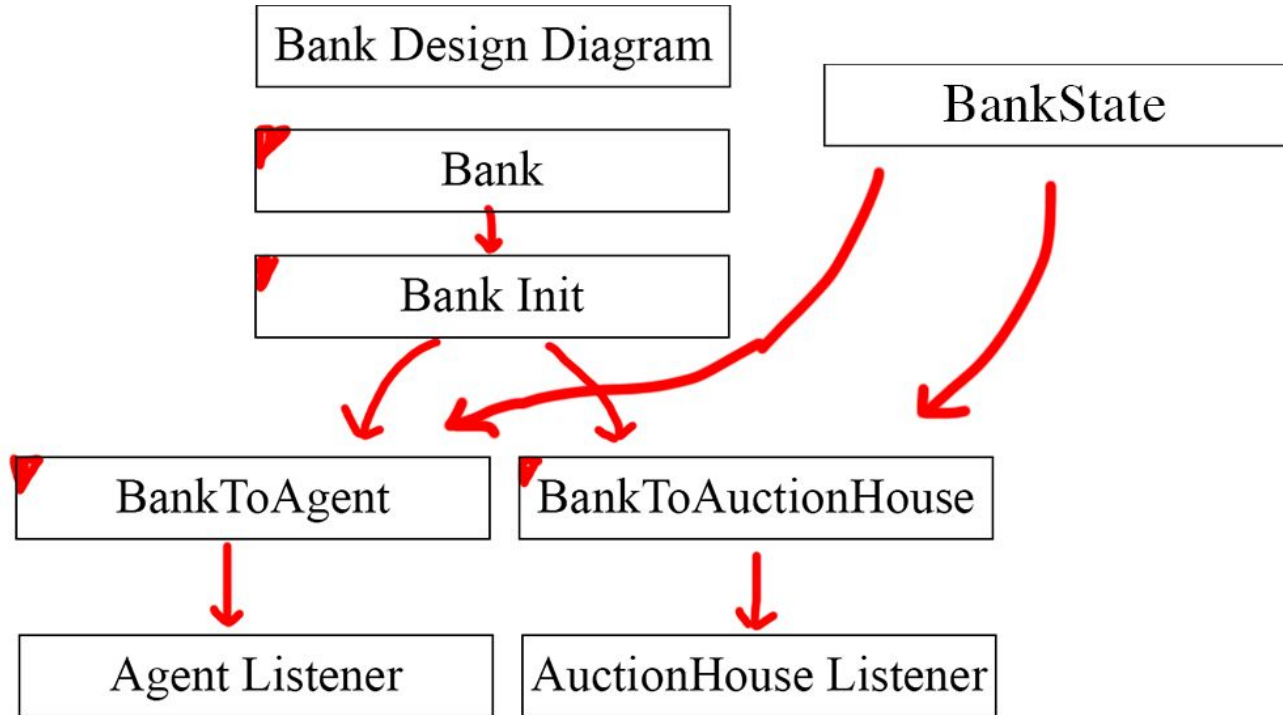# Bank Design Diagram

Bank Details

Bank - main loop that listens for a connection creates a BankInit thread with new object I/O streams
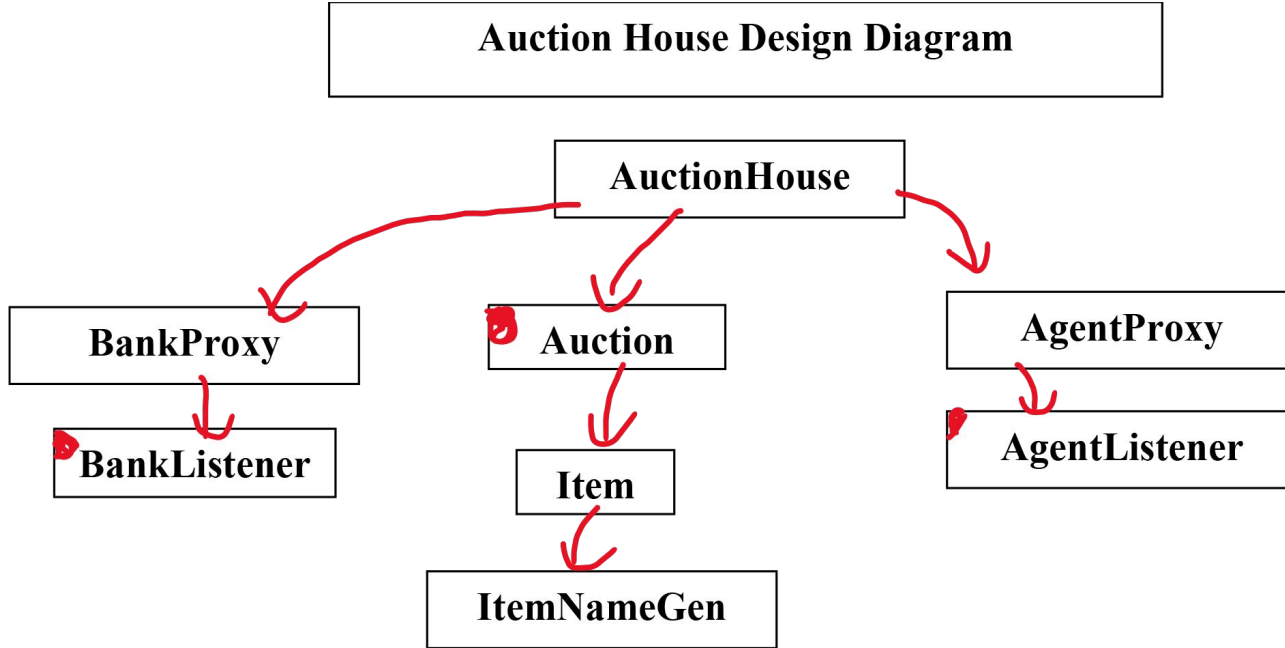
BankState - Singleton object that keeps track of threads and inter thread communication

BankInit - Determines if the first message is coming from a Agent, or an Auction House. Will create the appropriate thread, pass in the I/O streams, then terminate.

BankToAgent - Handles a single Bank to Agent connection. This listens for new message commands being sent in and handles them accordingly.

BankToAuctionHouse - Handles a single Bank to Auction House connection. This listens for new message commands being sent in and handles them accordingly.

Auction House Design

Auction House Design Diagram

AuctionHouse

BankProxy

Auction

AgentProxy

BankListener

Item

AgentListener

ItemNameGen

Auction House Details

AuctionHouse – Server listening that first connects to the bank and then listens for connection requests from agents, passing them along to the AgentProxy and handling the agents closing a connection.

BankProxy – Encapsulates the communication between the auction house and the bank, responsible for things like blocking funds for an agent when they make a bid.

BankListener – Active object that listens to messages from the bank and deals with them accordingly.

Auction – Object that represents an auction that agents can bid on. Keeps track of information about the auction and has a countdown to alert the winner of the auction.

Item – Item that is sold in an auction, has information such a description and price. ItemNameGen – Generates random descriptions for the items being sold.

AgentProxy – Encapsulates the communication between the agent and the auction house, handles and process requests to bid and disconnection checks.

AgentListener – Active object that listens for messages being sent from the agents and deals with them accordingly.

Agent Design
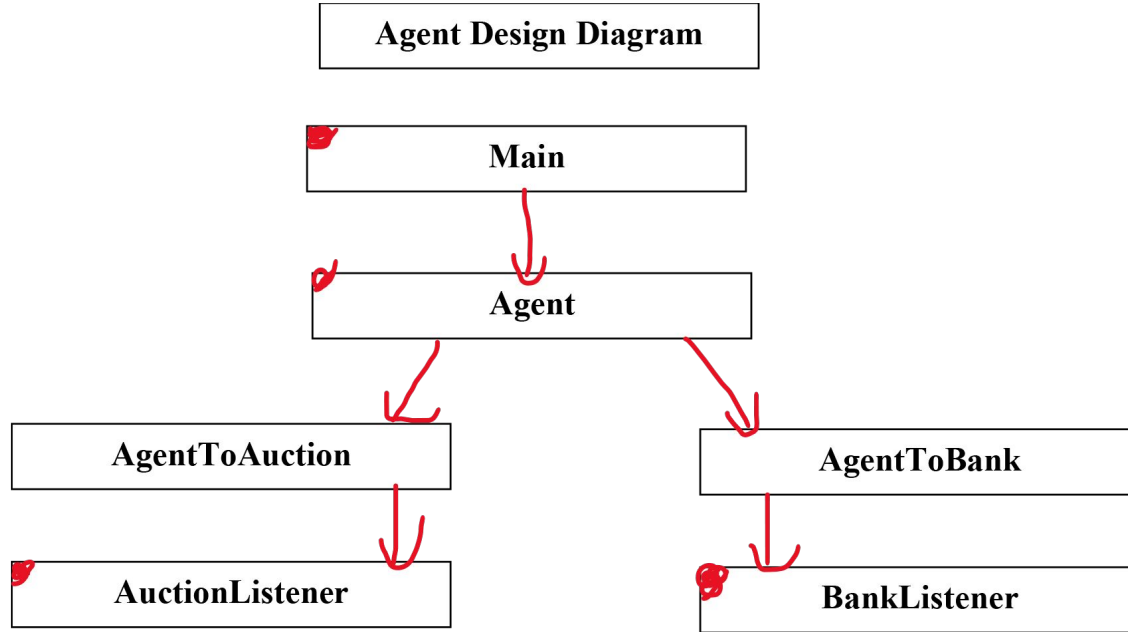
Agent Details

Main – Initializes all the GUI display elements and the components responsible for the network connection. Pulls information from AgentToAuction and AgentToBank whenever it needs to update some element on the screen.

Agent – Handles connecting to the auction houses and the banks and communicates with the main GUI display with information about how it should be updated.

AgentToAuction – Encapsulates the communication between an agent and an auction house. Handles disconnections and updates from the auction house.

AuctionListener – Active object listening for messages from the auction house.

AgentToBank – Encapsulates the communication between the bank and the auction house. BankListener – Active object listening for messages from the bank.