Architecture Document

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1. Introduction

1.1 Purpose

The Architecture Document outlines the structure of the auction management platform. It provides an understanding of the system's key components and their interactions.

1.2 Scope

The platform supports online auctions, allowing users to participate in bidding, manage bids, and handle transactions.

1.3 Definitions, Acronyms, and Abbreviations

Auction: A process in which goods or services are sold to the highest bidder.
Bidding: Offering a price for goods or services in an auction.
User: A participant in the auction system.

1.4 References

Project Plan (referencing specific sections as required).

2. Architectural Representation

Overview of the architecture layers and components.
Diagrams illustrating the structure of the platform.

3. Architectural Goals and Constraints

3.1 Goals

Ensure scalability and performance.
Implement secure and reliable user interactions.

3.2 Constraints

Limited budget and open-source tools.
Basic security mechanisms due to the scope of the project.

4. Use-Case View

4.1 Architecturally-Significant Use Cases

User Registration and Login.
Bidding in Auctions.
Auction Management and Completion.

5. Logical View

5.1 Architecture Overview – Package and Subsystem Layering

User Interface Layer: HTML/CSS/JavaScript.
Business Logic Layer: Python.
Data Storage Layer: MySQL.

6. Process View

6.1 Processes

User Registration
Bidding
Auction Management
Payment Processing

6.2 Process to Design Elements

Each process is mapped to specific components in the architecture.

6.3 Process Model to Design

Waterfall process model influences sequential design.

6.4 Model Dependencies

Components rely on a database for auction data management and user authentication.

6.5 Processes to Implementation

The logical flow from design to coding is implemented using Python for backend and HTML/CSS/JavaScript for frontend.

7. Deployment View

External Desktop PC: Users can access the auction system via desktops and laptops.
Desktop PC: The development and testing environments.
Registration Server: Manages user registrations and login processes. Course Catalog: Handles the list of active auctions (optional, depending on context). Billing System: Payment gateways for transaction processing.

8. Performance

The system will handle a small user base and allow for real-time bidding with minimal latency.

9. Quality

Usability: User-friendly interface designed for ease of use.
Security: Basic authentication measures implemented.
Functionality: All core functionalities, including bidding and transaction handling, will work seamlessly.