CAS Project Report

The Colorado Aquarium Society (CAS) is home to Denver's largest exotic fish live auctions and is in association with the Colorado Aquarium. The CAS club is a social organization that hosts monthly events including auctions, speakers, field trips, and social gatherings. In the last 2 semesters, the CAS Live Auction Team has completed a fully functional, end-to-end auction and payment website custom tailored to the needs of the CAS Club. The website simplifies the auction process for both club members and staff members with an intuitive and easy to use interface and functionality to suit the updated requirements of the CAS Board. Our website offers a live, in-person auction system for CAS participants/staff which allows for unique user and admin dashboard functionality, real-time auction projection and ability for participants to checkout online for the items they won in the auction.

The intended audiences for this website are the club members and staff members. Our end goal was to make the online auction website easier for CAS Staff to conduct real time auctions and for CAS members to participate and engage with upcoming auctions. The site offers CAS staff a custom dashboard with auction-relevant functionality to simplify creating and managing the auction process and offers auction participants their unique dashboards for participating in auctions and transacting securely.

Technology Stack Utilized: MEAN Stack (Mongo, Express, Angular 8, Node.js)

> Programming language: JavaScript
> Frontend: Angular, TypeScript, HTML/CSS, Bootstrap
> Backend: NodeJS, ExpressJS
> Database: MongoDB, Mongoose, Robo 3T, JSON, MongoDB Atlas
> Development tools: Visual Code, Github/Git, Postman, Browser Development Tools

The CAS Live Auction team built the website entirely using the MEAN stack and chose this technology stack due to its long-term maintainability, lightweight implementation, and modern architecture. Using the Angular 8 framework, we were able to build features for the CAS Club that reduces the burden on staff members while they conduct their auctions in real-time during their monthly auctions.

We conducted 3 intensive testing rounds with our dedicated testing team to ensure the final product met and exceeded the outlined functional requirements of our client. We spent a lot of energy and focus on understanding the problem areas our client had with their current website and in-person auction process to provide ideal functionality and features while maintaining simplicity and intuitive design to best suit their needs.

After finalizing our website we have created the following features listed and summarized below:

General Functionality:
- Sign Up/ Sign In Registration
- Authentication
- Forgot Password/Reset Functionality
- Dashboard Recognizes User Type

User Features & Functionality:
- User can register to participate in Upcoming Auctions & view Auction Details in Dashboard
- User can sell items after participating in an auction
- User can sell quick sale items after participating in an auction
- User can upload image(s) and descriptions for items
- User can see updated item(s) in their cart after winning a bid in an auction
- User can securely transact their total using paypal, cash or credit/debit card
- User can see if their items are marked as sold/unsold after an auction is complete in cart/record page
- User can view other participants in an auction
- User can view items in an upcoming auction
- User can update their personal information, password, and email in My Profile

Staff Features & Functionality
- Staff can sign into staff specific dashboard
- Staff can create an upcoming Auction and add to the Auction List
- Staff can manage the Auction Queue (manage = CRUD functionality)
- Staff can manage the Auction Items
- Staff can manage (add, delete, update) User Profiles
- Staff can search for alias or item name in auction to find item results
- Staff can conduct a live auction or "start auction" which presents a projector view
- Staff can update items in real time during an auction for final price and winner ID
- Staff can view Auction history including list of participants and items status in an auction
- Staff can conduct a "quick sale" which manages a transaction between 2 participants
- Staff can order the auction items in a queue using "Define Order"
- Staff can access records of each user within an auction and check them out

High Level Page Hierarchy:

Home Page

Sign In/Sign Up Page

User Dashboard
- Auction Page
- Profile Page
- Checkout/Cart Page

Staff Dashboard
- Auction Page
- Profile Page
- Checkout Page
- Admin View Dashboard
  - Create Auction
  - Add Users
  - View All Users
  - Checkout Page
  - Records Page
  - Define Order Modal For Queuing Auction Items
  - Live Auction Projection View Page