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Iqueue Project

RASD

Software Engineering for Automation (2022-2023)

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# 1 Introduction

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# **1 Introduction**

A RASD is a document that aims to present all the requirements of the system to be developed, explaining the domain in which it has to operate. A RASD should work as baseline for the following tasks in software development, in particular in project planning, software evaluation and change control. Such document has a wide audience, and hence it has to be written as clear as possible.

## **Purpose**

The main goal of the application IQUEUE is to give the customers of small-medium size shops an efficient way to track the queue and the waiting time of those shops so that they can decide when to go to the stores, optimizing in this way their precious time. An additional feature of this app is that shop owner can keep track in an easy way the daily and even hourly number of customers and, at the same time, they have a useful instrument to advertise their activity and to create a lock-in effect in the clients. Therefore, IQUEUE must be an application which can allow both the customers and the owners to register, with different options, and which can relate to a GPS environment such as Google Maps. Consequently, the goals of this project are:

|  |  |
| --- | --- |
| G1 | **Customers** can view the current queue status for the shop and estimated wait times. |
| G2 | **Customers** can book time slots in advance to visit the shop, reducing wait times. |
| G3 | **Customers** can receive notifications and alerts about their queue status and estimated wait times. |
| G4 | **Customers** can get discounts or other benefits by using the Iqueue app to visit shops. |
| G5 | **Customers** can provide feedback and ratings for the shops, helping other users make informed decisions. |
| G6 | **Customers** can easily search and discover new shops based on their preferences and location. |
| G7 | **Shop owners** can efficiently manage and organize the incoming flow of customers, improving their overall customer experience. |
| G8 | **Shop owners** can better forecast and plan their inventory and staffing needs based on the expected footfall of customers. |
| G9 | **Shop owners** can access analytics and insights on their business performance and customer behaviour, helping them make informed decisions. |
| G10 | **Shop owners** can improve their brand awareness and visibility by being featured on the app and leveraging the app’s marketing capabilities. |
| G11 | **Shop owners** can offer personalized promotions or deals to customers through the app. |
| G12 | **Shop owners** can build customer loyalty by offering a seamless and convenient experience through the app. |

## **Scope**

Iqueue is a software system that has to work in a World where the following phenomena occur:

|  |  |
| --- | --- |
| WP1 | A **customer** enters a shop |
| WP2 | A **customer** joins a queue at a shop |
| WP3 | A **shop experiences** high demand and long queues during peak hours |
| WP4 | A **shop experiences** low foot traffic and sales during off-peak hours |
| WP5 | A **shop owner** adjusts pricing or sales strategies to attract more customers |
| WP6 | A **shop owner** restocks inventory based on sales data and demand forecasts |
| WP7 | A **customer** provides feedback to a shop owner about their experience |
| WP8 | A **shop owner** updates their store layout or design to improve customer flow and experience |
| WP9 | A **shop owner** launches a marketing campaign to increase brand awareness and attract new customers |
| WP10 | A **shop owner** hires or trains new staff members to improve customer service and efficiency. |

The shared phenomena, which are the intersection between the World phenomena W and the Machine phenomena, are:

|  |  |
| --- | --- |
| SP1 | A customer registers an account on the app |
| SP2 | A customer views nearby shops on the app based on their current location |
| SP3 | A customer selects a shop on the app to visit |
| SP4 | The app shows the estimated waiting time for the selected shop |
| SP5 | A customer books a time slot in advance on the app to visit the shop |
| SP6 | The app sends a notification to the customer when their turn in the queue is approaching |
| SP7 | A customer enters the shop and checks-in on the app |
| SP8 | The app updates the estimated waiting time based on the customer's check-in |
| SP9 | A customer cancels their booking on the app |
| SP10 | A customer provides feedback and ratings for the shop on the app |
| SP11 | The app shows recommended shops to the customer based on their previous visits and ratings |
| SP12 | A customer redeems rewards and offers on the app when making a purchase |
| SP13 | The app allows customers to track their rewards and loyalty points |
| SP14 | A customer views the shop's menu or product catalogue on the app |
| SP15 | The app allows customers to place orders for pickup or delivery from the shop |
| SP16 | A customer pays for their order using the app |
| SP17 | The app shows the customer's purchase history and receipts |
| SP18 | The app suggests new shops or products to the customer based on their preferences and activity on the app |
| SP19 | A customer contacts the shop directly through the app for inquiries or support |
| SP20 | The app provides live chat or messaging support to the customer for assistance |
| SP21 | The app allows customers to create and save shopping lists or wish lists. |
| SP22 | The app provides a map or directions to guide the customer to the shop. |
| SP23 | The app shows the shop's hours of operation, contact information, and other details |
| SP24 | The app allows customers to report issues or problems with the shop or their experience |
| SP25 | A customer shares their experience or purchase on social media through the app |
| SP26 | The app allows customers to connect and follow their favorite shops or brands for updates and promotions |
| SP27 | The app provides personalized recommendations to the customer based on their browsing and shopping history |
| SP28 | A customer earns badges or achievements on the app for frequent visits or purchases |
| SP29 | The app offers exclusive discounts or promotions to customers who refer their friends to use the app |
| SP30 | The app allows customers to easily switch between different languages or currencies based on their preferences. |

## **Definitions, Acronyms, Abbreviations**

The World is the portion of the real-world affected by the machine. Michael Jackson. 1995. The world and the machine.

## **Reference Documents**

IEEE 29148-2018 Requirements engineering, the IEEE specification document that “provides details for the construct of well-formed textual requirements, to include characteristics and attributes, in the context of system and software engineering”;

## **Document Structure**

This document complies with the SRS11 standard structure as it is defined in the IEEE 29148-2018 Requirements engineering, section 9.6. Nevertheless, the order of the contents has been slightly changed in order to facilitate the readers in the reading of this specific RASD. Therefore, the document is divided in 3 main parts:

1. the first part (to which this section belongs) provides an introduction to the system to-be, Iqueue, making clear which are the goals it is required to achieve and in which context it is going to operate;
2. the second part provides a more detailed description of the functions that Iqueue has to implement relating them to the main concepts of the system and to the user needs; it also provides the main assumptions under which Iqueue will work properly;
3. the third part contains the complete requirements of the system, from both the functional and the non-functional points of view;

It should be remarked that the structure of this document does not follow a logic or temporal order, but whoever is interested in the reading can jump from a section to another, because the purpose of it is to be a reference document.

# **Overall description**

## **Product perspective**