Auction Away

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Vision

Auction Away is aimed at providing a modern and seamless online solution to people who want to auction the things they no longer use at much higher prices than the ones offered by good-old classified ads. It can also be used by firms who want to bring their auctioning process online.

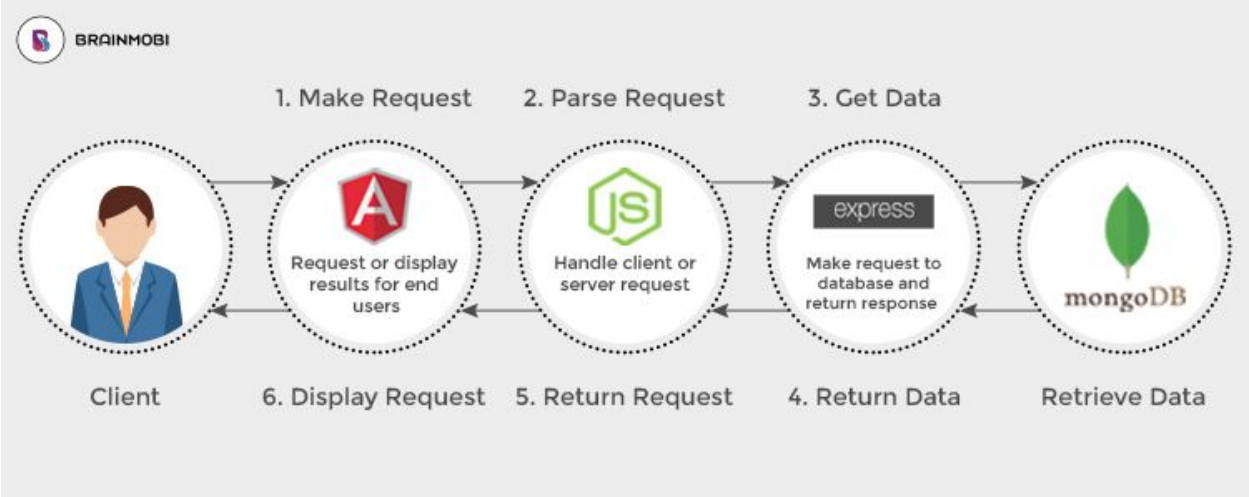
As we are moving into the digital age, Internet access has become a very essential part of our everyday lives. Building on which many processes, today, are moving online. Auctioning, traditionally has been very location specific wherein the bidder has to be at the location of auction, failing which he/she stands no chance of bidding for that particular item. Online auctions have changed the way auctioneers run auctions and buyers buy on auctions. Bidders can participate in an auction from anywhere and at anytime. All information of each product is in one central space on the website. Time and Money is saved by both parties involved in the auction as Buyers do not need to travel to participate in the auction while sellers do not need to set up a live event.

Auction Away provides an Open Auction environment, making sure both seller and buyer make a fair deal, wherein all the details of the auction are logged by the platform. The open nature of the auction promotes healthy competition among the bidders and a gives a sense of satisfaction to the seller. Auction Away is different from many auctioning portals as it can double up as a service that can be purchased by firms for their own auctions. Auction Away is being developed using latest state-of-the-art technologies that make the auctioning process highly reliable, flexible, scalable and extremely fast when compared to legacy auctioning systems currently in use, many of which are designed only for the particular company's auction.

Software Architecture

The technologies being used to develop Auction Away give it an edge over various other auctioning platforms and portals in terms of design, ease of use, speed and scalability. Auction Away is being developed using the cutting edge MEAN stack i.e MongoDB, Express, Angular and Node.js. MEAN stack is known for its speed and scalability. All communication between the server and client is done using Socket.IO, which enables real-time bidirectional event-based communication. While Angular provides speed and performance to the front-end, Express is a minimal and flexible Node.js web application framework that works in the Node.js environment at the back-end, which itself is known to be super fast and

highly responsive due to its asynchronous nature. MongoDB is the ideal type of database management system as the data that the platform is going to deal with is mostly non-relational and is BIG, just the kind MongoDB was built to handle.



Features

Being a Real-Time Auctioning Portal, Auction Away needs to be very Responsive and user-friendly. The portal would basically provide the listed functionalities, which are to be developed in the same order:

- **Viewing : Infinite Scrolling using Angular to list all the upcoming Auctions on the portal along with a short description of the item. A search functionality is also being incorporated to make the searching process easier and more powerful.**
- **Selling : Easy Interface for the seller to setup an auction and upload relevant details.**
- **Payment : The payment is managed by the portal and it sends relevant notifications to the parties involved in the transaction at appropriate times. It ensures secure and smooth flow of money from the buyer to the seller. It also has a Wallet feature that ensures that only bidders with a minimum security deposit (EMD) in their wallet can bid for an item.**
- **Auction Reminders : Users are notified of upcoming auctions that they have added to their wishlist.**
- **Bidding : The bidders are updated with all events happening in the auction while bidding for a specific item.**

Non-Functional Requirements

There are various other factors that affect the smooth functioning of the portal, some of which are :

- **Availability : Since there is no restriction as to when the auctions can be held, the portal shall be in working condition at all times, especially when there is an ongoing bid. Any kind of failure must be handled using rollback features and the auction must be rescheduled.**
- **Performance : The portal should be very responsive, especially in terms of placing bids in order to facilitate a fairer auction process.**
- **Compatibility : As the portal relies on heavy use of JavaScript and related frameworks, the client must be accessing the portal through a browser that is up-to-date, in order to provide the best possible experience to the users.**
- **Auto-Scaling : The portal must be able to scale automatically in response to changing traffic that it receives. The funds required for scaling during peak hours must be accounted for in the revenue that is generated by the portal in the form of auction commision fee.**
- **Documentation : Looking at all the technologies involved, installation and operation of the portal may seem to be a daunting job. Extensive External Documentation must be provided that simplifies the process of setting up the product for the developers as well as using the platform for the general user.**

Challenges

The biggest challenge from the technical point of view is the implementation of time-based events on the server (i.e. the auction). The auctioning of items must be independent of the bidders participating in the auction. Thus, the auction should be started by the server irrespective of the number of bidders online. This auction should run for a set amount of time, keeping all the clients and the server in sync at all times and then ends automatically.