**1.INTRODUCTION**

**1.1**  **Purpose**

The purpose of the document is to provide a description of CLup application. The idea of developing this application starts from the need to manage the shopping during coronavirus emergency, with the aim to avoid lines in front of stores which creates crowds.

The application is meant to be used by shop managers to regulate the influx of people in the buildings, also through the scanning of QR codes at the entrance, saving the customers from having to stand outside of stores with other people.

The application is also meant to be used by the customers to avoid having to line up outside the building, through a system that gives them the position in a queue through the retrievement of a number. In this way, they should wait until their number is called, or close to being called, to approach the store. For an effective success of the application, the system should provide the customers a reasonably precise estimation of the waiting time

People who do not have access to the required technologies, can hand out tickets on the spot.

CLup provides also the possibility to “book” a visit: either customer can indicate the approximate expected duration of the visit, or in case of long-term customers, this time could be calculated by the system through the analysis of their previous visits.

In addition, to allow more people in the store, or in general, to manage in a better way the affluence of people, the users can indicate the categories of items they intend to buy.

**1.2**  **Scope**

The scope of the application is to allow store managers to regulate the number of people in the building, in order to prevent situations of gathering, that can be dangerous during the period of coronavirus emergency.

On the other side, the application allows customers to do the shopping in a safer way both avoiding them queuing in front of the building with other people and letting them do the shopping (CAMBIAAA) keeping distances from the other customers. Specifically, according to the international rules, the distance between two people must be at least one meter. For this purpose, CLup is able to organize the entrances and the bookings according to the capacity of the building, which is provided by the shop manager during its registration.

To do the shopping, the customer already registered must login the application to take the “ticket” obtaining a position in the queue and the estimation of the waiting time.

In order to make the lining up mechanism effective, either the customer activates the localization, and the system calculates the time needed to get to the shop, or the customer estimates by himself/herself the time required from the place he/she is.

The users can also exploit the advanced functionality of “booking a visit”, indicating an approximate duration of the visit they intend to do. The system can infer this time for long-term customers by analyzing their previous visits.

The customers have also the possibility to indicate which kind of items they think they will buy, to allow the system to better organize the entrances by predicting which spaces will be fully occupied in the store and those who have not reached their maximum capacity.

CLup is very simple to use because it includes all demographics, and to take into account visits from people who cannot use the application, the system provides the fallback option of handing out tickets on the spot.

**1.2.1 World phenomena**

-store managers divide shops in departments

-store managers organize the buildings in order to avoid gathering due to coronavirus pandemic

-user want to do shopping

-users (may????) have a smartphone

-people maintain a one-meter distance between each other

-shops put totem at their entrance to allow people to take tickets on the spot

-people arrive in front of the shop without queuing

**1.2.2 Shared phenomena**

-user takes the ticket online

-user takes the ticket on the spot

-user books a visit

-user observes when it is its turn

-system assign a position in the queue for each customer

-System analyze the previous visits of long-terms customers

-application provides the user the estimation of the waiting time

-shops have a maximum capacity

-the application sends a notification to the user when he/she has to leave to arrive in time at the shop

- user provides to the application the estimated time necessary to reach the shop

- the application uses users GPS to provide the estimated time necessary to teach the shop

-user provides information to the system about the categories of items he/she wants to by

- ????????user scan the QR code at the entrance of the shop

**1.2.3 Goals**

-allow people also to take the ticket on the spot

-contrast coronavirus pandemic expansion

-allow people to maintain distance rules while they do shopping

-allow store managers to organize in a more efficient way the store

-allow people to avoid lines in front of the shop

**1.3 Definitions, Acronyms, Abbreviations**

**1.3.1 Definitions**

* **Customer**: who signs in the application with the aim to do the shopping.
* **Store Manager**: who provides the application the information about the store and has the purpose of organizing it according to the new rules introduced in order to contrast the coronavirus pandemic.
* **User**: who signs in the application and uses the available services for him/her purposes. The user can be a customer or a store manager.
* **Demographic**: particular sector of population (children, seniors, adults, …)
* **Ticket**: the number received corresponding to the position in the queue.

**1.3.2 Acronym**

**QR Code:**

**GPS:** Global Positioning System

**RASD**: Requirement Analysis and Specification Document

**API:** Application Programming Interface

**UI:** user interface

**GDPR:** General Data Protection Regulation

**1.3.3 Abbreviations**

* **WPn**: World Phenomenon number n
* **SPn**: Shared Phenomenon number n
* **Gn**: goal number n
* **AF**: advanced function
* **Rn**: requirement number n
* **Dn**: domain assumptions number n

**1.4 Revision History**

**1.5 Reference Documents**

* Specification Document: **“**R&DD Assignment A.Y. 2020-2021.pdf”
* IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications
* Available slides on beep

**1.6 Document Structure**

* **Chapter 1:** it describes what the scope of the software is, identifying the product, the application domain and the boundaries between the application domain and the external environment.

It sets the goals and explains what is included in the following sections, to guide the readers in the reading process.