

**Barnet Obeka**

**C19513256**

**Distributed Systems**

**Assignment**

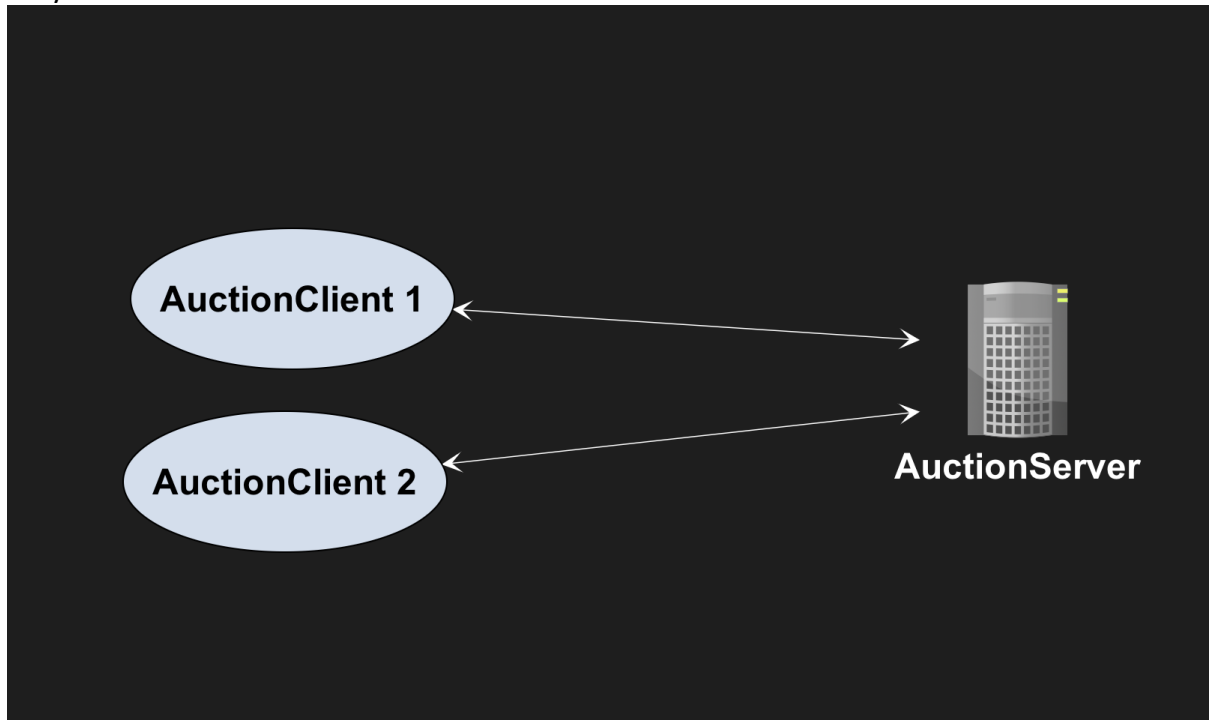
**24<sup>th</sup>/November 2022**

## Declaration

I declare that this work, which is submitted as part of the coursework, is entirely my own, except where clearly and explicitly stated.

## System Architecture

The system has an auction server and auction clients can connect and join the auction as they wish.



## System Setup

- AuctionServer – Creates the server instance.
- ClientThread – This sends and receives the communication between clients and the auction server.
  - Producer – Produces the next Item to be auctioned.
  - AuctionItem – These are the items being auctioned.
- AuctionClient – Creates the client side and helps in the receiving and sending of data to the server

## Running the Auction Server

- Starting the Auction Server:
  - Open the terminal and navigate to the project folder.
  - Type the command “source server.sh” in the terminal then press enter
  - The server instance will start running as shown below;

```
BarnetObeka — java -classpath . AuctionServer 1234 — 118x35
(base) yoshihart@Barnets-MacBook-Pro BarnetObeka % source server.sh
Enter new Item for Auction:
Auction New Item: Infinite Games Book at 29.23
Auction New Item: Gheigas Kahn Potrait at 25.65

New Client has connected.

New Client has connected.
Auction New Item: Ticket_Master Resale at 101.87
```

## Running Auction client

- Starting the client instances
  - Open the terminal and navigate to the project folder.
  - Type the command “source client.sh” in the terminal then press enter
  - Enter the client username and the new client will be created.

Below shows a client plus shows a new client James has joined

```
BarnetObeka — java -classpath . AuctionClient localhost 1234 — 140x22
===== Auction Items =====
Item: 1 Infinite Games Book at 29.23
Item: 2 Gheigas Kahn Potrait at 25.65
Item: 3 Ticket_Master Resale at 101.87
Item: 4 W.B Yeats Manuscripts at 100.21
Item: 5 Monalisa at 112.32
Item: 6 CaesarPotrait at 178.5

The current item on bid is Gheigas Kahn Potrait at 25.65

=====Menu=====
Enter 0 to list items on Auction
Enter 1 to show current item on Auction
Enter 2 to bid on current item
Enter 3 leave the Auction
Enter 4 for your competition
=====

Welcome james for joining the Auction.
You have 45 seconds to make your bid.
```

## Operating the Client

- After joining the auction the client receives the menu
  - Enter 0 to list items on the Auction
    - Lists the Items to be auctioned
  - Enter 1 to show the current item on the Auction
    - Show the current Item being auctioned
  - Enter 2 to bid on the current item
    - Make a bid on the current Item
  - Enter 3 leave the Auction
    - Leave the auction
  - Enter 4 for your competition
    - Show the other clients

## Operating the server

- On the server running there are 2 inputs one for the new item being added for auction and the price expected.