(G3) SRA for Auction Site

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Function Point Analysis

The Unadjusted Function Point (UFP) is calculated as follows:

$\text{UFP} = \sum_{i=1}^{5} \sum_{j=1}^{3} w_{ij} c_{ij}$
w_{ij}: Weight for a type of function
c_{ij}: Number of function of that type

The matrix given below contains weights used for FPA.

Component Type	Low	Avg	High
External Input (EI)	3	4	6
External Output (EO)	4	5	7
Logical Internal File (LIF)	7	10	15
External Interface File (EIF)	5	7	10
External Inquiry (EQ)	3	4	6

Table below gives the description of each component and its type, complexity and weight. The complexity was determined by the File Type Referenced (FTR) and number of Data Elements (DET).

Component	Description	Type	Complexity	Weight
Sign Up	Set name, username, password, contacts, interests	EI	Avg	4
Verify Account	Authenticate registration or password reset	EQ	Avg	4
Log In	Direct user to dashboard given correct credentials	EQ	Low	3
Edit Profile	Allows user to edit details of profile	EI	Avg	4
Forgot Password	Allows user to reset password through contacts	EI	Low	3
Create Auction	List items + clauses and schedule auction time	EI	High	6
Recommendations	Provides user with auctions user might be interested in	EO	High	7
Search Options	Allows user to search by tags, description, time, price	EQ	High	6
View History	Allows user to view completed and scheduled auctions	EO	High	7
View Other Profile	Allows user to view profiles of other users	EQ	Avg	4
Add Auction Items	Allows auctioneer to add items for auction	EI	High	6
Enter Auction	Allows user to join auction room	EO	High	7
Make Bid	Allows bidder to specify a price	EQ	Avg	4
Complete Auction	Server selects and notifies the winner	EO	Avg	5

Component	Description	Type	Complexity	Weight
Exit Auction	Allows user to exit auction room	EI	Low	3
Users File	Contains user login details	LIF	Low	5
Profile File	Contains user profile and interests	LIF	Avg	10
Auction Data File	Contains auction data and settings	LIF	High	15
Auction Items File	Contains description for auction items	LIF	Avg	10

UPF = 113

The Complexity Adjustment Factor (CAF) is calculated as follows:
CAF = $0.65 + 0.01 * \sum_{i=1}^{14} f_i$

Index	Property	Score
1	Reliable backup/recovery	4
2	Data communication	5
3	Distributed processing	1
4	Performance critical	2
5	Existing operational environment	1
6	Online data entry	5
7	Input over multiple screens	3
8	Master files updated online	4
9	Complexity of data	2
10	Complexity of processing	2
11	Reusability	2
12	Installation included	3
13	Multiple installation targets	2
14	Ease of use, change	3

CAF = 0.65 + 0.01 * 39
CAF = 1.04

The Adjusted Function Points (FP) are calculated below:
FP = UFP * CAF
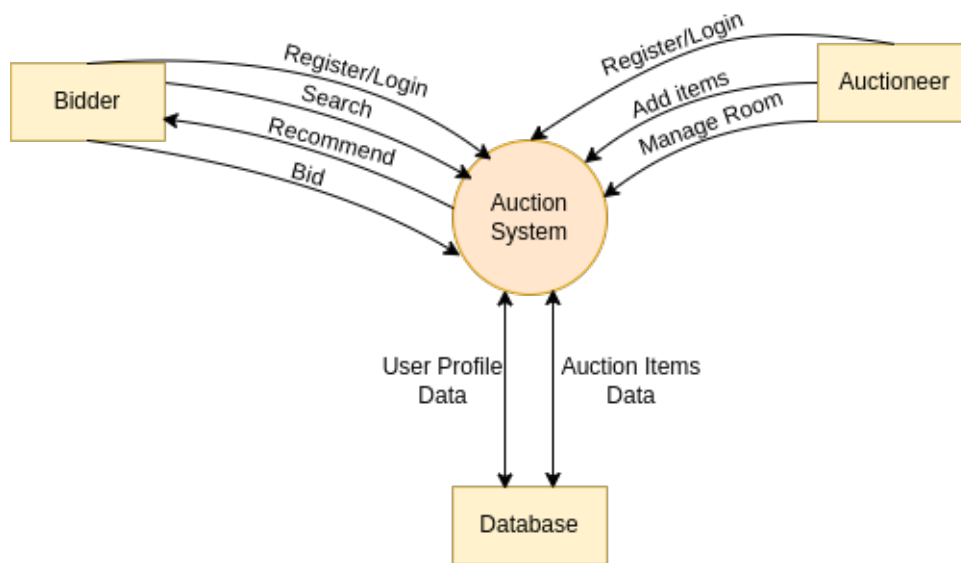FP = 113 * 1.04
FP = 117.52

Lines of Code (LOC) are estimated as: LOC = 117.52*120 = 14102.4

Context Diagram

A high level overview of the system is shown:

Data Flow Diagram 1

Data Flow Diagram 2

Selecting Data Flow Diagram

Data Flow Diagram 2 was selected becuase it provides: - Separate tables for storing auction data and item data - Specialized functions for bidder and auctioneer - Dynamic updation of interests based when joining rooms. - More detailed inputs (eg: make bid takes highest bid from auction database) - More detailed outputs (eg: updating history after entering auction room)
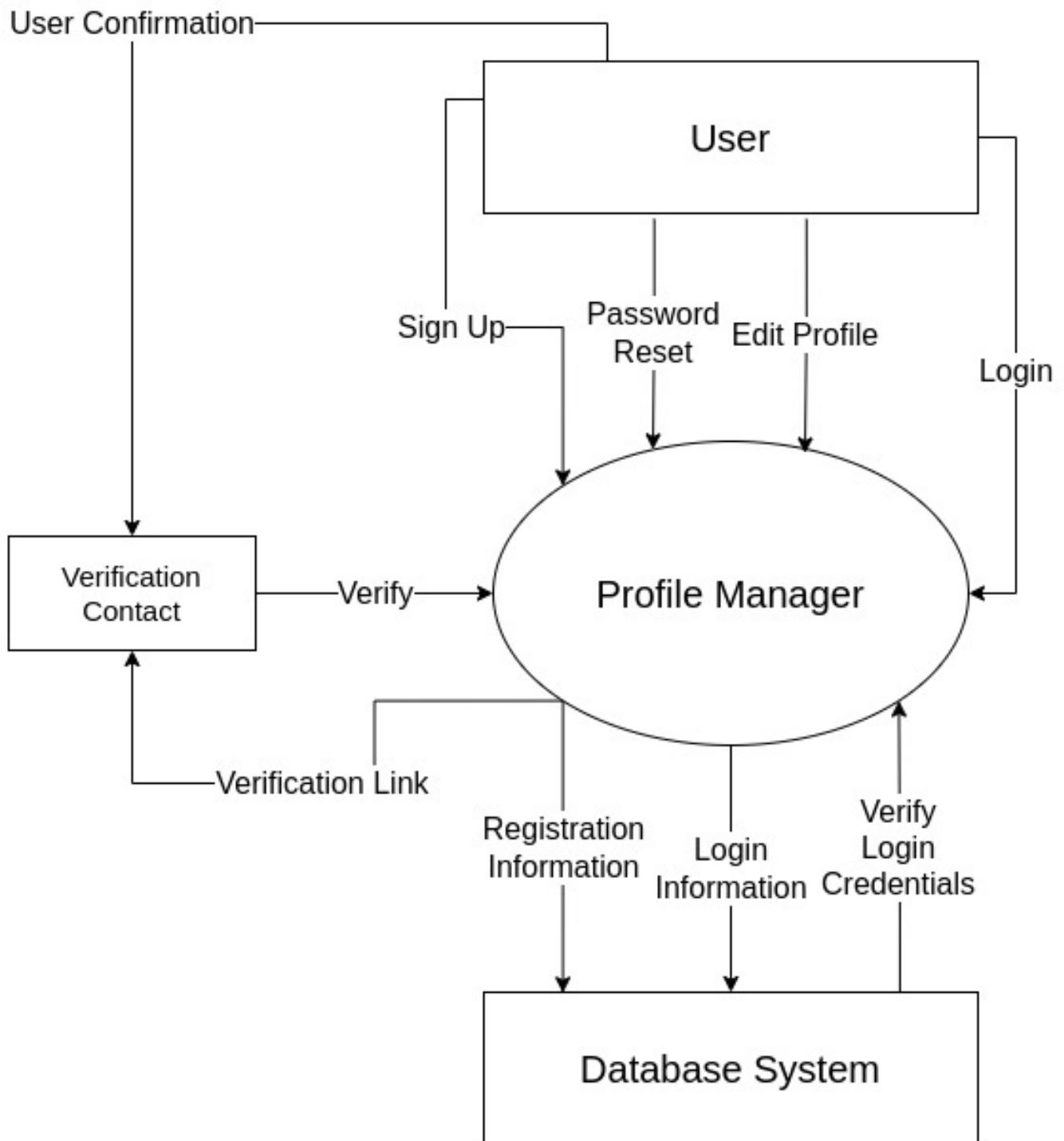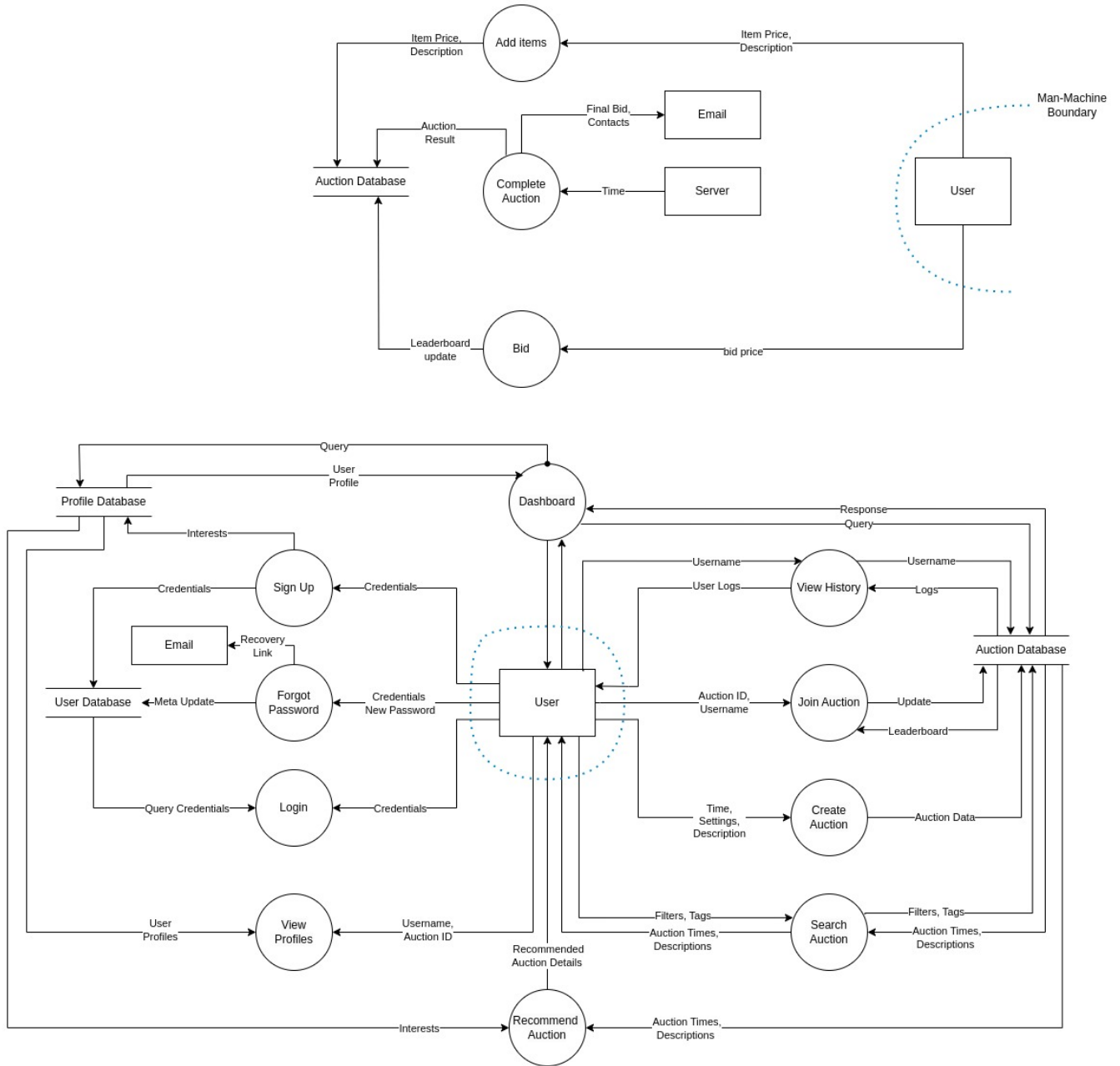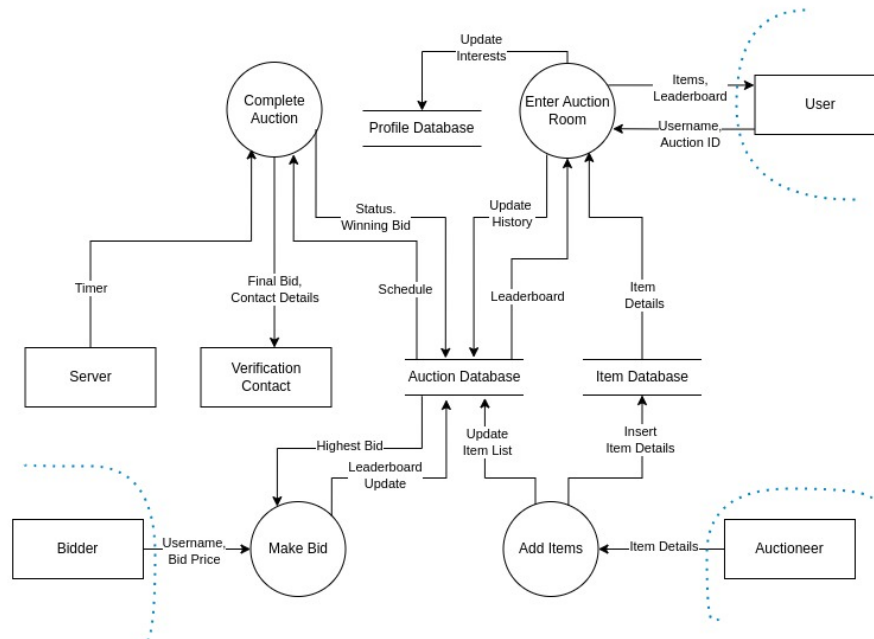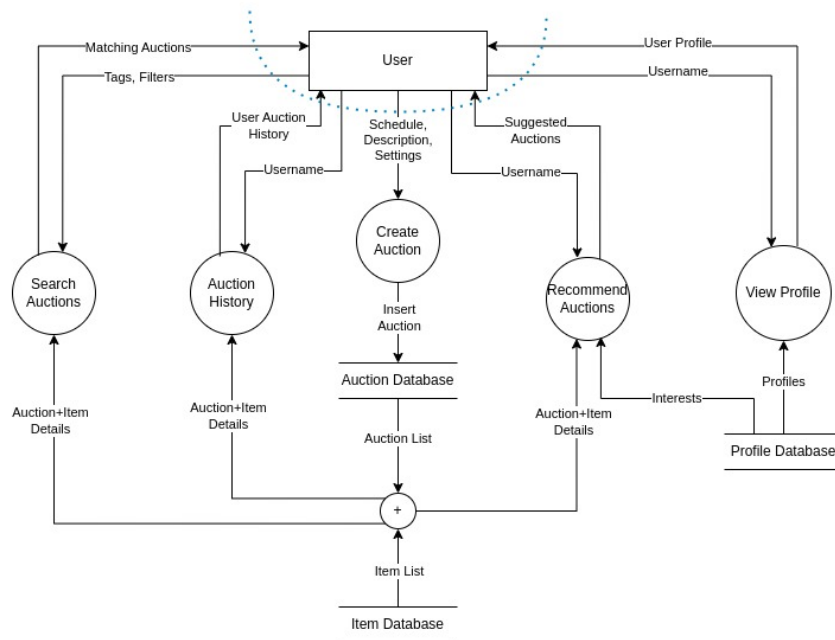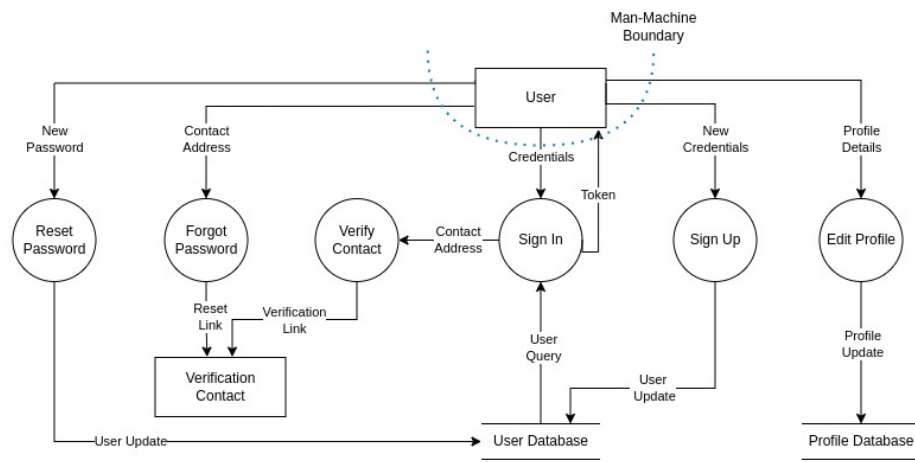
Figure 1: Profile
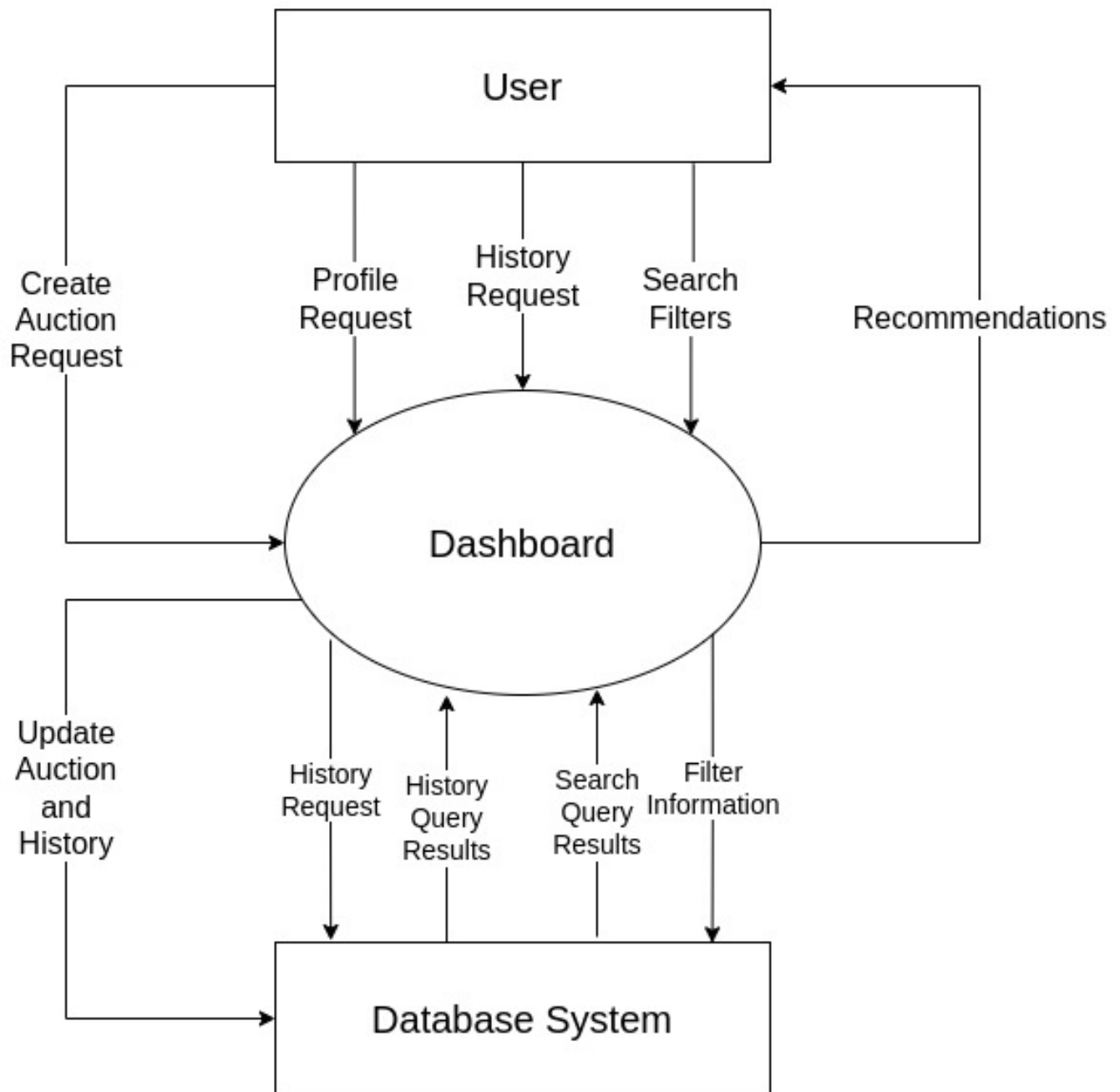
Figure 2: Dashboard
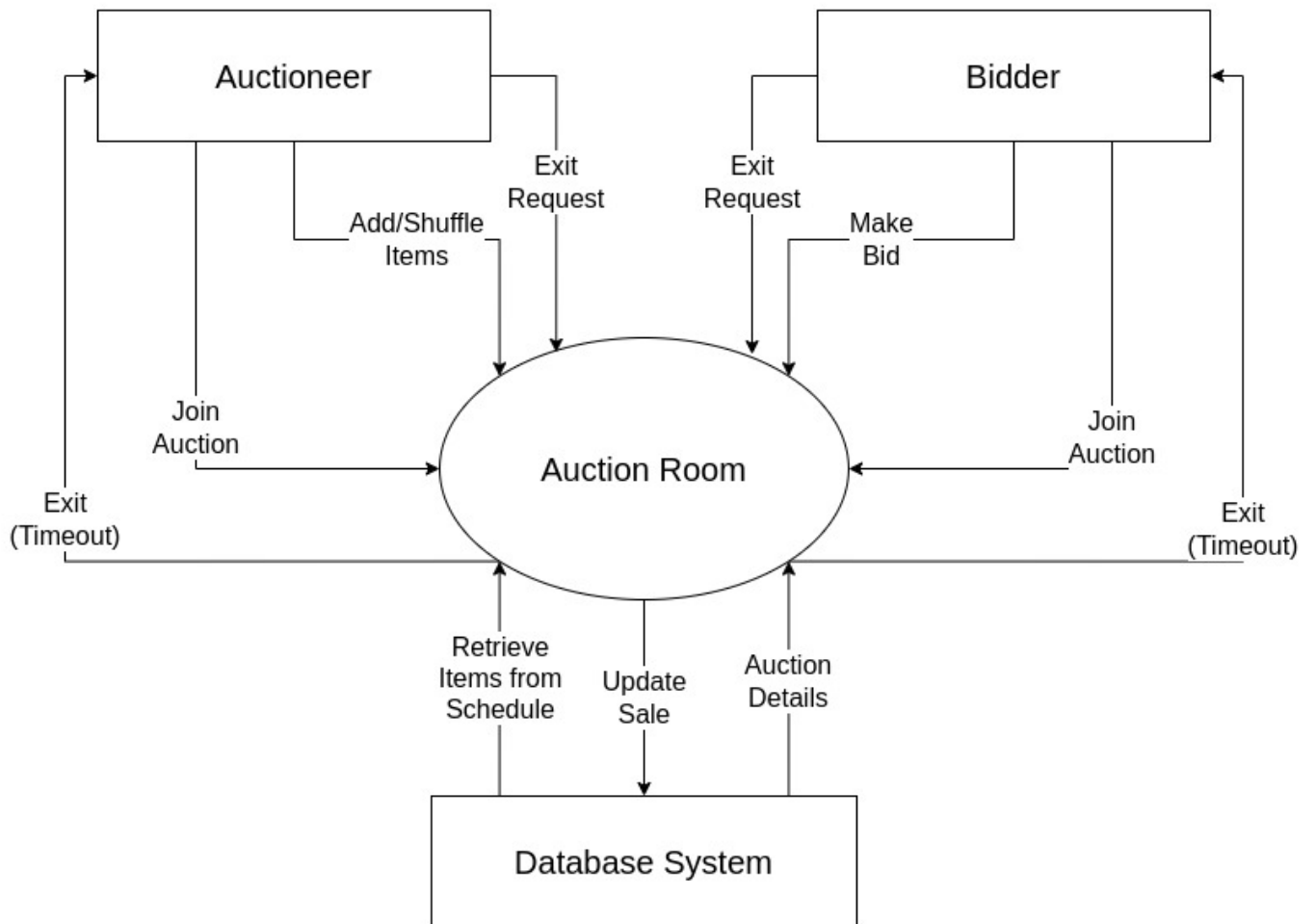
Figure 3: Auction Room

Figure 4: Data Flow Diagram

Figure 5: Data Flow Diagram