Especificación de requisitos de software

Proyecto: SpeedSopt

[Mes de año]

Ficha del documento

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Content

1 Introduction

The main objective of the parking search mobile application is to offer users a safe and efficient solution to find parking spaces for cars and motorcycles in real time. The lack of public space for the safe parking of vehicles in the province has generated the need for a tool that facilitates the search and reservation of parking spaces.

1.1 Propósito

Create an application that helps to solve the need to find parking for cars and motorcycles (private) to their users. Since in the province there is a lack of public space for safe vehicle parking.

1.2 Alcance

The scope of the project is to develop a mobile application to address the challenge of urban mobility, specifically the lack of parking in crowded areas. The objective is to provide users with real-time information on available parking spaces, allowing the search for safe places. The project is initially focused on the city of Quito, with the possibility of expanding to other Latin American cities in the future. Core features include real-time parking search, early application, ratings, and available space management.Personal involucrado

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1.3 Definitions, acronyms and abbreviations

BRD: Business Requirements Document
Android: Mobile operating system used for the development of the application.
GPS: Global Positioning System.
API: Application Programming Interface.

1.4 References

Technical and functional documentation of the application.
Market studies on the need for safe parking spaces.
Local regulations and laws related to the leasing of parking spaces..

1.5 Summary

The parking search mobile application aims to provide users with an efficient solution to find secure parking spaces in real time. With features like advance reservations, online payments, and dynamic rates, the app will enhance the parking experience for drivers and parking lot owners alike.

2 General Description

2.1 Product Perspective

The application will be integrated with map and GPS services to show the user's location and nearby parking lots. APIs will be developed for communication with external systems, such as payment processing and digital wallet management. The application will be designed for Android devices and the data will be stored in a database for efficient management.

2.2 Product functionality

- Registration and authentication of users, parking lot owners and administrators.
- Display of the user's real-time location and available parking spaces on an interactive map.
- Making online payments securely and managing digital wallets.
- Navigation and prediction of routes to the selected parking lots.
- Management of user and owner profiles, including requests, acceptance/rejection of requests and service charges.
- Report of news during the lease of a parking lot.
- Support and help for users in case of doubts or technical problems..

2.3 User characteristics

Tipo de usuario	[Inserte aquí el texto]
Formación	[Inserte aquí el texto]
Habilidades	[Inserte aquí el texto]
Actividades	[Inserte aquí el texto]

2.4 Restricctions

- The application will be available only for Android devices.
- Legal limitations and restrictions related to the leasing of parking spaces and the availability of public spaces must be complied with.
- The application must guarantee the protection of personal and confidential data of the users in accordance with the applicable privacy regulations.

2.5 Assumptions and dependencies

- It is assumed that users will have compatible Android mobile devices and access to an Internet connection to use the application.
- The accuracy of the real-time location will depend on the availability and accuracy of the GPS and map services used.
- The collaboration of the parking lot owners will be required to verify and provide the necessary documentation on the spaces offered.

2.6 Predictable evaluation of the system

- In future versions, additional functionalities could be added such as the integration of parking reservation systems, the inclusion of additional payment methods and the possibility of rating and reviewing parking spaces.
- The possibility of expanding the availability of the application to other mobile platforms, such as iOS, is contemplated to increase the potential user base.

3 SPECIFIC REQUIREMENTS

Número de requisito	#1
Nombre de requisito	Estructura del sistema.
Tipo	☐ Requisito ☐ Restricción
Fuente del requisito	Funcionalidad para el usuario
Prioridad del requisito	☐ Alta/Esencial ☐ Media/Deseado ☐ Baja/ Opcional

3.1 System Requirements

The system will consist of a mobile application developed for Android that will interact with a centralized database for the storage and management of relevant information. The application will communicate with external services via API to process payments, manage digital wallets and access additional information.

3.1.1 API integration

APIs must be implemented for integration with external services, such as payment gateways and map providers, for payment processing and real-time location display.

3.1.2 Fault tolerance

The system must be able to handle errors and failures without significant interruptions in the service, guaranteeing recovery and operational continuity.

3.1.3 interpolarity

The system must be compatible with common standards and protocols to allow interoperability with other systems and services, facilitating integration with third parties and future expansion.

3.2 functional requirements

Within what are functional requirements, in this context, we detail the following:

3.2.1 architecture design

- A solid and scalable architecture design must be carried out that allows the efficient and reliable operation of the mobile application.
- The components of the system must be identified and defined, as well as the interactions and relationships between them.
- ppropriate architectural patterns should be established, such as three-tier architecture (frontend, backend, and database) or any other appropriate approach for the project.Design of the topic base
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3.2.2 API design

- You must design application programming interfaces (APIs) that allow communication and integration with other external systems and services.
- The endpoints, methods and parameters necessary for data exchange operations between the mobile application and external APIs must be defined.

3.2.3 Implementation of the first frames

- The initial design of the screens or frames of the mobile application, which represent the user interface and the interaction with the user, must be implemented.
- The visual design, usability and navigation flow requirements established in the use cases and user interface requirements must be considered.

3.3 non-functional requirements

3.3.1 Performance requirements

- The application must search and display results quickly and efficiently, minimizing waiting time for users.
- The system must be able to handle a large number of users and simultaneous transactions without degrading its performance.

3.3.2 Security

- The system must protect the personal and confidential data of users through the use of adequate security measures, such as data encryption and user authentication.

3.3.3 Usability

- User-centered design principles should be considered and usability testing performed to ensure that the application is accessible and understandable to all users.

3.3.4 Availability

- The application must be available and accessible to users at all times, avoiding unplanned downtime.
- High availability measures, such as the use of redundant servers and backup systems, must be implemented to minimize any service interruption.

3.3.5 Scalability

- The system must be scalable to support an increase in demand as the user base grows.
- It must be able to handle an increasing number of transactions and concurrent users without affecting its performance.
- Scalable techniques and technologies should be used, such as the use of cloud servers and the ability to scale resources up or down as needed.