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| Class Name: User | ID: | Type: Entity |
| Description: Represents a registered user of the auction website. | Associated UC: Login/Sign up, Listing, Bidding, Searching | |
| Responsibilities | Collaborators | |

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|-----------------------|--------|
| Maintain user details | Buyer |
| | Seller |

| | |
|-----------------------|-------------------|
| Attributes | |
| UserID | |
| Email | |
| Password | |
| | |
| Relationships | |
| Generalization (is-a) | Buyer and Seller |
| Aggregation (has-a) | AuctionItem, bids |
| Dependency | |

| | | |
|--|--|---------------------------------|
| Class Name: Buyer | ID: | Type: Concrete/subclass of user |
| Description: Represents a user who can bid on auction items. | Associated UC: Bid on Item, Make payment | |
| Responsibilities | Collaborators | |
| Place bids | AuctionItem | |
| Make payments | Bid | |
| | Payment | |
| | | |

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|-----------------------|---------------------------|
| Attributes | |
| Inherits from User | |
| UserID | Payments |
| PlaceBids | |
| | |
| | |
| | |
| Relationships | |
| Generalization (is-a) | User |
| Aggregation (has-a) | Bid |
| Dependency | AuctionItem, Bid, Payment |

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|--|--------------------------|---------------------------------|
| Class Name: Seller | ID: | Type: Concrete/subclass of User |
| Description: Represents a user who can list items for auction. | Associated UC: List Item | |
| Responsibilities | Collaborators | |
| List items | AuctionItem | |
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|-----------------------|-------------|
| Attributes | |
| Inherits from User | |
| UserID | |
| ListedItems | |
| | |
| Relationships | |
| Generalization (is-a) | User |
| Aggregation (has-a) | AuctionItem |
| Dependency | N/A |

| | | |
|--|---------------------------------------|--------------|
| Class Name: AuctionItem | ID: | Type: Entity |
| Description: Represents an item listed for auction on the website. | Associated UC: List Item, Bid on Item | |
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| Responsibilities | Collaborators | |
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| Maintain item details | Seller | |
| Track highest bid | Buyer | |
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|-----------------------|------------|
| Attributes | |
| | |
| ItemID | EndTime |
| Description | HighestBid |
| StartPrice | SellerID |
| | |
| Relationships | |
| Generalization (is-a) | N/A |
| Aggregation (has-a) | Seller |
| Dependency | Bid |

| | | |
|--|----------------------------|----------------|
| Class Name: Bid | ID: | Type: Concrete |
| Description: Represents a bid placed by a user on an auction item. | Associated UC: Bid an Item | |
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| Responsibilities | Collaborators | |
| | | |
| Maintain bid details | Buyer | |
| Link to user and auction item | AuctionItem | |
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|-----------------------|-----------------------|
| Attributes | |
| | |
| BidID | UserID |
| Amount | ItemID |
| Time | |
| | |
| Relationships | |
| Generalization (is-a) | N/A |
| Aggregation (has-a) | User |
| Dependency | Buyer and AuctionItem |

| | | |
|--|----------------------------|---------------|
| Class Name: Search | ID: | Type: Control |
| Description: Allows users to search for auction items. | Associated UC: Search Item | |
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| Responsibilities | Collaborators | |
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| Perform search | User | |
| Return search results | AuctionItem | |
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| | | |

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|-----------------------|----------------------|
| Attributes | |
| | |
| SearchID | Results sorted |
| UserID | |
| Query | |
| | |
| Relationships | |
| Generalization (is-a) | N/A |
| Aggregation (has-a) | N/A |
| Dependency | User and AuctionItem |

| | | |
|---|----------------------------|----------------|
| Class Name: Payment | ID: | Type: Concrete |
| Description: Handles the payment process when a user wins an auction. | Associated UC: Bid an item | |
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| Responsibilities | Collaborators | |
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| Process payment | Buyer | |
| Update auction item status | AuctionItem | |
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|-----------------------|-----------------------|
| Attributes | |
| | |
| PaymentID | UserID |
| Amount | ItemID |
| Time | PaymentStatus |
| | |
| Relationships | |
| Generalization (is-a) | N/A |
| Aggregation (has-a) | N/A |
| Dependency | Buyer and AuctionItem |