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Software Requirements Specification	Date: <17/10/24>
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Table of Contents

1. Introduction
 - 1.1 Purpose
 - 1.2 Scope
 - 1.3 Definitions, Acronyms, and Abbreviations
 - 1.4 References
 - 1.5 Overview
2. Overall Description
 - 2.1 Use-Case Model Survey
 - 2.2 Assumptions and Dependencies
3. Specific Requirements
 - 3.1 Use-Case Reports
 - 3.2 Supplementary Requirements
4. Supporting Information
 - 4.1 Index
 - 4.2 Appendix

<Project Name>	Version: <1.0>
Software Requirements Specification	Date: <dd/mmm/yy>
<document identifier>	

Software Requirements Specification

1. Introduction

The **Software Requirements Specification (SRS)** describes the functional and non-functional requirements for a secure online e-bidding platform. The platform allows users to conduct business transactions including item listings, bids, purchases, and user ratings. The system also incorporates features to manage user roles, handle ratings, enforce suspensions, and offer premium services for VIP users. The goal of the document is to outline the requirements that will guide the creation and deployment of the system.

1.1 Purpose

The purpose of this **SRS** is to define the complete software requirements for the secure e-bidding system. This document outlines both the functional and non-functional requirements, including system behavior, user interactions, constraints, and performance expectations. The document will serve as a guideline for the system's designers, developers, and testers, ensuring that the final product aligns with the intended design. The SRS will also provide the necessary foundation to understand the scope of the system that will help mitigate potential misunderstandings during the development cycle.

1.2 Scope

This document specifies the software requirements for an online e-bidding system that allows users to list items or services, place bids, and complete secure transactions. The platform accommodates multiple types of users with varying levels of access, including visitors (who can browse the site), registered users (who can actively participate in transactions), and super-users (who can manage user approvals, suspensions, and complaints). Key features include:

- *User registration with validation to prevent bots from accessing the system.*
- *Item listings with prices and deadlines for bids.*
- *Bidding and transaction processing, with money transfers from buyers to sellers.*
- *A rating system where users evaluate each other after transactions, impacting user status.*
- *A VIP system that rewards users with premium privileges for positive engagement.*
- *A creative feature that includes exclusive events for VIPs, such as live bidding sessions.*

1.3 Definitions, Acronyms, and Abbreviations

V: Visitor – A user who can browse the site but cannot participate in transactions

U: Registered User – A user who can list items, place bids, and complete transactions
S: Super-User – A user with administrative privileges, who is responsible for managing user accounts
VIP: Very Important Person – A user who meets specific criteria(high account balance, good ratings) and gets premium privileges
GUI: Graphical User Interface – The visual part of the system in which users interact
SRS: Software Requirements Specification – The document that defines the system’s software requirements

1.4 References

1. How to Write a Software Requirements Specification (SRS) Document

Report Number: N/A

Date: March 11, 2021

Publishing Organization: Perforce Software

Source:

<https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document>

2. Seller Ratings and Their Importance to eCommerce Business

Report Number: N/A

Date: March 10, 2023

Publishing Organization: Shopper Approved

Source:

<https://results.shopperapproved.com/blog/seller-ratings-and-their-importance-to-ecommerce-business>

1.5 Overview

This Software Requirements Specification (**SRS**) provides a comprehensive description of the E-Bidding platform and its features. The document is organized into several key sections that outline the functionality, assumptions, dependencies, and specific requirements of the system.

The **Overall Description** offers a general overview of the platform’s purpose, its main stakeholders, and the types of transactions supported. Key stakeholders include Visitors, Registered Users, VIP members, and Super Users, each with varying levels of access and functionality.

Following the overall description, the document dives into the **Use-Case Model Survey** where several core use cases are detailed, describing how different actors, such as visitors and registered users, interact with the system. These use cases guide the flow of actions within the system, from browsing items to participating in exclusive VIP auctions.

The **Assumptions and Dependencies** section highlights critical assumptions related to user behavior, system reliability, and the dependencies on external services, such as payment gateways and technical support.

In the **Specific Requirements** section, the use cases are further expanded, detailing the system's functional and non-functional requirements to ensure robust design and testing. This section also includes supplementary requirements, covering areas such as security, user interface design, and VIP privileges, ensuring that the platform delivers a seamless and secure auction experience.

Finally, the document concludes with **Supporting Information**, providing additional resources such as use-case models and technical documentation that are essential for understanding the system architecture.

Each section of the document builds upon the previous one to form a cohesive and detailed blueprint for developing the E-Bidding platform.

2. Overall Description

The E-Bidding platform is designed to provide a secure, user-friendly, and efficient environment where users can engage in online auctions. The platform supports various types of transactions including item listings, bidding, purchases, and user ratings. The primary stakeholders of the system include general users, super users, and VIP users, each having distinct levels of access and capabilities within the platform. Additionally, the system ensures secure authentication, handles user suspensions based on performance, and offers exclusive privileges for VIP users.

2.1 Use-Case Model Survey

The use cases below represent interactions within the system that involve visitors, registered users, super-users, and VIP members. Each actor engages with the system based on their role and account status.

Use Case 1: Visitor Browsing

- Actors: Visitor (V)
- Description: Visitors can browse available items and apply to become registered users.

Use Case 2: Item Listing

- Actors: User (U)
- Description: Registered users can list items or services for bidding.

Use Case 3: Bidding on Items

- Actors: User (U)
- Description: Users can place bids on listed items, provided they have sufficient funds.

Use Case 4: Rating and Complaints

- Actors: User (U), Super-User (S)
- Description: After transactions, users rate each other. Super-users handle complaints and manage suspensions.

Use Case 5: VIP Auctions

- Actors: VIP Users
- Description: VIP users can participate in exclusive live auctions for premium items.

The system includes interactions between Visitors, Registered Users, VIPs, and Super-Users.

The flow of the software program will be as follows:

1. Visitors can become Users after registration.
2. Users interact with each other during bidding, rating, and transactions.
3. Super-Users monitor activity and enforce rules.
4. While VIP Users gain additional privileges like exclusive auctions.

2.2 Assumptions and Dependencies

- User ratings will serve as the primary measure for suspensions and VIP promotions, relying on the assumption that users will provide honest and unbiased feedback.
- The successful operation of VIP features, such as live bidding sessions, assumes that there will be an adequate number of VIP members actively participating.
- The system will assume the availability of technical support resources for handling user complaints and disputes.
- The platform depends on maintaining up-to-date user data for calculating ratings, suspensions, and promotions.
- The platform assumes that users have access to a stable internet connection for uninterrupted glitch-free participation in auctions.
- The system depends on the availability of third-party payment gateways for processing secure transactions.
- Security mechanisms such as bot-prevention methods, data encryption, and secure authentication will be implemented using widely accepted standards.

3. Specific Requirements

This section outlines the detailed software requirements necessary for the design and testing of the E-Bidding System. The requirements are captured using a combination of use-case modeling and supplementary specifications. These will enable the system's design to meet functional and non-functional goals.

3.1 Use-Case Report

The core use cases are described as follows:

Use Case 1: Visitor Browsing and Applying

- Actors: Visitor (V)
- Description: V browses item listings and applies to become U by solving an arithmetic question to prevent bot entries.
- Precondition: V accesses the e-bidding system.

Use Case 2: User Listing Items

- Actors: User (U)
- Description: U can list items or services they wish to sell or rent, specifying asking price or price range.
- Precondition: U has logged into their account.

Use Case 3: User Bidding on Items

- Actors: User (U)
- Description: U bids on items, ensuring they have adequate funds in their account.
- Precondition: U is logged in and has sufficient funds.

Use Case 4: Rating and Complaints

- Actors: User (U), Super User (S)
- Description: After a transaction, U can rate the seller/renter, while S manages complaints and suspensions.
- Precondition: A transaction has been completed.

Use Case 5: VIP Live Bidding

- Actors: VIPs
- Description: VIP users participate in time-sensitive, live bidding sessions for items owned by VIPs.
- Precondition: User has VIP status.

3.2 Supplementary Requirements

The following supplementary requirements ensure the system meets additional performance and usability needs:

- **Security:** The system must provide secure user authentication and transaction processes, ensuring that all sensitive information is protected during data transfer.
- **User Interface (UI):** The UI should be personalized for each User, displaying relevant information upon login based on previous transaction history and account status.

- **Rating Anonymity:** Ratings should remain anonymous to encourage honest feedback. Users should not be able to identify who rated them to avoid retaliation or biased ratings.
- **Suspension Mechanism:** Users with consistently low ratings (below 2, based on at least three evaluations) will be suspended. Suspended Users can only regain access by paying a fine or receiving clearance from the Super User. Users who consistently rate too low or too high will also face suspension. Users suspended three times will be permanently removed from the system. This ensures that only users with high ratings are allowed on the platform, enhancing the overall user experience and driving the system's success, as outlined by shopperapproved.com.
- **VIP Privileges:** VIP Users will enjoy special privileges such as live bidding sessions and discounts. However, failing to maintain VIP eligibility criteria, such as maintaining a minimum balance of \$5000 or conducting five transactions without complaints, will result in the loss of VIP status.

4. Supporting Information

4.1 Index

Topic	Section Number
Introduction	1
Purpose	1.1
Scope	1.2
Definitions, Acronyms, and Abbreviations	1.3
References	1.4
Overview	1.5
Overall Description	2
Use-Case Model Survey	2.1
Assumptions and Dependencies	2.2
Specific Requirements	3
Use-Case Report	3.1
Supplementary Requirements	3.2
Supporting Information	4

Index	4.1
Appendices	4.2

4.2 Appendix

VIP Users ~ VIP users are members who meet certain criteria giving them exclusive privileges within the platform. These privileges enhance their overall experience and provide significant advantages compared to regular users. Key benefits for VIP members include: Access to Special VIP Auctions, Higher Betting Limits, Exclusive Betting Markets, Priority Customer Support, Cashback Offers, Reload Bonuses, Free Bets, Merchandise and Prizes, Early Access to Promotions and Offers, Reduced Fees.

Super Users ~ Super Users (admins) on the platform have elevated privileges that allow them to manage and maintain the entire system. Their responsibilities include:

- Managing user accounts: approving, suspending, or removing users, and addressing any user-related issues.
- Overseeing listings: reviewing, editing, or removing product listings to ensure they comply with platform policies.
- Handling disputes: resolving buyer-seller conflicts and enforcing platform rules.
- Monitoring platform activities: tracking transactions, user behavior, and potential security threats.
- Managing categories and settings: organizing product categories and adjusting platform-wide settings like fees or promotional policies.
- Enforcing policies: ensuring all users adhere to terms of service and community guidelines.