

CLup - Customers Line-up

Requirements Analysis and Specification Document

1 Introduction

1.A Purpose

Customers Line-up is an application that allows users to make reservations for visiting a grocery store.

The idea arises in a context of sanitary emergency, in which people experience a lockdown situation and should be as safe as possible, in order to prevent the evolution of a pandemic and all its consequences on society. Of course, grocery shopping is an essential need, but all the activities connected to it must be highly regulated, so that crowds are avoided and safety is guaranteed.

A typical rule for supermarkets, in an epidemic situation, is to restrict access, in order for people to keep enough distance while doing the shopping. However, the immediate consequence of this measure is physical lining up, which is in turn a problem: crowds form and social distancing can become far from reality.

Customers Line-up is thought for avoiding this kind of situation, enabling a way to queue up virtually and prevent any sanitary risk: the influx of people inside the store is regulated, customers have interests in reserving a ticket (to enter) from their cars or homes, and rules to contrast the pandemic are respected on all sides.

To resume, the goals of the software system are those of granting social distance outside supermarkets, managing entrances and avoiding crowds inside them. A list of the application's goals is presented here.

GOALS	
G1	Grant social distance outside the grocery store 1. Avoid physical lining up outside the grocery store*
G2	Manage entrances in the grocery store
G3	Avoid crowds (too many people) inside the grocery store (at the same time)

* G1's subgoal; from now on, references to this subgoal will be made using **G1.1** abbreviation

1.B Scope

According to Michael Anthony Jackson and Pamela Zave's standard model for requirements engineering, this section proposes an analysis of World and Shared phenomena connected to the environment where *Customers Line-up* is thought to work.

WORLD PHENOMENA	
WP1	A customer wants/needs to go to the grocery shop
WP2	A customer gets to (or approaches) the grocery shop by car/by bike/on foot/any other means of transportation
WP3	A customer inside the grocery shop decides to buy an item
WP4	A customer does the grocery shopping in a particular order
WP5	A customer pays at the check-out
WP6	

SHARED PHENOMENA - WORLD CONTROLLED	
SPW1	A customer gets a ticket
SPW2	A customer deletes his booked ticket
SPW3	A customer books a visit
SPW4	A customer deletes his booked visit
SWP5	A customer exits from the grocery shopping
SWP6	A time slot is available for a reservation

SHARED PHENOMENA - MACHINE CONTROLLED	
SPM1	A customer waits for his turn to be called
SPM2	A customer is notified for entrance
SPM3	A customer enters in the grocery shopping
SPM4	

1.C Definitions, Acronyms, Abbreviations

1.C.1 Definitions

- **Customer:** a person who does/is going to do the grocery shopping
- **Ticket machine:** a machine equipped with a touchscreen display, a printer system, a QR code reader and an *ad-hoc* version of *Customers Line-up* application
- **Guest:** a person who has downloaded *Customers Line-up* mobile application on his smartphone/tablet, but has not registered or logged in yet; for this reason, he is not allowed to use the full set of functionalities offered by the app
- **User:** a person who has downloaded *Customers Line-up* mobile application on his smartphone/tablet and has successfully logged in **OR** a person who uses *Customers Line-up* services through a ticket machine

1.C.2 Acronyms

- **QR:** *Quick Response*
- **GPS:** *Global Positioning System*
- **RASD:** *Requirements Analysis and Specification Document*
- **CLup:** *Customers Line-up*

1.C.3 Abbreviations

Gn	Goal number n	<i>Defined in section 1.A</i>
WPn	World phenomena number n	<i>Defined in section 1.B</i>
SPWn	Shared phenomena (World controlled) number n	<i>Defined in section 1.B</i>
SPMn	Shared phenomena (Machine controlled) number n	<i>Defined in section 1.B</i>

1.D Revision history

Version	Date	Authors	Summary
1.0		Cosimo Sguanci, Roberto Spatafora, Andrea Mario Vergani	First release

1.E Reference Documents

- Software Engineering 2 slides (available on the Beep page of the course)
- Project assignment document ("R&DD Assignment A.Y. 2020-2021.pdf" available on the Beep page of the course)
- RASDs developed by colleagues of past years (available on the Beep page of the course)

1.F Document structure

- **Section 1** provides an overview of *Customers Line-up's* goals and the context in which it is thought to work. In addition, all released versions of this document are summarized in an appropriate paragraph.
- **Section 2 ...**
- **Section 3 ...**
- **Section 4 ...**
- **Section 5** summarizes the total effort spent for realizing the *Requirements Analysis and Specification Document* by each group member.
- **Section 6** lists all references that helped the team during analysis and document writing.