System Requirements Document

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Finding a restaurant

Requirements Engineering and Product Management

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Contents

Section 1 Introduction

Finding a good restaurant in a place where you are new, or you are confused about where to eat it can be exasperating at times especially when you are new. Without any help it is hard to know which a good place is to eat, which cuisine do they serve and other things. So, this application helps people to search for restaurants in their area with their menu, reviews and ratings, images, and it also helps us navigate to the place. This application can be useful for the people who are new and for the normal people who want to know about a restaurant.

1.1 Purpose and scope

The system 'Find a Restaurant' mainly helps people to find restaurants in their surrounding areas or a specific area. The applications help the users by showing a list of restaurants in the searched area along with the description about menu, reviews, and special offers that are available at that time. It helps people who are new to the city or people from the same city who would like to eat out. It can also be useful for food bloggers or food enthusiasts. This application also has navigation facility to the selected restaurant so that the user does not have any trouble reaching the destination. The user can give reviews to the visited restaurant after their visit will help the users who are in search of a good restaurant. This application will not allow the user to order directly but it will display the restaurants which will offer delivery services.

SCOPE:

- This application will run on both Android and IOS Platforms.
- Application can be used only by authenticated and registered users.
- It has the GPS functionality so that the user can search for restaurants in his surrounding any areas.
- If there are any new offers and promotions the software will send notification to the user.

1.2 Definitions, acronyms, and abbreviations

- Stakeholder – he/she is the person who is interested in this product and funds the product development.
- Requirement elicitation – the process of determining the needs of the customer from this product and documenting that information to use that information to construct a more formal document in the future.
- Brainstorming – this is a group discussion with the team mates to discuss the ideas among each other and solve the problems that we have.

- Interoperability – it is elaborated as the ability of the computer system or a software to communicate with one another for the proper exchange of information effectively.

1.3 Overview

First, we discuss about the goals of the product, and we will describe the system using the context diagram. Next, we will discuss about the stakeholders. In the section 3, we will discuss about the elicitation techniques. We have decided to discuss about 4 elicitation techniques and the requirements we were able to obtain from the used techniques. The 4th section is all about the system requirements: domain level requirements, functional requirements, data requirements and quality requirements. The section 5, we discuss about the requirement prioritization and prioritization techniques. In Section 6 and 7 we talk about the release plan and policies and regulations for the application.

1.4 Goals of the product (goal level requirements)

Goal_1: To find restaurants in a specific area based on the user choice.
Goal_2: To provide clear information about the restaurants such as cuisine, review, ratings, menu, images etc.
Goal_3: To provide the feedback option to the user about the visited restaurants.
Goal_4: The application should have the navigation feature to show the directions to a restaurant from users' current location.

1.5 Context diagram for the system

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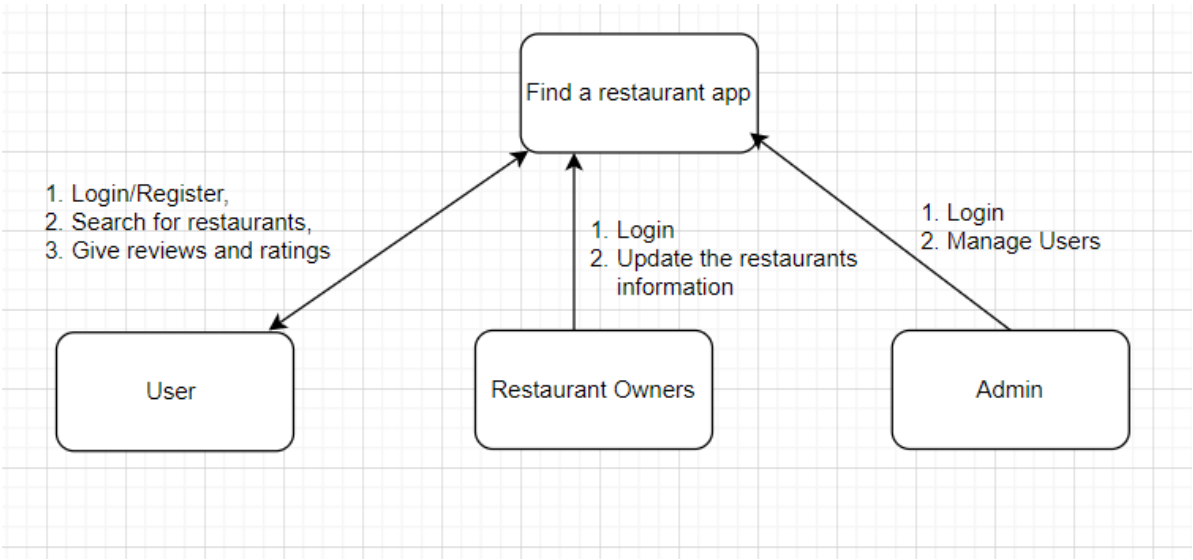


Section 2 Stakeholder Identification and analysis

There are several stakeholders who are involved with this application according to their importance:

1. The customer, who wants a solution for this kind of problem because the customer is the one who is going to use the application for finding a restaurant based on user choice.
2. Administrator, who manages the system so that he/she has control over the system and have business advantages [Lau].
3. Developers involved in developing the product.
4. Other people who have helped in providing required information for the product [Lau].

Section 3 Requirements Elicitation Techniques

Requirement's elicitation is something which we should do continuously because many requirements may arise even late in development. It is basically, understanding what the needs are and analyze the information we must extract the requirements using different techniques. In our application we are going to discuss four of the techniques and what requirements we have extracted from each technique.

ID	Techniques used	Requirements gathered
1	Interview	DL1, DL2, PR1, PR3, QR1, QR3

2	Brainstorming	PR2, PR4, QR 4, QR5
3	Document studies	PR5, QR2

3.1 Interviewing

We primarily gone through the project mission report of the stakeholders group project and got a quick idea of what the project is about. Me and my team contacted each other before talking to the stakeholders group. We fix the meeting to interview the stakeholder group. During the meeting we have asked several questions that helps us obtain the major requirements such as functional and non-functional requirements of the project. The basic needs and functionalities are discussed in the interview session.

3.2 Brainstorming

In the brainstorming session, we sat down with all the members in our group and noted down all the different ideas we have mainly focused on the document the customer sent in and the interview which we have conducted.

3.3 Document studies

During the early stage of requirements gathering the document studies such as project mission submitted by the stakeholder group helped to understand the main functionalities of the system, the expected feature the customer is interested to see with in the application. We had a few doubts after me and my team studied the project proposal, and we cleared all those doubts in the interview session.

Section 4 System Requirements

The system requirements are the most important things that help in product development. These requirements can be classified into 3 major types such as, domain level, functional, non-functional. But the target system requirements can be classified into two main levels as domain level and product level requirements.

4.1 Domain Level Requirements

These are the requirements that describe the environment in which the system is working. These are very important requirements as they are the fundamental requirements for the application domain. These requirements should be satisfied to ensure the proper functionality of the system.

DL1: The product should provide available restaurants information in surrounding area.

DL2: The product should allow the end user to share their exact location.

DL3: The product should allow the admin to add information regarding restaurant’s menu, special offers and other information provided by the restaurant’s owner.

DL4: The product should support customer feedback.

4.2 Functional Product Level Requirements

Functional requirements describe the list of services that the product offers. These state the details of the system or its components. These are the list of functional requirements this product is expected to offer to the user.

PR1: The application should have a sign up and sign in functionality to verify the user.

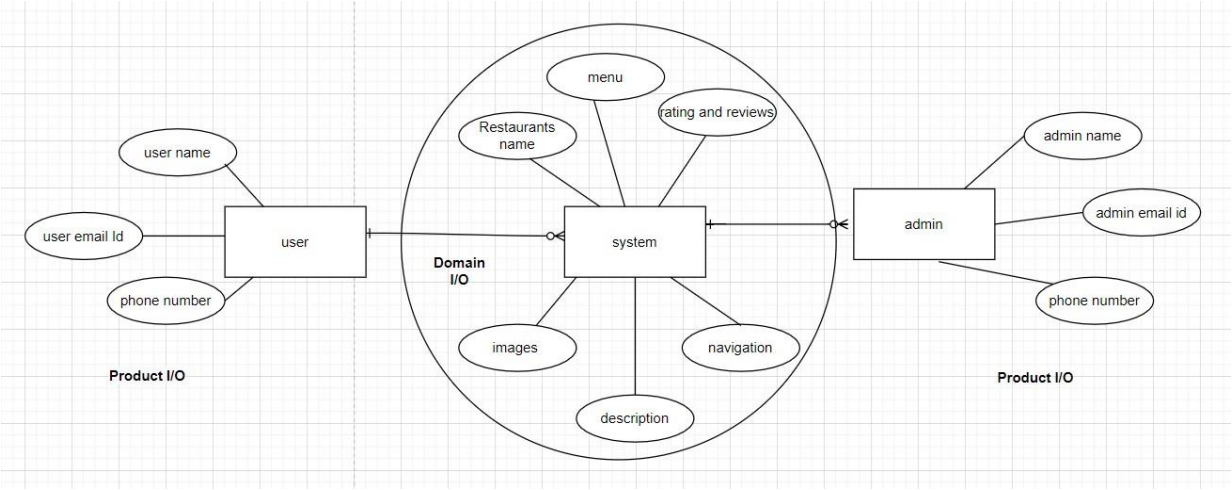
PR2: The application should have functionality to search for restaurants based on the user entered location or give the list of available restaurants based on the user location or within selected radius of the user location. From the displayed list of restaurants, the user can sort the restaurants based on the type of food, rating, and price.

PR3: The application should provide the information of searched restaurant such as images, menu, phone number and address of the restaurant the user is looking for.

PR4: It should have the functionality to give reviews and ratings to the visited restaurants by the user.

4.3 Data Requirements

E-R diagram:



DR1: The user data such as

- Username: string of max 16 characters
- Email id: char or strings
- Phone number: int
- Password: char or strings

DR2: The data related to the restaurants such as

- Restaurant names: string
- Images: composite format
- Description: varchar
- Menu: varchar
- Navigation: data related to latitude and longitude info of the location.
- Rating, and reviews data: varchar

are stored with in the product data base.

DR3: The admin data such as

- Name: string
- Email id: varchar
- Phone number: int
- Password: varchar

are stored.

The database is stored in the form of rational data model.

4.4 Product Quality Requirements

QR1: Availability- the system should be able to perform normal operations with downtime of 5 mins in a day.

QR2: Maintainability: The application needs to be maintained and updated on weekly basis as the information about the restaurants such as location, general information, ratings, and reviews might change frequently, to deliver the clear and correct information without any misunderstandings to the end user.

QR3: Performance: The application should be able to deliver the information within minimum of 15 seconds response time.

QR4: Security: It should value the privacy and security of the end user in the securing the user information such as his current location, credit/debit card details, phone number and email address et

QR5: Usability: The application should be designed and developed in a way that it is easy to understand and use the functionalities of the application for all age groups.

QR6: Interoperability: The application should be able to co-operate with other products for better performance.

Section 5 Requirements prioritization

The purpose of requirements prioritization in gathering requirements of the system is very essential to plan, select an ordered, optimal set of requirements for the later stages of implementation in successive release of a product. When comes to our requirements prioritization we have chosen to follow numeric assignment and ranking technique in clearly separating the selected requirements.

Numerical Assignment technique:

We have grouped all the requirements that we have extracted from the stakeholders and categorized them into different classifications like critical, standard, and optional.

From the interest of stakeholders, we have divided the requirements in to 70 percent as critical, 20 percent as standard and 10 percent of the requirements as optional. The stakeholders have selected the following requirements and their priority as follows:

Requirements	Priority	Percentage
Sign in/ Sign up	Standard	50
Search restaurants	Critical	70
Description of restaurants	Critical	70
Reviews and ratings	Critical	70

When comes to the other prioritization technique i.e.,

Ranking technique: The requirements are ranked by the stakeholder using ordinal scale, but these are ranked without any ties between them.

Comparison of both techniques: We observed that the major drawback of the ranking technique is that when the stakeholders are more than one then the ranking of the requirements is more difficult whereas in numerical assignment, we have not faced this issue, so the most optimal technique from both is Numerical assignment technique.

Section 6 Release plan

We have selected the agile method of release planning in our product development here the selected requirements are added to our product backlog. The requirements are created as user stories and listed in our product backlog. Then we have divided the release plan in to three sprints where the major or critical requirements are selected using prioritization techniques and added to the sprint plan 1 and submitted to the development team or a scrum master.

Here are the selected requirements to be released after the successful sprint 1:

Released plan	Sprint 1 Requirements	Release date
1.0	DL1, DL2, DL3, PR1, PR3, PR4	unknown
1.1	DL4, PR2, DR1, DR3	
1.2	DR2	

Section 7 Policy and Regulation Requirements

As this the initial iteration of the product the policy and regulations are not decided or formed properly, we will come up with policy and regulation requirements in the next iteration of requirements gathering.

Section 8 References

We have followed “Software Requirements Styles and Techniques” by Soren Lauesen [Lau].

Section 9 Document Revision History

Version	Date	Name	Description
1.0	18/11/2021	Initial Report of the product "Find a restaurant"	In this report the initial requirements and basic details of the product are documented.
1.1	25/11/2021	Meeting with our supervisor.	Small changes have been made in the document according to the comments.
1.2	06/12/2021	Meeting with the customer.	Adding more requirements that are requested by the customer.
1.3	8/12/2021	Team meeting	Prioritizing and updating the document.
2.0	12/12/2021	Report after validation.	This is the final report for the requirements specification.
3.0	09/01/2022	Final report after the suggested changes	This report contains the final changes and modifications to the specifications that are suggested by the supervisor.

Section 10 Appendices