Politecnico di Milano

Department of Computer Science and Engineering

Software Engineering 2

CLup – Customers Line-up Requirements Analysis and Specification Document

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Chapter 1

Introduction

1.1 Purpose

1.1.1 Description of the Given Problem

1.1.2 Goals

Bla bla bla...

Features for *lining up*:

- [G1]: Customers should be able to line up from a remote digital device.
- [G2]: Customers should be able to line up from a physical spot.
- [G3]: Customers should be able to obtain a QR code encoding an identifier of the lining up.

Features for *booking a visit*:

- [G4]: Customers should be able to book a visit from a remote digital device.
- [G5]: Customers should be able to book a visit from a physical spot.
- [G6]: Customers should be able to obtain a QR code encoding an identifier of the booking.

Features for the system:

- [G7]: The system should allow customers to enter in the store only if they have been authorized.
- [G8]: The system should monitor the customers' body temperature before allowing them to enter the store.
- [G9]: The system should maximize the number of customers in the store w.r.t. the capacity of the store and the social distances imposed by the *"decreto del Presidente del Consiglio dei ministri"* (d.P.C.m).

1.2 Scope

1.3 Definitions, Acronyms, Abbreviations

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Chapter 2

Overall Description

2.1 Product Perspective

2.2 Product Functions

2.3 User Characteristics

2.4 Assumptions, Dependencies and Constraints

In the scenario we are taking into consideration, we assume the following domain assumptions:

- [D1]: Customers respect the d.P.C.m impositions.
- [D2]: If customers have lined up from remote, they shall approach to the store with the smartphone.
- [D3]: If customers indicate the category of products they would buy, they won't buy other things.
- [D4]: Customers lining up remotely shall have a Global Positioning System (GPS) module inside the smartphone.
- [D5]: Customers lining up remotely shall accept GPS localization permissions.
- [D6]: Customers lining up remotely shall keep Internet connection active.
- [D7]: Customers lining up remotely shall keep notification option active.
- [D8]: Customers enter in the store only if the system authorized them.

- [D9]: Customers go away from the store after they have done their shopping.
- [D10]: Customers lining up from the physical spot take care about the printed QR code.
- [D11]: Customers show the QR code to the scanner to be accepted by the system.

Chapter 3

Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

3.1.2 Hardware Interfaces

3.1.3 Software interfaces

3.1.4 Communications Interfaces

3.2 Functional Requirements

3.2.1 Requirements

3.2.2 Definition of Use Case Diagrams

Bla bla bla...

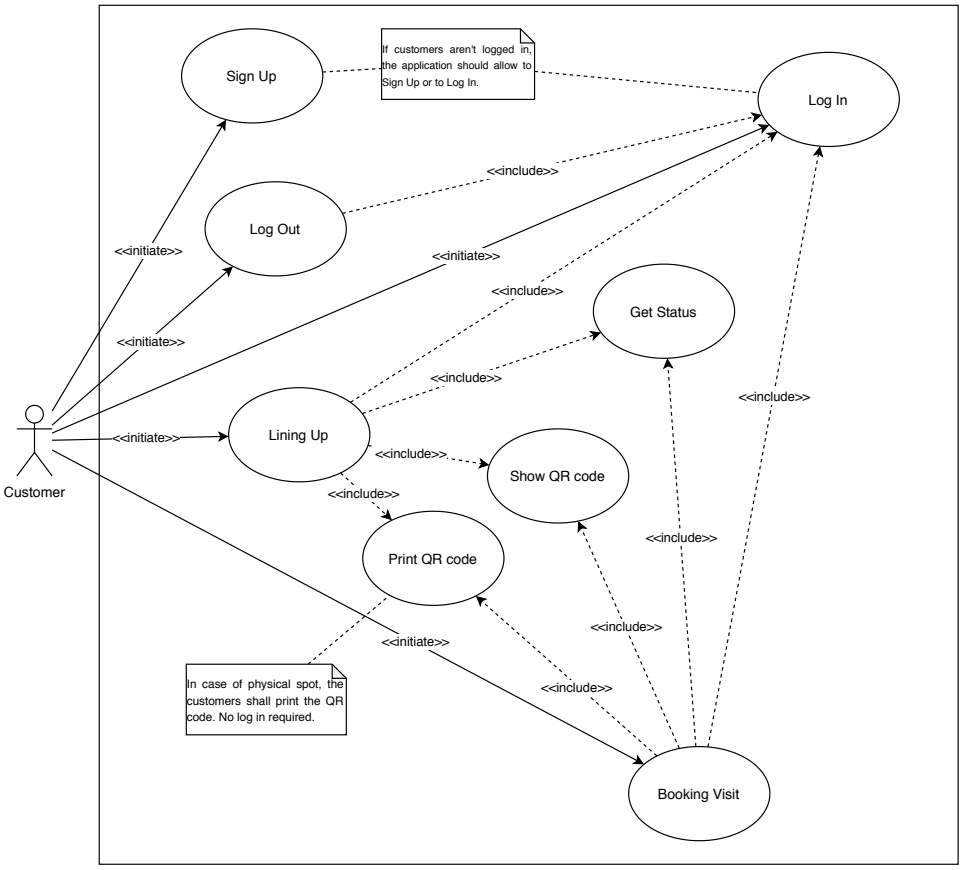

Figure 3.1: Customers use cases diagram.

Name	Sign Up
Actor	Customer
Entry Conditions	Customer is on the Sign Up page.
Event Flows	• Customer inserts the requested information in the form. • Customer clicks on the Sign Up button.
Exit Conditions	Sign Up completed successfully and customer is logged in.
Exceptions	• Customer's username already in use. • Empty form field. • Policy agreement rejected. • Lost Internet connection.

Table 3.1: Customer - use case: **Sign Up**.

Name	Log In
Actor	Customer
Entry Conditions	Customer is on the Log In page.
Event Flows	• Customer inserts the requested information in the form. • Customer clicks on the Log In button.
Exit Conditions	Log In completed successfully and customer redirected to home page.
Exceptions	• Customer's username or password incorrect. • Empty form field. • Lost Internet connection.

Table 3.2: Customer - use case: **Log In**.

Name	Log Out
Actor	Customer
Entry Conditions	Customer is on the Log Out page.
Event Flows	• Customer clicks on the Log Out button.
Exit Conditions	Log Out completed successfully and customer redirected to the Sign Up/Log In page.
Exceptions	• Customer already logged out. • Lost Internet connection.

Table 3.3: Customer - use case: **Log Out**.

Name	Lining Up
Actor	Customer
Entry Conditions	Customer is on the Home page
Event Flows	• Customer clicks on the Lining Up button.
Exit Conditions	Lining Up completed successfully and the application returns to the customer the Status page.
Exceptions	• Previous Lining Up was not expired. • Customer wasn't logged. • Lost Internet connection.

Table 3.4: Customer - use case: **Lining Up**.

3.2.3 Use Cases and Sequence/Activity Diagrams

3.2.4 Mapping on Requirements

3.3 Performance Requirements

3.4 Design Constraints

3.4.1 Standard Compliance

3.4.2 Hardware limitations

3.4.3 Any Other Constraint

3.5 Software System Attributes

3.5.1 Reliability

3.5.2 Availability

3.5.3 Security

3.5.4 Maintainability

3.5.5 Portability

Name	Booking Visit
Actor	Customer
Entry Conditions	Customer is on the Home page
Event Flows	• Customer clicks on the Booking Visit button. • Customer fills the form with the requested data. • Customer clicks on the Submit button.
Exit Conditions	Booking Visit completed successfully and the application returns to the customer the Status page.
Exceptions	• Previous Booking Visit was not expired. • Customer wasn't logged. • Lost Internet connection.

Table 3.5: Customer - use case: **Booking Visit**.

Name	Show QR code
Actor	Customer
Entry Conditions	...
Event Flows	• ...
Exit Conditions	...
Exceptions	• ...

Table 3.6: Customer - use case: **Show QR code**.

Name	Get Status
Actor	Customer
Entry Conditions	...
Event Flows	• ...
Exit Conditions	...
Exceptions	• ...

Table 3.7: Customer - use case: **Get Status**.

Name	Print QR code
Actor	Customer
Entry Conditions	...
Event Flows	• ...
Exit Conditions	...
Exceptions	• ...

Table 3.8: Customer - use case: **Print QR code**.

Chapter 4

Formal Analysis Using Alloy

Chapter 5

Effort Spent

Chapter 6

References

Glossary

CLup	Customers Line-up
d.P.C.m	*"decreto del Presidente del Consiglio dei ministri"*
GPS	Global Positioning System