Group Members:
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Project 4

Distributed Auction System Design

Server (Bank)

Socket   Socket

Client 1
(Auction
House 1)

Server to
Agents
(AH1)

Socket

Client 2
(Auction
House 2)

Server to
Agents
(AH2)

Socket

Client 3
(Agent 1)

Socket

Client 4
(Agent 2)
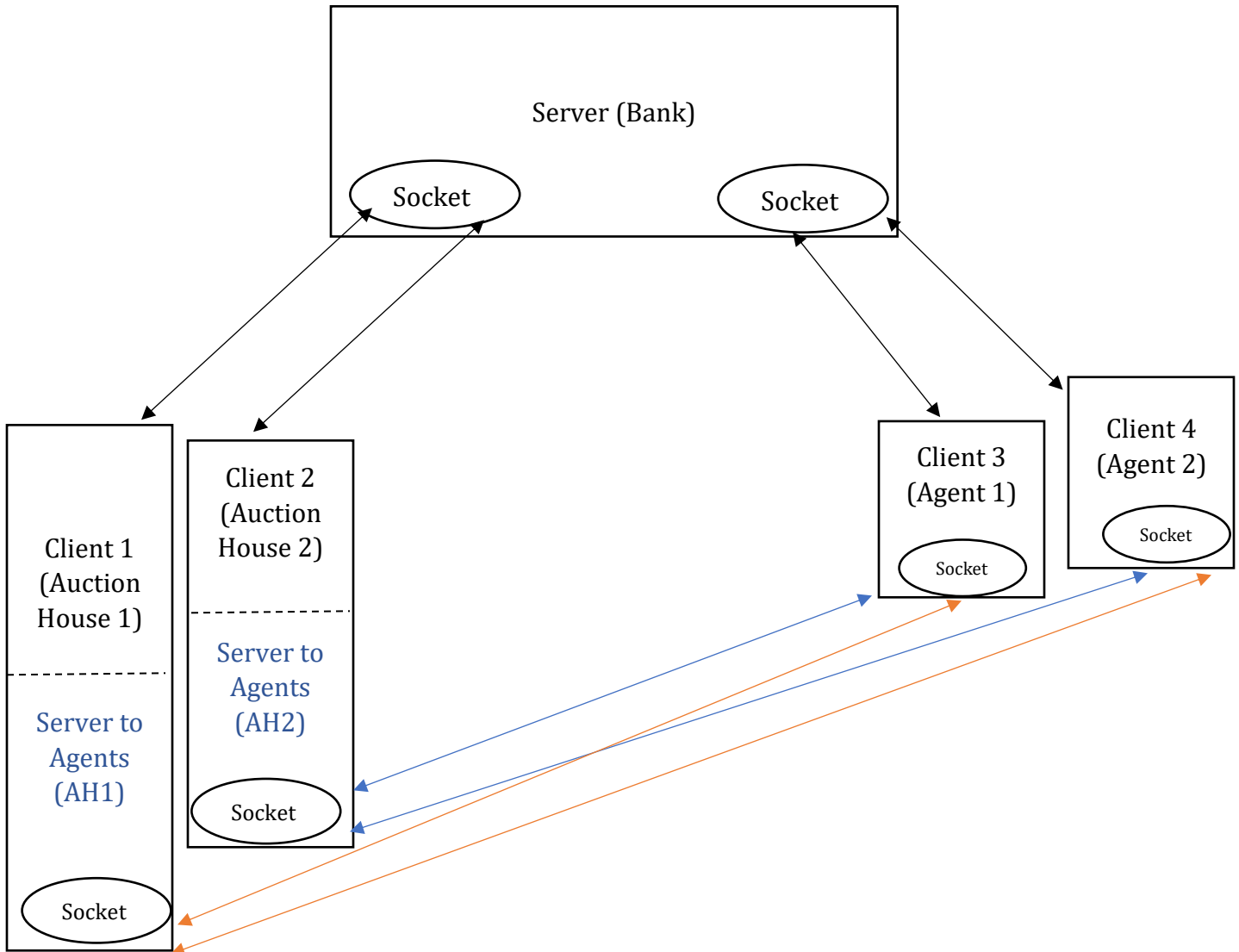
Socket

Bank is the only static known address. Bank communicates or send/receive data through sockets using I/O streams. To create a server/bank socket, we need to attach it to a port, which is where the server listens for connections from clients (auction house, agents). We start this program before client programs.

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Bank to Agent Relationship:

- Agent opens bank account with their name and starting balance, they receive unique account number.
- They receive list of active auction house registered in the bank. Connects to auction house using their host and port info sent by bank.
- Agent can check their balance and terminate their account at their will.

Bank to Auction House Relationship:

- Connects to Bank/Server using their host and port info.
- Opens account with starting balance with 0, can check account balance.
- Transmission of message regarding bidding (block/unblock agent fund, sold/unsold messages, etc).
- Bank will terminate Auction House if auction house terminates account.

Auction House to Agent Relationship:

- Agent can dynamically connect to any registered auction houses. Agent connects to respective auction houses using their port and host info.
- Auction House hosts items being auctioned and tracks the current bidding status. Agents can access the list of items once the relationship has been established.
- Auction house can reject or accept the bid. Agent's bidding can be accepted, overtaken, or rejected. Actions will be taken accordingly.
- 30 seconds timer setup for bidding items.