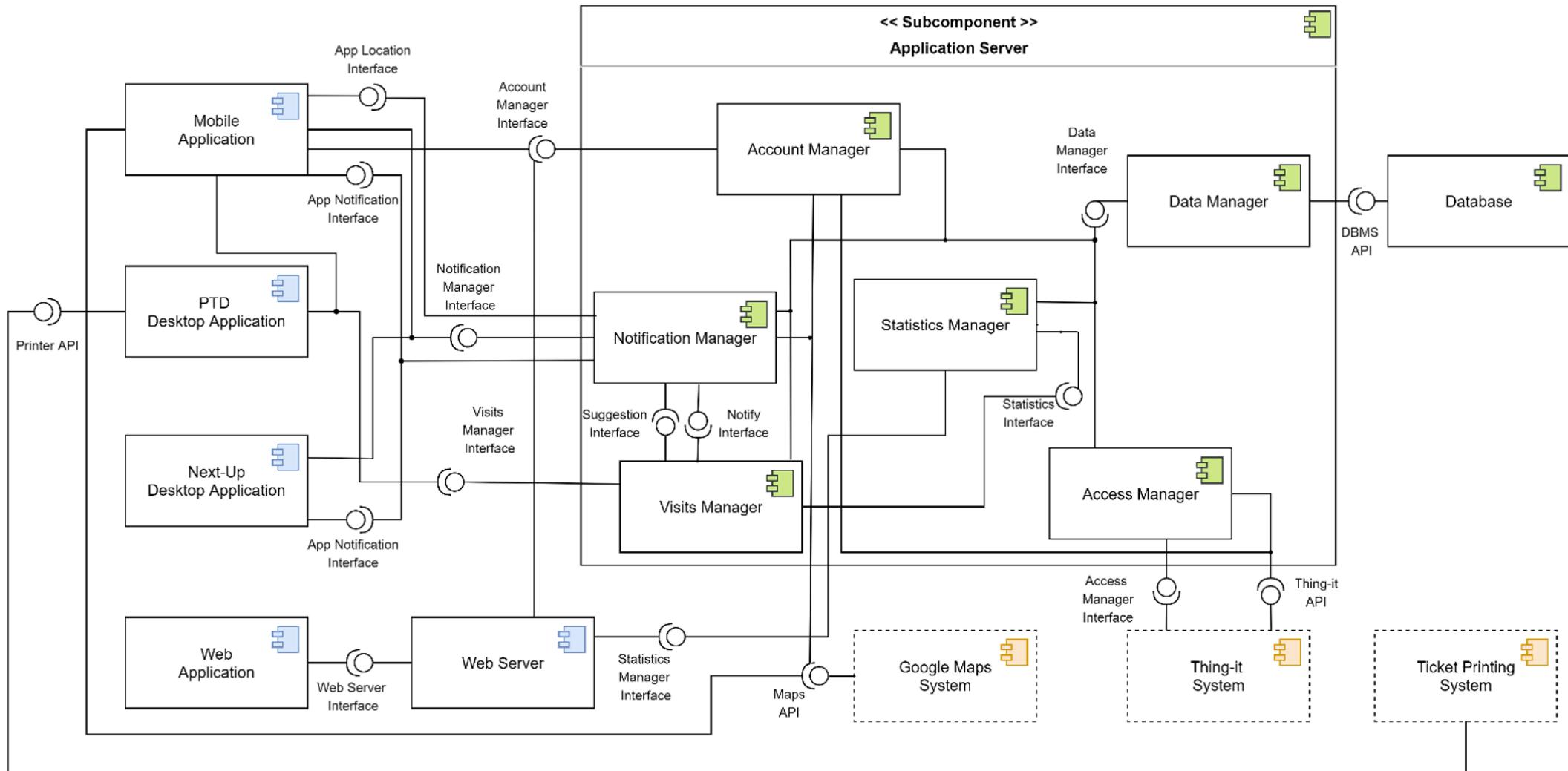


The components which constitute the System are organized in a **4-tier architecture**.

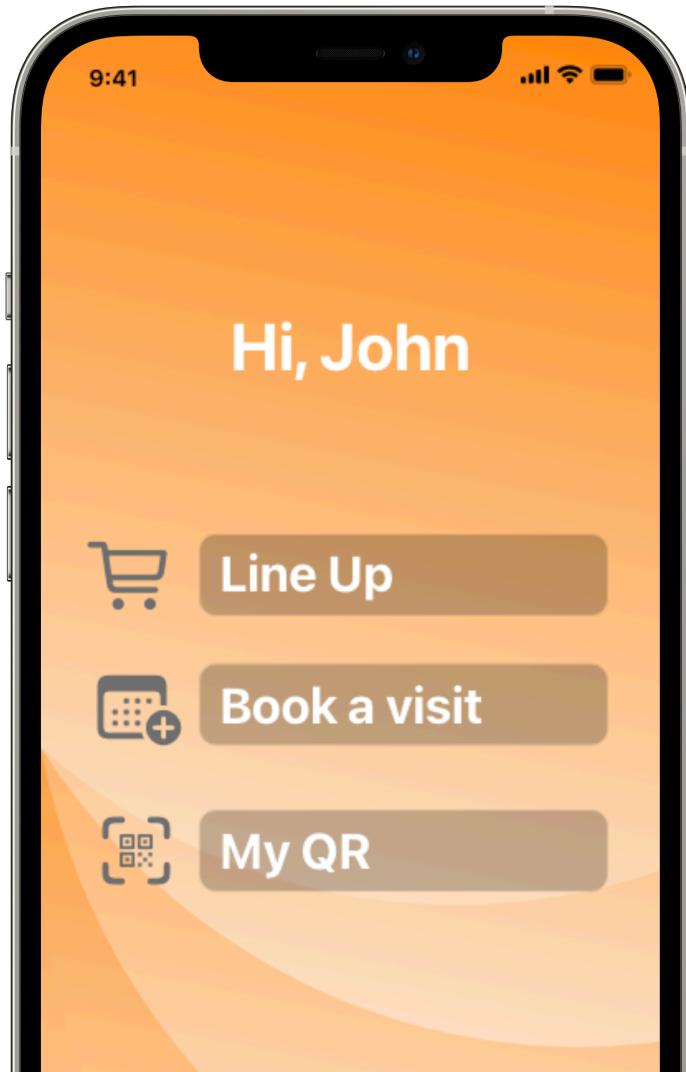
Main advantages:

- Maintainability
- Scalability
- Speed-up the development

COMPONENT DIAGRAM

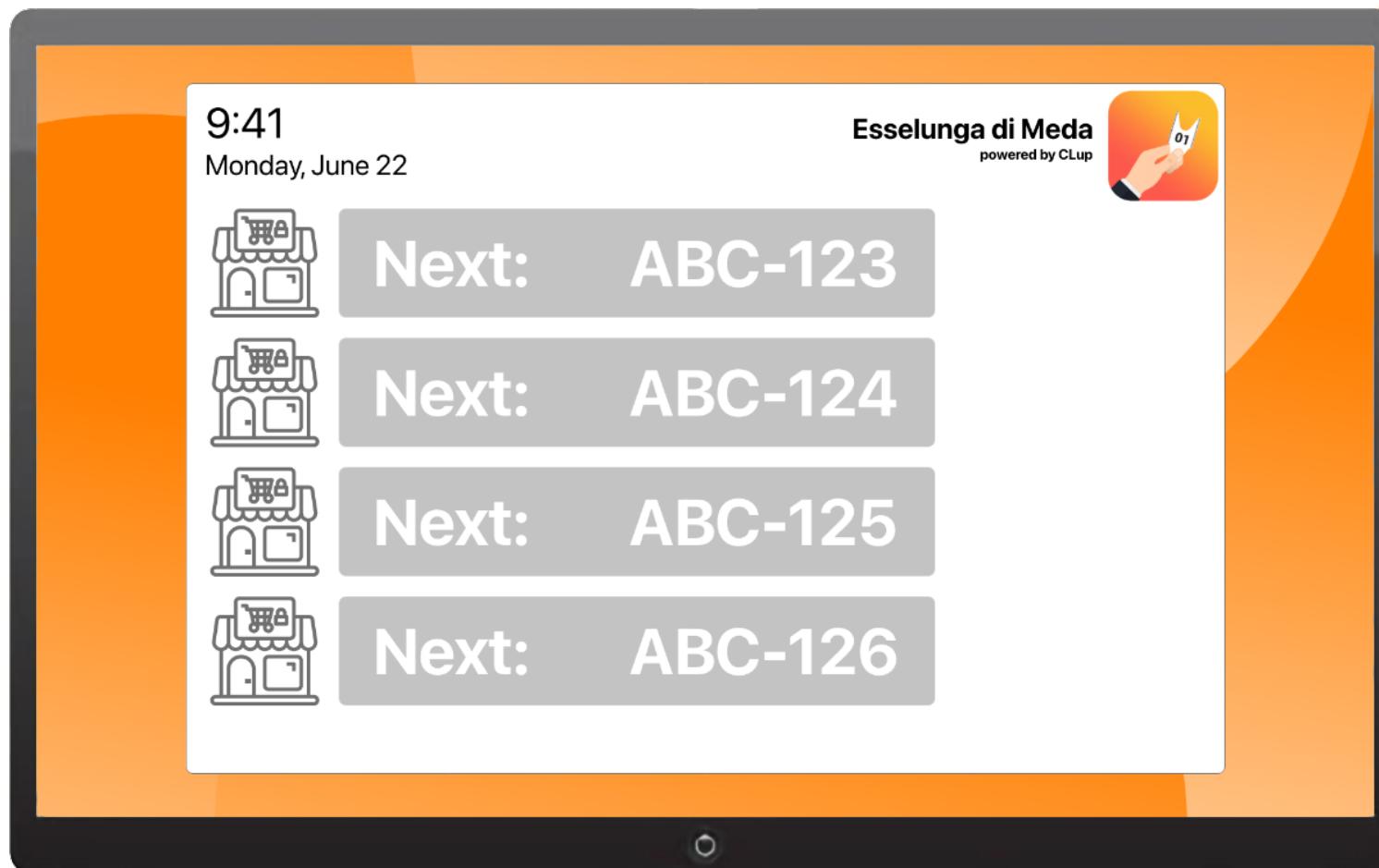


APPLICATION COMPONENTS



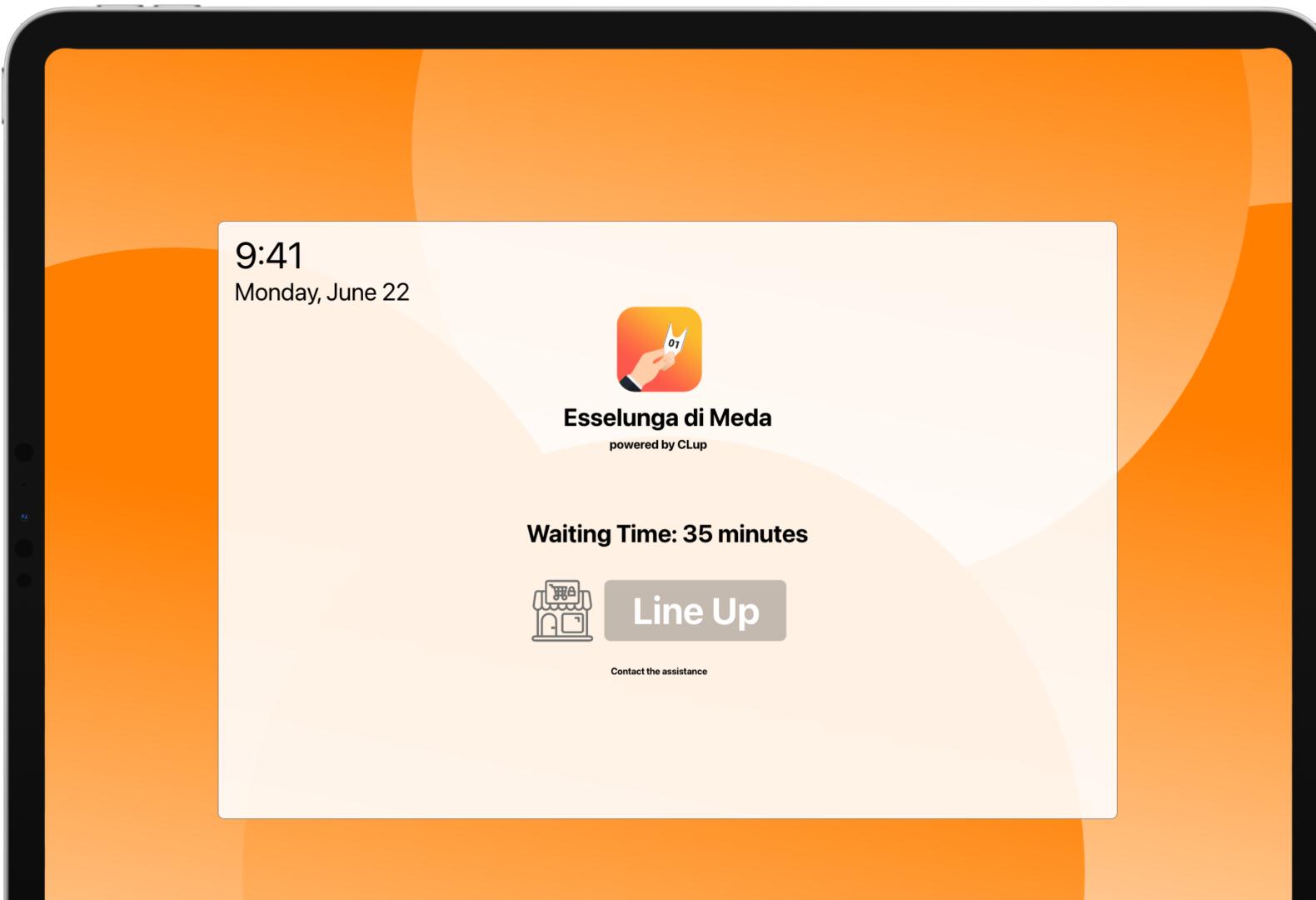
CUSTOMER
MOBILE
APPLICATION

APPLICATION COMPONENTS



NEXT-UP
APPLICATION

APPLICATION COMPONENTS



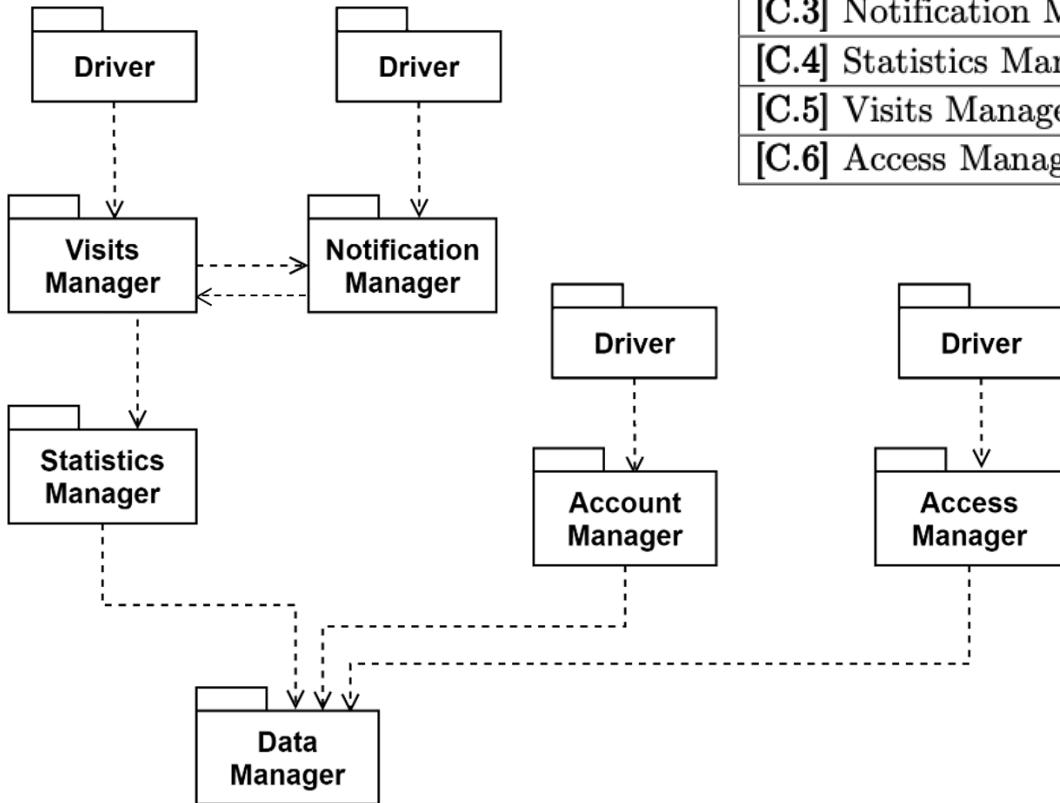
PHYSICAL
TICKET
DISPENSER
APPLICATION

APPLICATION COMPONENTS



STORE MANAGER
WEB APPLICATION

IMPLEMENTATION, INTEGRATION AND TEST PLAN



Component	Implementation complexity
[C.1] Data Manager	Low
[C.2] Account Manager	Medium
[C.3] Notification Manager	High
[C.4] Statistics Manager	Medium
[C.5] Visits Manager	High
[C.6] Access Manager	Medium

A bottom up approach.



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