SDA Deliverable 2

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Use Case Diagram

Use cases have been identified in the following diagram those go through the criteria of *boss test*, *elementary business value test* and the *size test*.
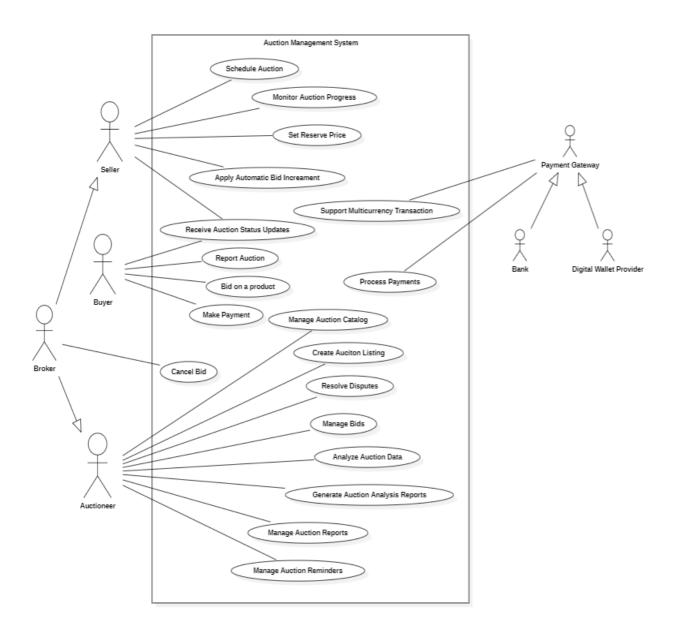

Fig 1: Use Case Diagram

Domain Model

The conceptual classes upon which the Auction Management System (AMS) resides on have been modelled using the Domain Model as mentioned in Larman's book of UML Design and Patterns. The concepts, associations and generalizations are depicted by following a preferred format as illustrated in the mentioned resource. Some conceptual classes have attributes while some are deprived of attributes of any kind. The **descriptor classes** have also been used with association relationships with concepts that maintain a record of the data/records they represent.
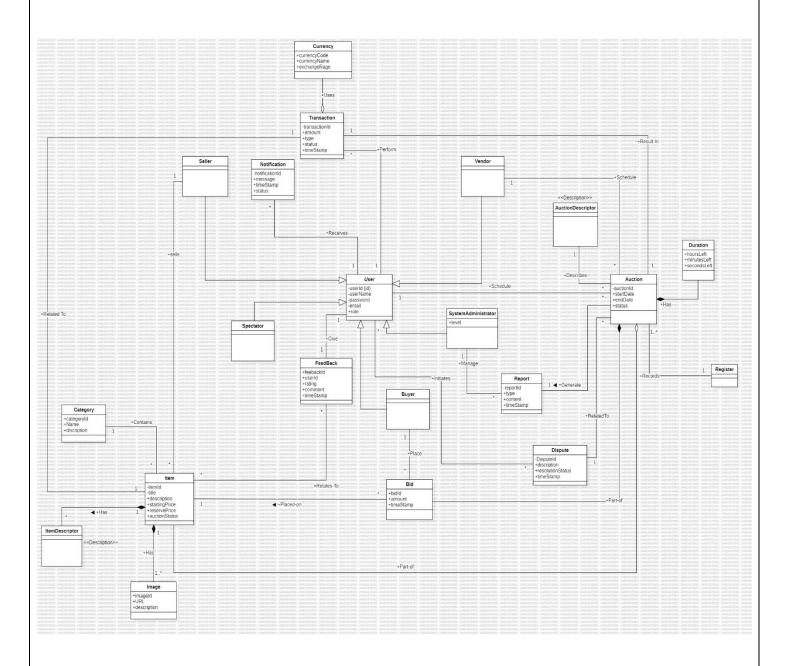

Fig 2: Domain Model Diagram

Extended Use Cases

1. **Create Auction Listing**

Use Case ID: UC01
Use Case Name: Create Auction Listing
Scope: Auction Management System
Level: User Goal
Primary Actor*:* Dealer
Stakeholders and Interests: • Dealer: Aims to list items for sale easily and efficiently to reach potential buyers. • Auction Platform: Interested in attracting sellers to list their items on the platform to increase the variety and volume of items available for auction. • Potential Buyers: Interested in accessing a diverse range of items available for auction.
Pre-Condition: The dealer is authenticated and authorized to list items for auction.
Post-Condition: The auction listing is successfully created and made available for potential buyers to view and bid on.
Main Success Scenario:

User Action	System Response
1. Dealer accesses the online auction management system. **3.** Dealer selects the option to create a new auction listing. **5.** Dealer provides the required information and uploads images of the item.	**2.** System displays the auction management dashboard. **4.** System prompts the dealer to input details of the item for auction, including title, description, category, starting price, and any additional terms or conditions. **6.** System validates the input and confirms the creation of the auction listing. **7.** System displays the newly created auction listing on the platform for potential buyers to view and bid on.

Extensions:	
3a. Dealer encounters technical issues while creating the listing:	**3a.** System displays an error message and advises the dealer to try again later or contact customer support for assistance.
4a. Dealer provides incomplete or invalid information:	**4a.** System prompts the dealer to correct the errors or provide the missing information before proceeding.
5a. Dealer encounters difficulties uploading images:	**5a.** System provides alternative methods for image upload or suggests resizing the images to meet the platform's requirements.

Special Requirements:

- The auction listing creation process should be user-friendly and intuitive, ensuring ease of use for dealers of varying technical abilities.
- Real-time validation of input fields should be implemented to ensure the accuracy and completeness of information provided by dealers during listing creation.

Technology and data variation list:

- The system should support multiple devices, including desktops, laptops, tablets, and smartphones, to enable dealers to create auction listings from various platforms.
- Data variation should be supported to accommodate different types of auction listings, including various categories, item descriptions, and pricing structures.

Frequency of use:
Dealers may create auction listings multiple times a day or as needed, depending on their inventory and sales strategy.

Open Issues:

- How does the system handle updates or revisions to existing auction listings?
- What measures are in place to prevent fraudulent or misleading listings on the platform?

2. Schedule Auction

Use Case ID: UC02
Use Case Name: Schedule Auction
Scope: Auction Management System
Level: User Goal
Primary Actor: Seller
Stakeholders and Interests: • Seller: Aims to plan auctions for explicit dates and times to optimize visibility and engagement from potential buyers. • Auction Platform: Interested in providing sellers with the functionality to schedule auctions, increasing the availability and variety of items for potential buyers.
Pre-Condition: The seller is authenticated and authorized to schedule auctions.
Post-Condition: The auction is successfully scheduled for the specified date and time.
Main Success Scenario:

User Action	System Response
1. Seller accesses the online auction management system. 3. Seller selects the option to schedule a new auction. 5. Seller provides the required information and confirms the scheduling of the auction.	2. System displays the seller's dashboard or auction management interface. 4. System prompts the seller to input details of the auction, including item description, category, starting price, duration, and the explicit date and time for the auction to begin. 6. System validates the input and confirms the successful scheduling of the auction. 7. System displays the scheduled auction on the platform, indicating the date and time it will begin.

Extensions:

3a. Seller encounters technical issues while scheduling the auction:	**3a.** System displays an error message and advises the seller to try again later or contact customer support for assistance.
4a. Seller provides incomplete or invalid information:	**4a.** System prompts the seller to correct the errors or provide the missing information before proceeding.
5a. Seller encounters difficulties selecting the date and time for the auction:	**5a.** System provides a user-friendly interface with a calendar and time picker to facilitate the selection process.

Special Requirements:

- The auction scheduling process should be user-friendly and intuitive, ensuring ease of use for sellers of varying technical abilities.
- Real-time validation of input fields should be implemented to ensure the accuracy and completeness of information provided by sellers during auction scheduling.

Technology and data variation list:

- The system should support multiple devices, including desktops, laptops, tablets, and smartphones, to enable dealers to create auction listings from various platforms.
- Data variation should be supported to accommodate different types of auction listings, including various categories, item descriptions, and pricing structures.

Frequency of use:
Dealers may schedule auctions as needed, depending on their inventory and sales strategy.

Open Issues:

- How does the system handle conflicts if multiple sellers attempt to schedule auctions for the same date and time?
- What measures are in place to prevent abuse of the auction scheduling feature, such as spam or excessive listings?

3. <u>**Manage Bid**</u>

Use Case ID: UC03
Use Case Name: Manage Bid
Scope: Auction Management System
Level: User Goal
**Primary Actor*:* Dealer

Stakeholders and Interests:

- Dealer: Aims to manage bids effectively by responding to purchaser bids in a timely manner to facilitate successful auction transactions.
- Purchasers: Interested in receiving responses to their bids and engaging in negotiations with dealers to potentially secure items for purchase.

Pre-Condition: The dealer is authenticated and has active auction listings with bids from purchasers.

Post-Condition: The dealer successfully manages bids by responding to purchaser bids.

Main Success Scenario:

User Action	System Response
1. Dealer accesses the auction management interface. **3.** Dealer selects an auction listing with pending bids to manage. **5.** Dealer reviews the bids and decides on the appropriate action for each bid, such as accepting, rejecting, or counter-offering. **6.** Dealer responds to the bids by entering the desired action for each bid.	**2.** System displays the list of active auction listings with pending bids. **4.** System presents the details of the selected auction listing, including the item description, current bid amount, and bidder information. **7.** System updates the bid status accordingly and notifies the purchasers of the dealer's response.
Extensions: **3a.** Dealer encounters technical issues while accessing the auction management interface: **5a.** Dealer receives bids with insufficient information or suspicious activity: **6a.** Dealer receives multiple bids for the same item:	**3a.** System displays an error message and advises the dealer to try again later or contact customer support for assistance. **5a.** System provides tools for the dealer to investigate and verify the legitimacy of the bids before responding. **6a.** System provides options for the dealer to compare and prioritize bids before responding.

Special Requirements:

- The bid management process should be efficient and user-friendly, allowing dealers to respond to bids quickly and easily.
- Real-time updates and notifications should be provided to dealers and purchasers to keep them informed of bid status and responses.

Technology and data variation list:

- The system should support real-time bid management functionality to ensure timely responses to purchaser bids.
- Data variation should be supported to accommodate different types of bids, including varying bid amounts and terms.

Frequency of use:
Dealers may manage bids multiple times a day or as needed, depending on the activity on their auction listings.

Open Issues:

- How does the system handle disputes or disagreements between dealers and purchasers regarding bid responses?
- What measures are in place to prevent bid manipulation or fraudulent activity on the platform?

4. <u>Monitor Auction Progress</u>

Use Case ID: UC04	
Use Case Name: Monitor Auction Progress	
Scope: Auction Management System	
Level: User Goal	
Primary Actor*:* Seller	
Stakeholders and Interests: • Seller: Aims to monitor the progress of auctions to track bidding activity, view current bid amounts, and gauge the success of their listings. • Potential Buyers: Interested in accessing real-time information about ongoing auctions to participate in bidding and make informed purchasing decisions.	
Pre-Condition: The seller is authenticated and has active auction listings in progress.	
Post-Condition: The seller successfully monitors the progress of auctions and obtains relevant information about bidding activity.	
Main Success Scenario:	

User Action	System Response
1. Seller accesses the online auction management system. **3.** Seller navigates to the "My Auctions" section or selects a specific auction listing to monitor. **5.** Seller reviews the auction progress and observes bidding activity in real-time. **6.** Seller may act based on the observed progress, such as adjusting reserve prices, promoting the auction, or responding to bids.	**2.** System displays the seller's dashboard or auction management interface. **4.** System presents the details of the selected auction, including current bid amounts, bidder information, remaining time, and any bid notifications. **7.** System updates the auction progress information continuously and provides notifications for significant events, such as new bids or auction ending soon.
Extensions: **3a.** Seller encounters technical issues while accessing auction progress information: **5a.** Seller observes unexpected or suspicious bidding activity:	**3a.** System displays an error message and advises the seller to try again later or contact customer support for assistance. **5a.** System provides tools for the seller to investigate and address any irregularities, such as bid retraction or shill bidding.

Special Requirements:

- The auction progress monitoring process should provide real-time updates and notifications to sellers to keep them informed of bidding activity and significant events.
- The system should support intuitive and user-friendly interfaces for sellers to easily navigate and access auction progress information.

Technology and data variation list:

- The system should support real-time updates and notifications for auction progress information to ensure timely and accurate monitoring by sellers.
- Data variation should be supported to accommodate different types of auctions, including varying bid amounts, durations, and bidding activity levels.

Frequency of use:

Sellers may monitor auction progress periodically throughout the duration of their auction listings, especially during key bidding periods or leading up to auction closing.

Open Issues:

- How does the system handle sudden spikes in bidding activity or last-minute bids close to the auction end time?
- What measures are in place to prevent bid manipulation or fraudulent activity during auctions?

5. <u>Set Reserve Price</u>

Use Case ID: UC05	
Use Case Name: Set Reserve Price	
Scope: Auction Management System	
Level: User Goal	
Primary Actor*:* Seller	

Stakeholders and Interests:

- Seller: Aims to set a reserve price for auction items to ensure they do not sell below a specified minimum value, protecting their interests and maximizing potential profits.
- Potential Buyers: Interested in knowing if there is a reserve price set for auction items to determine their bidding strategy and assess the likelihood of winning the item.

Pre-Condition: The seller is authenticated and has active auction listings for which reserve prices can be set.

Post-Condition: The reserve price is successfully set for the auction item, ensuring it will not sell below the specified minimum value.

Main Success Scenario:

User Action	System Response
1. Seller accesses the online auction management system. **3.** Seller selects the option to set a reserve price for a specific auction listing. **5.** Seller enters the desired reserve price and confirms the setting.	**2.** System displays the seller's dashboard or auction management interface. **4.** System prompts the seller to input the reserve price amount for the auction item. **6.** System validates the input and confirms the successful setting of the reserve price. **7.** System updates the auction listing to display the reserve price information to potential buyers.
Extensions: **3a.** Seller encounters technical issues while setting the reserve price: **4a.** Seller sets an unrealistic or impractical reserve price:	**3a.** System provides guidance or suggestions for setting a more appropriate reserve price based on market value or item condition. **4a.** System displays an error message and advises the seller to try again later or contact customer support for assistance.

Special Requirements:

- The reserve price setting process should provide clear guidance and options for sellers to set realistic and effective reserve prices for their auction items.
- Real-time updates should be provided to potential buyers, indicating the presence of a reserve price on auction listings.

Technology and data variation list:

- The system should support the storage and display of reserve price information for auction listings to ensure transparency and inform potential buyers.
- Data variation should be supported to accommodate different types of auction items, each with its own reserve price setting.

Frequency of use:
Sellers may set reserve prices for auction items as needed, depending on their pricing strategy and perceived value of the items.

Open Issues:

- How does the system handle scenarios where the reserve price is not met during the auction?
- What measures are in place to prevent sellers from setting excessively high reserve prices that deter potential buyers?

6. <u>Manage Auction Catalog</u>

Use Case ID: UC06
Use Case Name: Manage Auction Catalog
Scope: Auction Management System
Level: User Goal
**Primary Actor*:* Auctioneer
Stakeholders and Interests: • Auctioneer: Aims to manage multiple auctions efficiently, organizing and overseeing the catalog of items available for sale to maximize auction participation and revenue. • Sellers: Interested in having their auction items effectively managed and promoted within the auction catalog to attract potential buyers and achieve successful sales.
Pre-Condition: The auctioneer is authenticated and authorized to manage auction catalogs.
Post-Condition: The auctioneer successfully manages the auction catalog, ensuring all listed items are organized, categorized, and promoted effectively.
Main Success Scenario:

User Action	System Response
1. Auctioneer accesses the online auction management system. **3.** Auctioneer navigates to the auction catalog section or selects a specific auction to manage. **5.** Auctioneer reviews the catalog and performs actions such as adding new items, updating item information, categorizing items, or removing outdated listings. **6.** Auctioneer may also apply promotional features or marketing strategies to enhance the visibility and attractiveness of certain auction items.	**2.** System displays the auctioneer's dashboard or catalog management interface. **4.** System presents the list of items available for auction within the catalog, along with relevant details such as item descriptions, categories, and current status. **7.** System updates the auction catalog with any changes made by the auctioneer, ensuring that all listed items are accurately represented and effectively managed.

Extensions:	
3a. Auctioneer encounters technical issues while accessing the auction catalog:	**3a.** System provides guidance or assistance tools to facilitate the catalog management process and ensure accuracy and efficiency.
5a. Auctioneer encounters difficulties updating or adding new items to the catalog:	**5a.** System displays an error message and advises the auctioneer to try again later or contact customer support for assistance.

Special Requirements:

- The auction catalog management process should support the efficient organization and promotion of auction items, enabling the auctioneer to effectively manage large volumes of listings.
- Real-time updates and notifications should be provided to sellers and potential buyers, reflecting any changes or additions to the auction catalog.

Technology and data variation list:

- The system should support the storage and retrieval of item information within the auction catalog, allowing for easy management and organization by the auctioneer.
- Data variation should be supported to accommodate different types of auction items, each with its own unique details and characteristics.

Frequency of use:

The auctioneer may manage the auction catalog regularly, adding new items, updating information, and optimizing catalog organization to ensure its effectiveness in attracting potential buyers.

Open Issues:

- How does the system handle conflicts or discrepancies in item information within the auction catalog?
- What measures are in place to prevent unauthorized access or manipulation of the auction catalog by unauthorized users?

7. **Process Payment**

Use Case ID: UC07
Use Case Name: Process Payment
Scope: Auction Management System
Level: User Goal
Primary Actor: Seller
Stakeholders and Interests: • Seller: Aims to manage payments received for different auctions, ensuring that funds are securely processed, tracked, and reconciled to facilitate successful transactions. • Buyers: Interested in ensuring that payments are processed accurately and securely for the items they have purchased in auctions.
Pre-Condition: The seller is authenticated and has received payments for auctions conducted on the platform.
Post-Condition: Payment management tasks are successfully completed, and funds are reconciled and available for the seller's use.
Main Success Scenario:

User Action	System Response
1. Seller accesses the online auction management system. 3. Seller navigates to the payment management section or selects a specific auction for which payments need to be managed. 5. Seller reviews the payment information and performs actions such as verifying payment receipt, confirming successful transactions, or initiating fund transfers to their designated accounts. 6. Seller may also handle any payment discrepancies or issues, such as refunds or payment disputes, by communicating with buyers or contacting customer support.	2. System displays the seller's dashboard or payment management interface. 4. System presents the list of payments received for the selected auction or auctions, including payment details such as amounts, transaction IDs, and payment statuses. 7. System updates the payment status and transaction records accordingly, reflecting any changes or actions taken by the seller.

Extensions:	
3a. Seller encounters technical issues while accessing payment information:	**3a.** System displays an error message and advises the seller to try again later or contact customer support for assistance.
5a. Seller identifies discrepancies or errors in payment details:	**5a.** System provides tools or options for the seller to address payment discrepancies, such as initiating refunds, resolving payment disputes, or contacting buyers for clarification.

Special Requirements:

- The payment management process should support secure handling and reconciliation of payments received for auction transactions to ensure accuracy and accountability.
- Real-time updates and notifications should be provided to sellers, reflecting changes or updates to payment statuses and transaction records.

Technology and data variation list:

- The system should support the storage and retrieval of payment information and transaction records, allowing for easy management and reconciliation by sellers.
- Data variation should be supported to accommodate different payment methods, currencies, and transaction types used in auction transactions.

Frequency of use:

Sellers may manage payments regularly, especially following the conclusion of auction listings, to ensure timely processing and reconciliation of funds.

Open Issues:

- How does the system handle scenarios where payment reconciliation is not accurate or payments are missing from transaction records?
- What measures are in place to prevent fraudulent or unauthorized transactions from affecting payment management processes?

8. Make Payment

Use Case ID: UC08
Use Case Name: Make Payment
Scope: Auction Management System
Level: Sub-goal
Primary Actor*:* Buyer
Stakeholders and Interests: • Buyer: Aims to make payment securely and efficiently for auction products they have successfully won, ensuring timely completion of transactions and receipt of purchased items. • Sellers: Interested in receiving payment for sold items and ensuring that funds are transferred securely to their accounts upon successful completion of transactions.
Pre-Condition: The buyer has won an auction product and is authenticated and authorized to make payments on the platform.
Post-Condition: Payment for the auction product is successfully completed, and funds are transferred from the buyer to the seller's account.
Main Success Scenario:

User Action	System Response
1. Buyer accesses the online auction management system. **3.** Buyer navigates to the auction product they have won and selects the option to make payment. **5.** Buyer selects the preferred payment method and enters the necessary payment information, such as credit card details or account information.	**2.** System displays the buyer's dashboard or payment interface. **4.** System presents the payment details and options for completing the transaction, including payment methods, amounts, and transaction security measures. **6.** System securely processes the payment transaction using authorized payment gateways or financial institutions, verifying the payment details and completing the transaction. **7.** System notifies the buyer of the successful payment transaction and provides confirmation of payment completion.

Extensions:

3a. Buyer encounters technical issues while accessing payment details or making payment:	**3a.** System displays an error message and advises the buyer to try again later or contact customer support for assistance.
5a. Buyer's payment method is declined or encounters processing errors:	**5a.** System provides alternative payment options or guidance for resolving payment issues, such as using a different payment method or contacting their financial institution for assistance.

Special Requirements:

- The payment process should be conducted securely and comply with relevant payment regulations and standards to protect the buyer's financial information and ensure transaction integrity.
- Real-time updates and notifications should be provided to buyers, reflecting the status of payment processing and completion.

Technology and data variation list:

- The system should support integration with various payment gateways and financial institutions to facilitate secure payment processing for buyers.
- Data variation should be supported to accommodate different payment methods, currencies, and transaction types used by buyers.

Frequency of use:

Buyers may make payments regularly, depending on the number of auction products they have successfully won and wish to purchase.

Open Issues:

- How does the system handle scenarios where payment processing encounters errors or delays, leading to potential disruptions in completing transactions?
- What measures are in place to prevent fraudulent or unauthorized payments from being processed through the system?

9. <u>Resolve Disputes</u>

Use Case ID: UC09

Use Case Name: Resolve Disputes

Scope: Auction Management System

Level: Sub-Goal

Primary Actor: Auctioneer

Stakeholders and Interests:

- Auctioneer: Aims to resolve disputes between buyers and sellers in a fair and timely manner, maintaining the integrity of the auction platform and ensuring customer satisfaction.
- Buyers: Interested in having their concerns or grievances addressed promptly and fairly to resolve any issues with auction transactions.
- Sellers: Interested in resolving disputes amicably to protect their reputation and maintain positive relationships with buyers and other users of the auction platform.

Pre-Condition: A dispute has been raised by a buyer or seller regarding an auction transaction, and the auctioneer is authenticated and authorized to resolve disputes on the platform.

Post-Condition: The dispute is successfully resolved, and appropriate actions are taken to address the concerns of the involved parties, ensuring a satisfactory outcome for all parties involved.

Main Success Scenario:

User Action	System Response
1. Auctioneer accesses the online auction management system. 3. Auctioneer identifies the dispute raised by a buyer or seller and reviews the relevant information and evidence provided by both parties. 4. Auctioneer communicates with the involved parties to gather additional information, clarify issues, and understand their perspectives on the dispute. 5. Auctioneer analyzes the information and evidence presented by both parties objectively, considering relevant auction policies, terms, and conditions. 6. Auctioneer decides or proposes a resolution to the dispute, aiming to address the	2. System displays the auctioneer's dashboard or dispute resolution interface.

concerns and interests of all parties involved and achieve a fair and equitable outcome.

7. Auctioneer communicates the decision or resolution to the involved parties, providing clear explanations and instructions for any actions or next steps required.

Extensions:

3a. Dispute involves complex issues or conflicting evidence:

- Auctioneer may seek additional assistance from relevant stakeholders, such as legal experts or platform administrators, to help resolve the dispute fairly and effectively.

6a. Parties involved in the dispute are not satisfied with the proposed resolution:

- Auctioneer may facilitate further discussions or negotiations between the parties to reach a mutually agreeable solution or escalate the dispute to higher authorities for further review and resolution.

Special Requirements:

- The dispute resolution process should be conducted impartially and transparently, ensuring that all parties involved have an opportunity to present their case and provide evidence to support their claims.
- Real-time updates and notifications should be provided to involved parties, reflecting the status of dispute resolution proceedings and any decisions or resolutions reached.

Technology and data variation list:

- The system should support the storage and retrieval of dispute-related information and evidence, allowing for thorough review and analysis by the auctioneer.
- Data variation should be supported to accommodate different types of disputes and issues raised by buyers and sellers.

Frequency of use:

Dispute resolution may occur occasionally, depending on the frequency and volume of auction transactions conducted on the platform.

Open Issues:

- How does the system handle scenarios where disputes involve complex legal or regulatory issues beyond the expertise of the auctioneer?
- What measures are in place to prevent abuse or misuse of the dispute resolution process by buyers or sellers for personal gain or advantage?

10.Generate Auction Analysis Report

Use Case ID: UC10
Use Case Name: Generate Auction Analysis Report
Scope: Auction Management System
Level: User Goal
Primary Actor*:* Auctioneer
Stakeholders and Interests: • Auctioneer: Aims to generate comprehensive auction reports for sellers, providing insights and analytics on auction performance, sales, and other relevant metrics to help sellers make informed decisions and improve their auction strategies. • Sellers: Interested in receiving detailed auction reports to assess the performance of their auction listings, track sales trends, and identify areas for improvement or optimization.
Pre-Condition: Auction data and transaction records are available and up-to-date in the online auction management system, and the auctioneer is authenticated and authorized to generate auction reports.
Post-Condition: The auction report is successfully generated and provided to the seller, containing relevant data, insights, and analytics on auction performance and sales metrics.
Main Success Scenario:

User Action	System Response
1. Auctioneer accesses the online auction management system. **3.** Auctioneer selects the option to generate an auction report for a specific seller or auction listing. **5.** Auctioneer configures the report settings and criteria based on the seller's preferences and requirements.	**2.** System displays the auctioneer's dashboard or reporting interface. **4.** System prompts the auctioneer to specify the criteria and parameters for the report, such as date range, auction type, sales metrics, and other relevant filters. **6.** System retrieves the relevant auction data and transaction records from the database and processes the information to generate the auction report. **7.** System presents the generated auction report to the auctioneer, displaying comprehensive data, insights, and analytics on auction performance, sales trends, bidder behavior, and other relevant metrics.

Extensions:	**3a.** System displays an error message and advises the auctioneer to try again later or contact technical support for assistance.
3a. Auctioneer encounters technical issues while generating the auction report: **5a.** Seller requests additional customization or specific data analysis in the auction report: • Auctioneer may adjust the report settings and criteria accordingly to meet the seller's requirements and preferences.	

Special Requirements:

- The auction report generation process should be efficient and scalable, capable of handling large volumes of auction data and generating reports in a timely manner.
- The generated auction reports should be presented in a user-friendly format, with clear visualizations, charts, and graphs to facilitate easy interpretation and analysis by sellers.

Technology and data variation list:

- The system should support the retrieval and processing of diverse auction data and transaction records, including bid history, sales data, bidder information, and other relevant metrics.
- Data variation should be supported to accommodate different types of auction listings, formats, and categories.

Frequency of use:

Auction reports may be generated periodically or on-demand, depending on the frequency of auction listings and the seller's request for performance analytics.

Open Issues:

- How does the system handle scenarios where sellers require custom or ad-hoc reports with specific data analysis or metrics beyond the standard report criteria?
- What measures are in place to ensure the accuracy and reliability of the data presented in the auction reports, especially for complex analytics and insights?

11. Analyze Auction Data

Use Case ID: UC11
Use Case Name: Analyze Auction Data
Scope: Auction Management System
Level: User Goal
Primary Actor: Auctioneer
Stakeholders and Interests: • Auctioneer: Aims to analyse auction data to gain insights into auction performance, bidder behaviour, sales trends, and other relevant metrics, facilitating informed decision-making and optimization of auction strategies. • Sellers: Interested in leveraging auction data analysis to understand their auction performance, identify opportunities for improvement, and maximize sales and revenue.
Pre-Condition: Auction data is available and up-to-date in the online auction management system, and the auctioneer is authenticated and authorized to access and analyse auction data.
Post-Condition: Auction data analysis is successfully conducted, and actionable insights and findings are generated to inform decision-making and optimization strategies.
Main Success Scenario:

User Action	System Response
1. Auctioneer accesses the online auction management system. **3.** Auctioneer selects the option to analyze auction data, specifying the criteria and parameters for the analysis, such as date range, auction type, sales metrics, bidder behavior, and other relevant factors. **5.** Auctioneer interprets the analyzed data, examining key metrics, trends, patterns, and outliers to identify areas of strength, weaknesses, opportunities, and threats in auction performance. **6.** Auctioneer draws conclusions and makes recommendations based on the analysis findings, proposing actionable strategies and optimizations to improve auction outcomes and achieve desired objectives.	**2.** System displays the auctioneer's dashboard or data analysis interface. **4.** System retrieves the relevant auction data from the database and processes the information to conduct data analysis, applying statistical methods, algorithms, and analytics tools to generate insights and findings. **7.** System presents the analyzed data, insights, and recommendations to the auctioneer, providing visualizations, charts, graphs, and reports to facilitate understanding and decision-making.

Extensions:

3a. Auctioneer encounters technical issues while accessing or analyzing auction data:
5a. Analysis reveals unexpected or anomalous results requiring further investigation:

- Auctioneer may delve deeper into the data, conduct additional analysis, or seek input from relevant stakeholders to understand and address the anomalies or discrepancies identified.

- System displays an error message and advises the auctioneer to try again later or contact technical support for assistance.

Special Requirements:

- The auction data analysis process should be robust, scalable, and capable of handling large volumes of data, ensuring accuracy, reliability, and efficiency in generating insights and findings.
- The analysed data and insights should be presented in a clear, understandable, and actionable format, using visualizations, charts, and reports to facilitate decision-making and communication.

Technology and data variation list:

- The system should support the retrieval, processing, and analysis of diverse auction data, including bid history, sales data, bidder behaviour, and other relevant metrics.
- Data variation should be supported to accommodate different types of auctions, formats, categories, and auction-specific variables.

Frequency of use:

Auction data analysis may be conducted periodically or as needed, depending on the auctioneer's requirements, objectives, and the frequency of auction activities.

Open Issues:

- What measures are in place to ensure the accuracy, reliability, and integrity of the analysed data and insights, especially when dealing with complex statistical methods and algorithms?
- How does the system handle scenarios where the analysed data reveals unexpected or anomalous results that require further investigation or validation?

12.<u>Cancel Bid</u>

Use Case ID: UC12	
Use Case Name: Cancel Bid	
Scope: Auction Management System	
Level: User Goal	
Primary Actor*:* Auctioneer or Seller	

Stakeholders and Interests:

- Auctioneer or Seller: Aims to cancel a bid on an auction item for various reasons, such as invalid bids, non-payment, or other exceptional circumstances, to maintain the integrity of the auction process and ensure fairness to all participants.
- Bidders: Interested in understanding the cancellation policy and procedures to ensure transparency and fairness in the auction process and to be informed about bid cancellations affecting their bids.

Pre-Condition: A bid has been placed on an auction item, and the auctioneer or seller is authenticated and authorized to cancel bids on the auction platform.

Post-Condition: The bid is successfully cancelled, and appropriate actions are taken to inform relevant parties, such as the bidder whose bid was cancelled, and to update the auction status and records accordingly.

Main Success Scenario:

User Action	System Response
1. Auctioneer or Seller accesses the online auction management system.	**2.** System displays the auctioneer's or seller's dashboard or bid management interface.
3. Auctioneer or Seller identifies the bid to be canceled and verifies the validity of the bid, ensuring compliance with auction rules, terms, and conditions.	**4.** System prompts the auctioneer or seller to confirm the cancellation of the bid, providing options to specify the reason for cancellation and any additional comments or details.
5. Auctioneer or Seller confirms the bid cancellation, selecting the appropriate reason and providing any necessary comments or explanations.	**6.** System processes the bid cancellation request, updating the auction status and records to reflect the canceled bid and notifying relevant parties, such as the bidder and other stakeholders, about the cancellation.
	7. System generates a confirmation message or notification, informing the auctioneer or seller that the bid cancellation has been successfully processed and recorded.

Extensions:

3a. Bid is found to be invalid or non-compliant with auction rules:

- Auctioneer or Seller proceeds with bid cancellation, following established procedures and policies for handling invalid bids.

4a. Bid cancellation is challenged or disputed by the bidder:

- System notifies relevant stakeholders, such as the auctioneer, seller, and bidder, about the bid cancellation dispute and initiates a resolution process to address the concerns raised by the bidder.

Special Requirements:

- The bid cancellation process should be transparent, with clear policies, procedures, and documentation to ensure fairness and accountability in cancelling bids.
- Bid cancellation requests should be processed promptly and efficiently, with appropriate validation and verification steps to prevent abuse or misuse of the bid cancellation feature.

Technology and data variation list:

- The system should support the retrieval, processing, and updating of auction data and records, including bid information, auction status, and bidder details, to reflect bid cancellations accurately.
- Data variation should be supported to accommodate different types of bids, auction items, and cancellation reasons, ensuring flexibility and adaptability in handling bid cancellations.

Frequency of use:
Bid cancellations may occur occasionally, depending on factors such as bidder behaviour, auction dynamics, and exceptional circumstances warranting bid cancellation.

Open Issues:

- How does the system handle scenarios where bid cancellation requests are disputed or challenged by the bidder, requiring further investigation or resolution to address the concerns raised?
- What measures are in place to prevent abuse or misuse of the bid cancellation feature by auctioneers or sellers, ensuring that bid cancellations are justified and compliant with auction rules and policies?

13.Report Auction

Use Case ID: UC13

Use Case Name: Report Auction

Scope: Auction Management System

Level: User Goal

Primary Actor: Buyer

Stakeholders and Interests:
- Buyer: Aims to report an auction with vulnerabilities or irregularities, such as fraudulent listings, counterfeit items, misleading information, or other violations of auction policies, to protect the interests of other users and maintain the integrity of the auction platform.   - Auctioneer or Seller: Interested in receiving reports of auction vulnerabilities to investigate and address any issues or concerns raised by buyers, ensuring compliance with auction rules and regulations and maintaining trust and credibility in the auction process.

Pre-Condition: Buyer has identified an auction with vulnerabilities or irregularities and is authenticated and authorized to report auctions on the auction platform.

Post-Condition: The auction is successfully reported, and appropriate actions are taken by the auctioneer or seller to investigate, address, and resolve the reported vulnerabilities or irregularities, ensuring the integrity and security of the auction platform.

Main Success Scenario:

User Action	System Response
1. Buyer accesses the online auction management system.	2. System displays the buyer's dashboard or auction listing interface.
3. Buyer identifies an auction with vulnerabilities or irregularities and selects the option to report the auction.	4. System prompts the buyer to provide details and evidence of the reported vulnerabilities or irregularities, such as descriptions, screenshots, or supporting documents.
5. Buyer submits the report, including relevant details and evidence, to the auctioneer or seller for review and investigation.	6. System generates a confirmation message or notification, informing the buyer that the auction has been successfully reported and the report has been forwarded to the auctioneer or seller for further action.
7. Auctioneer or Seller receives the report and initiates an investigation into the reported vulnerabilities or irregularities, taking appropriate actions to address and resolve the issues identified.	

Extensions:	
3a. Buyer encounters technical issues while reporting the auction.	• System displays an error message and advises the buyer to try again later or contact technical support for assistance.
5a. Buyer's report lacks sufficient details or evidence to support the reported vulnerabilities or irregularities.	• System prompts the buyer to provide additional information or evidence to substantiate the report, ensuring thorough and accurate reporting of auction issues.

Special Requirements:

- The auction reporting process should be confidential and anonymous, allowing buyers to report auctions without fear of retaliation or repercussions from sellers or other users.
- Reported vulnerabilities or irregularities should be investigated promptly and thoroughly by the auctioneer or seller, with appropriate actions taken to address and resolve the issues identified.

Technology and data variation list:

- The system should support the submission and processing of auction reports, including details, evidence, and communication between buyers, auctioneers, and sellers, to facilitate the reporting and resolution of auction issues.

Frequency of use:

Auction reports may be submitted occasionally, depending on the occurrence of vulnerabilities or irregularities identified by buyers during their interactions with the auction platform.

Open Issues:

- How does the system ensure the confidentiality and anonymity of buyers reporting auctions, protecting their privacy and security while facilitating the reporting process?
- What measures are in place to prevent abuse or misuse of the auction reporting feature by buyers, ensuring that reports are legitimate and submitted in good faith to address genuine vulnerabilities or irregularities in auctions?

14.**Manage Auction Report**

Use Case ID: UC14	

Use Case Name: Manage Auction Reports

Scope: Auction Management System

Level: User Goal

Primary Actor*:* Auctioneer

Stakeholders and Interests:

- Auctioneer: Aims to manage auction reports submitted by buyers, reviewing and taking appropriate actions to address the reported vulnerabilities or irregularities, ensuring the integrity and security of the auction platform and maintaining trust and credibility with users.
- Buyers: Interested in receiving feedback on their reported auctions and knowing that their concerns are being addressed and resolved by the auctioneer, promoting transparency and accountability in the auction process.

Pre-Condition: Auctioneer is authenticated and authorized to access and manage auction reports on the auction platform, and one or more auction reports have been submitted by buyers for review and action.

Post-Condition: The auctioneer successfully manages the auction reports, taking appropriate actions such as accepting or rejecting the reports, investigating reported issues, and addressing vulnerabilities or irregularities identified in the reported auctions.

Main Success Scenario:

User Action	**System Response**
1. Auctioneer accesses the online auction management system. **3.** Auctioneer reviews the list of auction reports submitted by buyers, including details of reported vulnerabilities or irregularities, evidence provided, and other relevant information. **4.** Auctioneer selects an auction report for review and action, considering the severity, credibility, and impact of the reported issues on the auction platform and its users. **5.** Auctioneer investigates the reported vulnerabilities or irregularities, verifying the accuracy and validity of the reported issues and assessing the need for further action or intervention.	**2.** System displays the auctioneer's dashboard or auction report management interface. **7.** System records the auctioneer's decision and updates the status of the auction report accordingly, informing relevant parties, such as the buyer who submitted the report, about the outcome of the review and action taken.

6. Auctioneer decides on the appropriate action to take in response to the auction report, such as accepting the report, rejecting the report, or initiating additional steps to address the reported issues effectively.	

Extensions:

3a. Auctioneer encounters technical issues while accessing or reviewing auction reports:

5a. Auctioneer requires additional information or evidence to verify the reported vulnerabilities or irregularities:

- Auctioneer may request additional details or evidence from the buyer who submitted the report, ensuring thorough and accurate review and investigation of the reported issues.

- System displays an error message and advises the auctioneer to try again later or contact technical support for assistance.

Special Requirements:

- The auction report management process should be transparent, with clear policies, procedures, and documentation to guide auctioneers in reviewing, investigating, and addressing reported vulnerabilities or irregularities effectively.
- Auctioneer's decisions on auction reports should be fair, impartial, and based on objective criteria, considering the credibility of the reported issues, the evidence provided, and the potential impact on the auction platform and its users.

Technology and data variation list:

- The system should support the retrieval, processing, and updating of auction reports and related information, including details of reported vulnerabilities or irregularities, evidence provided by buyers, and actions taken by auctioneers, to ensure transparency and accountability in managing auction reports.

Frequency of use:

Auction reports may be managed periodically or as needed, depending on the frequency of reported issues and the volume of auction activities on the platform.

Open Issues:

- How does the system ensure consistency and fairness in the auctioneer's decisions on auction reports, minimizing bias or subjectivity in the review and action-taking process?

- What measures are in place to prevent conflicts of interest or potential abuse of authority by auctioneers when managing auction reports, ensuring impartiality and integrity in the decision-making process?

15.<u>Manage Auction Reminders</u>

Use Case ID: UC15
Use Case Name: Manage Auction Reminders
Scope: Auction Management System
Level: Sub-Goal
Primary Actor*:* Auctioneer
Stakeholders and Interests: • Auctioneer: Aims to set reminders for upcoming auctions, ensuring timely and effective management of auction events and maximizing participation and engagement from potential buyers. • Bidders: Interested in receiving reminders for auctions they are interested in participating in, helping them stay informed about upcoming auction events and plan their bidding activities accordingly.
Pre-Condition: Auctioneer is authenticated and authorized to access the auction reminder management functionality, and there are upcoming auctions scheduled on the auction platform for which reminders need to be set.
Post-Condition: Auctioneer successfully sets reminders for upcoming auctions, and relevant stakeholders, such as bidders, receive timely notifications about the scheduled auction events.
Main Success Scenario:

User Action	System Response
1. Auctioneer accesses the online auction management system. **3.** Auctioneer navigates to the auction reminder management section or feature. **4.** Auctioneer selects the upcoming auction(s) for which reminders need to be set, specifying the date, time, and frequency of reminders. **6.** Auctioneer reviews the scheduled reminders and verifies that they are accurately configured and aligned with the auction events' schedules.	**2.** System displays the auctioneer's dashboard or auction management interface. **5.** System confirms the settings for the auction reminders and schedules the reminders accordingly, ensuring they are sent to the specified recipients (e.g., bidders) at the designated times. **7.** System generates a confirmation message or notification, informing the auctioneer that the reminders have been successfully scheduled and will be sent to the designated recipients as planned.

Extensions:	
4a. Auctioneer encounters technical issues while setting auction reminders	System displays an error message and advises the auctioneer to try again later or contact technical support for assistance.
5a. Auctioneer needs to modify or cancel scheduled reminders: • Auctioneer can edit or delete scheduled reminders as needed, adjusting the settings or removing reminders for specific auctions or dates.	

Special Requirements:

- The auction reminder management process should support the scheduling of reminders for multiple auctions simultaneously, allowing auctioneers to efficiently manage reminders for various auction events.
- Reminders should be sent to bidders or other designated recipients via preferred communication channels (e.g., email, SMS) in a timely and reliable manner, ensuring that recipients receive notifications promptly before the scheduled auction events.

Technology and data variation list:

- The system should support the creation, scheduling, and delivery of auction reminders, including the management of reminder settings, recipient lists, and communication channels, to facilitate efficient and effective reminder management.

Frequency of use:
Auction reminders may be scheduled periodically or as needed, depending on the frequency of auction events and the preferences of auctioneers and bidders for receiving reminders.

Open Issues:

- How does the system ensure the accuracy and reliability of auction reminders, minimizing the risk of missed reminders or delivery failures due to technical issues or communication errors?
- What measures are in place to handle scenarios where auctioneer needs to modify or cancel scheduled reminders, ensuring flexibility and responsiveness in managing reminder settings based on changing auction schedules or requirements?