
Software Requirements Specification

Project: Supply Locator System

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**Supply Track Resource Locator
Software Requirements Specification**

2

TABLE OF CONTENTS

1. INTRODUCTION.....	5
1.1. PURPOSE.....	5
1.2. SCOPE.....	5
1.3. INVOLVED STAFF.....	6
1.4. DEFINITIONS, ACRONYMS AND ABBREVIATIONS.....	8
1.5. REFERENCES.....	10
1.6. SUMMARY.....	10
2. GENERAL DESCRIPTION.....	11
2.1. PRODUCT PERSPECTIVE.....	11
2.2. PRODUCT FUNCTIONALITY.....	12
2.3. USER CHARACTERISTICS.....	13
2.4. RESTRICTIONS.....	13
2.5. ASSUMPTIONS AND DEPENDENCE.....	13
2.6. EXPECTED SYSTEM EVOLUTION.....	14
3. SPECIFIC REQUIREMENTS.....	15
3.1. COMMON INTERFACE REQUIREMENTS.....	17
3.1.1. USER INTERFACES.....	17
3.1.2. HARDWARE INTERFACES.....	17
3.1.3. SOFTWARE INTERFACES.....	17
3.1.4. COMMUNICATION INTERFACES.....	17
3.2. FUNCTIONAL REQUIREMENTS.....	18
3.3. NON FUNCTIONAL REQUIREMENTS.....	19
4. ANNEX.....	20

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1. INTRODUCTION

Technology plays a crucial role in improving processes and optimizing resources. While many industries have adopted technological solutions to streamline operations, there are still areas where its potential is not fully realized. One clear example is the construction sector, where the search for and acquisition of materials remains a manual and inefficient process. Despite the presence of numerous suppliers, many consumers still face challenges in quickly and economically finding specific materials. In this context, the development of digital platforms that connect buyers and sellers of construction materials efficiently could significantly transform this process, reducing costs and improving accessibility.

1.1. PURPOSE

The main purpose of this project is to develop a specialized software solution that connects users with local suppliers and buyers of construction materials in an efficient and user-friendly way. This app will allow users to quickly find and purchase materials such as glass, cement, or wood from nearby suppliers. By integrating a real-time map, users can easily locate the closest materials available based on their needs, ensuring faster and more cost-effective purchases. This platform will help reduce transportation costs, enhance convenience, and create a seamless experience for both buyers and sellers.

1.2. SCOPE

The "SupplyTrack" project will focus on developing an app that allows users to search for construction materials from nearby suppliers and vendors, with an integrated map feature to show the closest locations. The system will allow users to select the material they need, such as glass, wood, or metal, and display nearby shops offering those items. The app will feature real-time updates on material availability, pricing, and delivery options. This project will facilitate efficient material sourcing for construction projects, simplify the buying and selling process, and provide a dynamic, easy-to-use platform for both consumers and suppliers.

Supply Track Resource Locator

Software Requirements Specification

5

1.3. INVOLVED STAFF

Name	Díaz Cervantes Amieva Alejandro
Role	Responsible for gathering the essential data and resources required for the successful development of a correct DataBase.
Professional Category	Student
Responsibilities	DataBase
Contact Information	0323105898@ut-tijuana.edu.mx
Approved	

Name	Estrada Zarate Diego Enrique
Role	Responsible for creating a user interface that is attractive, intuitive and easy to use. It must ensure that the user experience is seamless, allowing them to interact with the buy and sell menu, also with the orders, and map.
Professional Category	Student
Responsibilities	Apps Design
Contact Information	0323105895@ut-tijuana.edu.mx
Approved	

Name	Morales Anacleto Mario Yair
Role	Responsible for designing and managing the organization, storage and processing of data from the map and orders.
Professional Category	Student
Responsibilities	Applied Data Structure
Contact information	0323106025@ut-tijuana.edu.mx
Approved	

Supply Track Resource Locator
Software Requirements Specification

6

Name	Torres Iñiguez Ariel
Role	Responsible for designing, implementing and maintaining the necessary web services and api's for the app.
Professional category	Student
Responsibilities	service-oriented web applications
Contact information	0323105933@ut-tijuana.edu.mx
Approved	

1.4. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Some words used in this software media may be unfamiliar to most people, even if they are basic, here are some brief descriptions of the words and abbreviations that may be unfamiliar or unknown what they mean completely may be better in major measure to understand this document.

User: A user is a person who uses or interacts with an application, software, electronic device, or computer system to accomplish a specific goal.

Software: This is a term that refers to a program or a set of computer programs, as well as the data, procedures, and guidelines that allow various tasks to be performed in a computer system

Module: A module in the software is a component that performs a specific function and is composed of different computer programs, as well as it can be a class, package, library or even a complete application that intersects with others to form more robust and complete systems.

Database: A database is a software product designed to store large amounts of information in an organized and structured manner. It can be stored locally on your personal computer or on an external remote server.

Reliability: It's the reliability with which an interface can be used by a user, reliability implies that the software must be understandable, learnable, usable, and attractive, and contribute to the functionality and efficiency of the product.

Portability: It's the possibility to compile the source code of a program so that it can be run on different computer platforms. Is the measure of the ease with which an application can transfer a computing environment.

Supply Track Resource Locator Software Requirements Specification

8

Optimization: Software optimization seeks to adapt computer systems to perform their tasks as efficiently as possible and use as few resources as possible.

Scalability: This refers to the ability of an application or system to handle an increased workload or demand efficiently, without compromising performance.

Security: It is essential to protect privacy and ensure a secure environment for users and for the program itself, protecting the integrity of data and ensuring the safety of users.

Performance: It is the measure of how efficiently the application uses the system resources to do Performance encompasses different aspects of how the program interacts with the underlying device.

1.5. REFERENCES

Reference	Title	Date	Author
https://weremote.net/terminos-basicos-programacion/	21 términos básicos de programación que debes dominar	16 de febrero del 2023	Nicholas Bonder
https://redwerk.es/blog/vocabulario-de-terminos-de-desarrollo-de-software-para-no-tecnicos-los-60-mas-importantes/	Vocabulario de términos de desarrollo de software para no técnicos: Los 60 más importantes	08 de agosto del 2023	REDWERK

1.6. SUMMARY

The goal of this project is to develop a technological platform that will improve the procurement and distribution of construction materials by connecting users with nearby suppliers and buyers. This system is aimed at users who need an efficient, real-time way to locate and purchase construction materials, optimizing both time and cost. By integrating geolocation features and a mobile application, users will be able to search for specific materials, such as glass, cement, or wood, and easily find the closest providers.

The platform will be designed with multiple modules that allow both buyers and sellers to interact seamlessly. These modules will cover material search, location-based mapping, and order management. The solution aims to enhance the overall efficiency of the construction supply chain.

2. GENERAL DESCRIPTION

A technological platform will be developed to streamline the procurement and distribution of construction materials by connecting buyers with nearby suppliers. The system aims to optimize material sourcing, saving both time and cost for users by integrating geolocation features and a mobile application. Users will be able to search for specific materials, such as glass, wood, or cement, and easily locate the nearest vendors. It will also facilitate communication between buyers and sellers, improving the overall efficiency of the construction material supply chain. The program will be organized into different modules that make it simple for users to navigate and understand the system's functionalities.

2.1. PRODUCT PERSPECTIVE

This system targets users who need an efficient and convenient way to source construction materials. The app will be designed to enhance the user experience by offering seamless navigation, search functionality, and instant access to crucial information, all aimed at optimizing material sourcing for construction projects.

2.2. PRODUCT FUNCTIONALITY

The platform will enable users to quickly search for specific materials, view real-time availability, and compare prices from various local suppliers. It will also include features like integrated maps for locating nearby vendors, instant messaging for communication between buyers and sellers, and real-time updates on pricing and stock levels.

PRODUCT FUNCTIONALITY

The system is divided into three types of users: an Administrator with full access, a seller who can register materials, and a buyer who makes the orders.

ADMINISTRATOR:

- Create, edit, and delete user accounts.
- Approve or reject supplier registrations
- Handle disputes between user and suppliers
- Moderate reviews and ratings

SELLER USER

- Create and manage their supplier profile.
- Add, edit, or remove products and services.
- Set prices, availability, and service details.
- Receive and manage orders from buyers.
- Communicate with buyers via messaging.
- Track payments and order history.
- Respond to customer reviews and ratings.

BUYER USER

- Search and browse suppliers and products.
- Report issues with orders or suppliers.
- Send requests for services or materials.
- Receive order confirmations and updates.

2.3. USER CHARACTERISTICS

User Type	Administrator
Education	Background in materials of construction or related fields
Abilities	Basic program management
Activities	Register, configure, and manage all system data, including users information, reports, etc. Having all access.

User Type	Seller
Education	Knowledge in sales, logistics, or construction material management.
Abilities	Inventory management, pricing, and customer service.
Activities	List available construction materials (glass, wood, cement, etc.) with real-time pricing and stock levels.

User Type	Buyer
Education	Knowledge in construction, home improvement, or project management (optional).
Abilities	Searching for products, comparing prices, and managing purchases.
Activities	Search for specific construction materials from nearby suppliers using the app.

2.4. RESTRICTIONS

- The system must have a user friendly and intuitive interface.
- The system should have a data structure based on the standard MySQL model.
- The system must be available 365 days a year.
- The system must be able to handle an increase in the number of sections without compromising its performance or functionality.
- The app should be compatible with the latest version of the client's operating system.

2.5. ASSUMPTIONS AND DEPENDENCE

- The devices on which the software is deployed must have a minimum of resources to function properly.

- Content management and information input should be the responsibility of the company.
- The person responsible for managing the programme should have a basic knowledge of similar software.

2.6. EXPECTED SYSTEM EVOLUTION

The web and technology trends are evolving rapidly. We want to spend time continuing to learn new tools, languages and techniques to help us keep the website up to date and competitive, including adapting our software to cell phones.

3. SPECIFIC REQUIREMENTS

Requirement number	FR 1
Name	User Registration and Authentication
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	This module allows users to register and log in via email or social networks. It includes secure authentication and profile management, with a personalized experience with location-based services.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

Requirement number	FR 2
Name	Supplier Management
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	A module where suppliers can register, manage their profiles, and update information such as services, schedules, pricing, and location. It ensures verified and up-to-date supplier data.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

Requirement number	FR 3
Name	Geolocation and Map Integration
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	A module that detects the user's location and displays nearby suppliers on a real-time map. It provides route guidance and distance calculation to optimize navigation.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

Requirement number	FR 4
Name	Service and Material Requests
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	A system where users can request services or materials from suppliers. The module includes request tracking, notifications, and status updates for efficient follow-up.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

Supply Track Resource Locator

Software Requirements Specification

15

Requirement number	FR 5
Name	User-Supplier Communication
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	An internal messaging system that allows users and suppliers to communicate directly. This module helps clarify doubts, coordinate deliveries, and discuss service details efficiently.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

Requirement number	FR 6
Name	Secure Payment Processing
Type	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Constraint
Description	A module that integrates PayPal for secure online transactions. It allows users to complete payments directly through the platform and provides transaction history for both users and suppliers.
Priority	<input checked="" type="checkbox"/> High/Essential <input type="checkbox"/> Medium/wished <input type="checkbox"/> Low/Optional

3.1. COMMON INTERFACE REQUIREMENTS

3.1.1. USER INTERFACES

The interface is a key component of our system, serving as the primary point of interaction between users and the platform. It must be visually appealing, user-friendly, and intuitive to ensure seamless navigation.

The design will prioritize ease of use, allowing users to quickly access essential features such as service and material requests, supplier searches, and internal messaging. Additionally, the interface will be fully responsive, adapting to different screen sizes and devices, including desktops, tablets, and mobile phones.

Our approach focuses on delivering a smooth and efficient user experience, ensuring that users can manage their transactions, locate nearby suppliers, and communicate effectively without complications.

3.1.2. HARDWARE INTERFACES

The system requires interaction with devices that support geolocation services to provide accurate positioning of users and suppliers. It also relies on secure authentication mechanisms to ensure safe and reliable transactions.

3.1.3. SOFTWARE INTERFACES

For the platform to be fully functional, it will integrate with various software components. The system will be accessible through web and mobile applications, compatible with major operating systems such as Windows, macOS, Android, and iOS. Additionally, it will incorporate PayPal for secure online transactions and notifications to keep users informed about request statuses.

3.1.4. COMMUNICATION INTERFACES

The system will facilitate interaction between multiple software components to ensure smooth operations. It will support real-time messaging between users and suppliers, push notifications for request updates, and dynamic maps for supplier visualization. The database will be managed using MySQL, storing critical information such as user profiles, supplier details, service requests, and payment records.

3.2. FUNCTIONAL REQUIREMENTS

User Management and Authentication:

- Registration and login via email and social networks.
- User profile management, including location and preferences.

Geolocation and Map Integration:

- User location detection.
- Display of nearby suppliers on a map.
- Directions and routes to reach suppliers.

Supplier Display and Details:

- Supplier profiles with detailed information: description, services offered, schedules, location, and prices.
- Display of reviews and ratings.

Service or Material Requests:

- System for sending requests or reservations for materials and services.
- Confirmation and tracking of requests through notifications.

User-Supplier Communication:

- Internal messaging system to clarify doubts or coordinate deliveries.
- Administrative Management of Companies or Services:
- Dashboard for managing and validating suppliers.
- Verification of authenticity and content control.
- Secure online payment processing through PayPal.
- Transaction history available for both users and suppliers.

3.3. NON FUNCTIONAL REQUIREMENTS

Security

Total security is guaranteed in the use of the software, safeguarding all stored information and only managed by authorized people without the administration affecting the security of our system.

Reliability

User interfaces will be easy to access, streamlining their understanding, usefulness and functionality.

Availability

The system will be available 24 hours a day, every day of the week.

Maintainability

The developed software will have a user manual that offers all the information necessary for its use and will have monthly updates made by our developers.

Portability

The Production Orders system is compatible with any device with Windows 10 or higher operating system.

4. ANNEX