

Work summary for Final Sprint

The final sprint has wrapped up our project.

- We aimed to add Kafka for real-time bidding, but instead reverted to ETL to insert bids.
- We integrated with the Frontend.
- We deployed on Ubuntu.

Summary of Work Completed:

1. Functional: Auction Management

Item Listings: Enabled sellers to create detailed auction listings with descriptions.

Auction Parameters: Provided functionality to set parameters like duration and starting price.

Search and Filters: Implemented advanced search and filtering options for active auctions.

Data Export: Integrated the ability for users to export auction data.

2. Functional: Auction User Management

Authentication: Developed secure registration and login processes.

Profile Management: Allowed users to manage profiles and preferences.

Role-Based Access Control: Differentiated features and access for buyers and sellers.

Seller Features: Added seller ratings and reviews to promote trust and transparency.

3. Functional: Bids Management

Real-Time Bidding: Provided functionality for users to place bids in real-time.

Bid Tracking: Enabled users to track their bids and auction activity history.

Notifications: Added customizable notification preferences for updates about bids and auctions.

4. Functional: ETL Pipeline

CSV Integration: Designed an ETL pipeline to read and process bids from CSV files.

Database Loading: Automated the transformation and population of bids data into the database.

Data Integrity: Ensured integration of extracted bids into the relational database schema.

5. Integrating with Frontend

The Backend endpoints were connected to the Frontend.

6. Deployment on Ubuntu

The Project was deployed on Ubuntu

7. . Challenges

1. Kafka Integration with Many-to-Many Relationships

- **Initial Setup:** Kafka was successfully set up and running, ready to handle real-time messaging.
- **Challenge:** Integrating Kafka with **ManyToMany** join relationships in the project caused significant issues.
 - Complex data relationships led to synchronization problems.
 - Difficulty in managing the cascading operations for auction and bid entities.
- **Decision:** Due to these challenges, we replaced Kafka with a simpler and more maintainable ETL pipeline.

2. Transition to ETL Pipeline

- **Implementation:** Designed and implemented an ETL pipeline to handle data insertion tasks.
- **Use Case:** Bids are now being inserted into the system via the ETL pipeline.
- **Benefits:**
 - Simplified data flow and processing.