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## How to make online auction system?

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### ABSTRACT

Online auction which is also referred as electronic auction, is a form of auction happening over internet online. Similar to real auction people here bid for the price and the highest bid gets the offering. With evolution in technological advancement, it's now possible for every naive user to get his/her hands over online auction. Popular Auction websites like eBay<sup>1</sup>, Copart<sup>2</sup> has made possible to make users trust about this emerging system as a whole. Now even a beginner can make website similar to online auction by keeping in mind it's core users and their requirements and demands. From front-end to back-end and mobile friendly websites makes a great fit for today's modern day auction system.

### I. INTRODUCTION

Online auctions have fundamentally engendered a massive worldwide marketplace where people like you and me can purchase, sell, share, and inspect the day's merchandise. They're hugely prosperous, high-traffic engaging where we can commence selling and buying virtually right away anywhere and anytime around the world irrespective of seller or buyer location. They are transforming how we used to conduct the business online.

A general online auction site should be scalable system that may scale up or down in terms of performance, resources, and functionalities to meet the needs of its user's traffic. We're talking about a highly adaptable infrastructure that can be customised to each person's needs and can quickly react to unique requirements. High scalability and fast real time updating of bids enables the system's overall performance to be optimised and cost savings for the users to be realised.

One of the main and most prominent feature of online auction site is that the seller could set time limit as well as the starting bid according to

themselves. In auction world, we call English auction which are more prevalent over many websites. It is ascending price auction, where the maximum bids get the item, announced as the winner.

### II. WHAT ARE THE COMPONENTS OF ONLINE AUCTION SYSTEM

As already told, that English auction is the most prevalent in the online world [1]. So, while making our online auction website we must keep this in mind and then begin for making the project. Thus, whenever the bid for the selling item is made should be updated instantly over site live to all the opened webpage, database etc.

There are seven categories which are essential for online auction system:

1. Set price – which means it's the minimum price which the auctioneer demands for his/her selling item.

<sup>1</sup> <https://www.ebay.com>

<sup>2</sup> <https://www.copart.com>

2. Starting price – which means it's the price from where the online bidding should start.
3. Minimum increment for highest bidding price – which means that the bidding should be only acceptable if it surpasses the amount set by auctioneer to outbid the current highest bid over online portal [2].
4. New user – the website should be able to register new user if they are new to website or they do not have an existing account.
5. Registered user – The website for online auction portal should be able allow login to user if user already have an account.
6. Special case – in some situation bidders should also have access to cancel bid, or they should be able to bid for different selling item over online auction website.
7. Server handling traffic – Big corporation also keep in note to handle traffic surge under certain sort of sale of item. For example – if there is going to be bidding for a very popular rare artifact, that is very precious in its own kind. It sure that this bidding would attract lot of potential customers to the website, who will watch and might make their own potential bid for the auctioned product or item.

One of the most important things for any auction website is to keep user's data confidential and safe. For reference, During the auction or bidding process all the bidding user details should be confidential, irrespective how big the bid is. Only bidding price should be visible publicly.

In Database, there could be a time or instance when request made by auctioneer to get information about all the bid prices for the respective selling auction item, bidding price should be presented somewhat like in this precedence way with the time of bid was made.

Here is an example of it:

Bid-No.	Name	Bid	Time
1	Marcos	₹1200	06:23:02
2	Peter	₹1350	06:23:56
3	James	₹1400	08:11:12
4	Drake	₹1500	08:56:01
5	Louis	₹2000	09:31:23

Table 1 Tabular representation of SQL database depicting respective bids made overtime by the person who are interested in buying the auctioned item.

### III. OTHER PARTY COMPONENTS IMPORTANT FOR AUCTION WEBSITE

#### A. Payment Gateway

Users should be given choice to make purchase of auctioned item with debit and credit card. Website owner or website organization could also have third party tie-up for payment processing. There is various payment processing platform like Rupay<sup>3</sup>, Visa<sup>4</sup>, Mastercard<sup>5</sup>, American Express<sup>6</sup> which provides direct transfer of funds from buyer to seller's bank account. Once the payment and all the necessary condition agreed by the user, then only transfer of auction product/item should take place.

#### B. Terms and Conditions

Website Portal should have their mandatory terms and condition checkbox before the checkout of auctioned item. Website owner should not be responsible for any kind of misjudgment or mismatch of the deal of sold item. There should be respective clause and statements, which should state clearly that Owner of online auction website are not gullible for any kind of fraud and cases are respective to particular jurisdiction only.

#### C. Https Certification

Online auction website which we'll make or have should definitely possess https<sup>7</sup>/ssl<sup>8</sup> and other necessary certification from government for selling and buying of item over online. These certificates contribute users trust for website and clears their mind for any kind of doubt about legal or trust.

<sup>3</sup> <https://www.rupay.co.in/>

<sup>4</sup> <https://www.visa.co.in/>

<sup>5</sup> <https://www.mastercard.co.in/en-in.html>

<sup>6</sup> <https://www.americanexpress.com/en-in/>

<sup>7</sup> Https: Hypertext Transfer Protocol Secure

<sup>8</sup> SSL: Secure Sockets Layer

IV. CONSTITUENTS OF WEBSITE

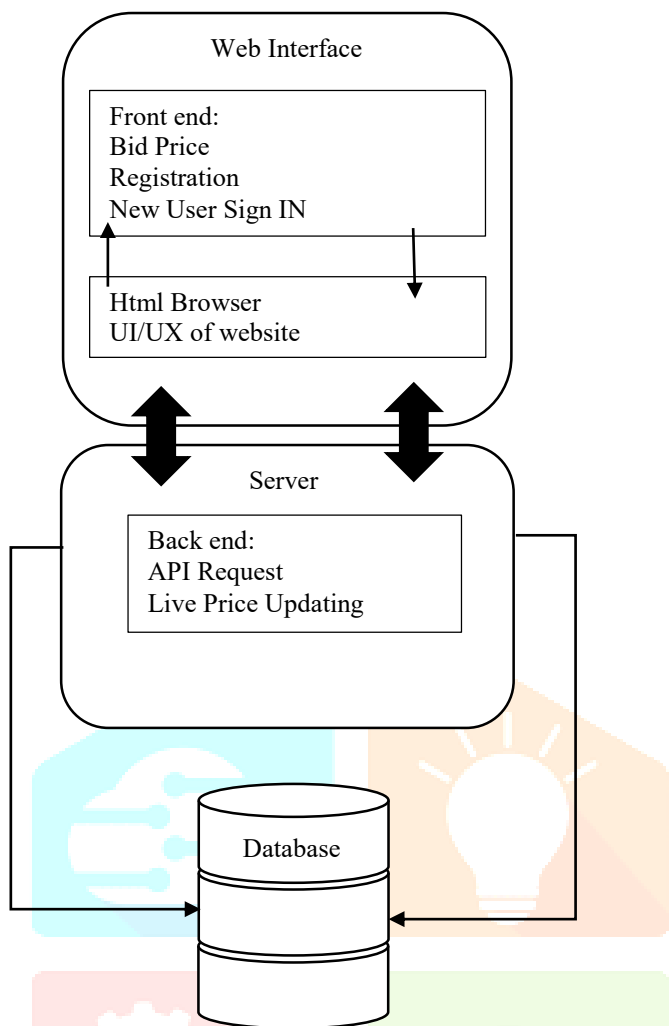


Table 2 Pictorial representation of how the website is laid out

i. Front End

Html, CSS, JavaScript are basic core of any websites which would definitely will be used. We can use different Frameworks like Angular<sup>9</sup>, ReactJS<sup>10</sup>, VueJS<sup>11</sup>. We can also open-source framework like bootstrap<sup>12</sup>. For definite uses we can also take use of PHP, Laravel<sup>13</sup>. JavaScript improves functionality of website.

ii. Back End

We can use latest updated frameworks or technologies like NodeJS<sup>14</sup>, ExpressJS PHP. Your website infrastructure could be based on languages like Python, Php, JavaScript etc.

iii. Database

As mentioned, we can build database which handles all the current bids updating and stores even user credentials. Most popular SQL queries like MySQL<sup>15</sup>, Oracle SQL<sup>16</sup>, PostgreSQL<sup>17</sup>; We can even use document-based database like MongoDB<sup>18</sup>, Redis<sup>19</sup>, Casandra<sup>20</sup> etc. For hosting general cloud services like Heroku<sup>21</sup>, AWS<sup>22</sup>, Netlify<sup>23</sup> etc. could be used for faster CDN and delivery of web packages to web browser.

V. BEST PRACTICES

a. Auctioneer & Bidders are all having their individual identities

A Bidder's internal state is their login Id and password. The bidder interacts with the Auctioneer through auction site only. The bidder only has two methods register and determine bid. During registration, a bidder obtains a login Id and password which they keep secret. When participating in an auction a bidder then determines bid according to their individual preferences.

b. Bid's info facility

The Auctioneer can look for the database containing all the bids which is the central component of the auction. This contains all information regarding bidders, their bids and auctions conducted [3].

There are two types of methods an Auctioneer can perform [4]:

1. Private
2. Public

Private methods are operations that only the Auctioneer can perform such as listing an incipient auction (list auction), register incipient bidders and have ability to cancel/terminate an auction.

Public methods are containing certain attributes which are requested by a bidder.

<sup>9</sup> <https://angular.io/>

<sup>10</sup> <https://reactjs.org/>

<sup>11</sup> <https://vuejs.org/>

<sup>12</sup> <https://getbootstrap.com/>

<sup>13</sup> <https://laravel.com/>

<sup>14</sup> <https://nodejs.org/en/>

<sup>15</sup> <https://www.mysql.com/>

<sup>16</sup> <https://www.oracle.com/in/database/>

<sup>17</sup> <https://www.postgresql.org/>

<sup>18</sup> <https://www.mongodb.com/>

<sup>19</sup> <https://redis.io/>

<sup>20</sup> <https://cassandra.apache.org/>

<sup>21</sup> <https://www.heroku.com/>

<sup>22</sup> <https://aws.amazon.com/>

<sup>23</sup> <https://www.netlify.com/>

This includes the faculty to authenticate, search for an auction, request the minimum increment, obtain a price quote, request the time remaining, submit a bid (submit bid) and logoff [5].

c. Database management

There should be certain necessary condition like timeframe and bidding price. For instance, an offer is equivalent to the new highest bid as it is submitted for a specific auction. It is discarded if it does not exceed the minimum acceptable amount to outbid the current highest bid. The Auctioneer timestamps each bid that meets the minimum sum and enters it into the database.

## VI. CONCLUSION

In the Era of evolution of modern-day technologies and inclusion of most prominent database, hosting platform, cloud vendors have provided top of resources with technological advancement for consumers in Scaling of Consumer website which can handle loads of user traffic on demand. While making website, a person or an organization should keep in mind that consumers data is important. Promotions and keeping website always live with faster loading speed should be essential to gain market traction on internet.

## REFERENCES

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