

Project 12: AuctionNow Online Auction System

About the Client

Unlocking Value for Buyers & Sellers

AuctionNow is the largest industrial, auto and commercial eCommerce business in Australia, offering a huge range of industrial, auto, consumer and commercial goods, direct from manufacturers and distributors.

We offer our buyers great value and convenience and our vendors an efficient sales channel to unlock value from their assets. Our online selling platform and commitment to first-class customer service mean you can trust us to make buying and selling easy, efficient, fair and transparent.

For nearly 100 years, AuctionNow has helped buyers and sellers connect. From our first livestock sale in Goulburn, NSW in 1922 to moving our sales online in 2000 we have demonstrated the experience and expertise to deliver.

Our Services

For our buyers, we offer one of the widest ranges of quality business and consumer products online, from motor vehicles, manufacturing, construction and transport, to IT and consumer electronics, wine and fine jewellery.

For vendors, we help with all aspects of a sale program from valuations to cataloguing, project management, marketing, WHS compliance and reporting

We have helped thousands of companies maximise returns on their assets, equipment and inventory including: corporates, manufacturers, banks, finance companies, fleet operators, administrators, retailers, distributors and importers.

National Coverage, Global Reach

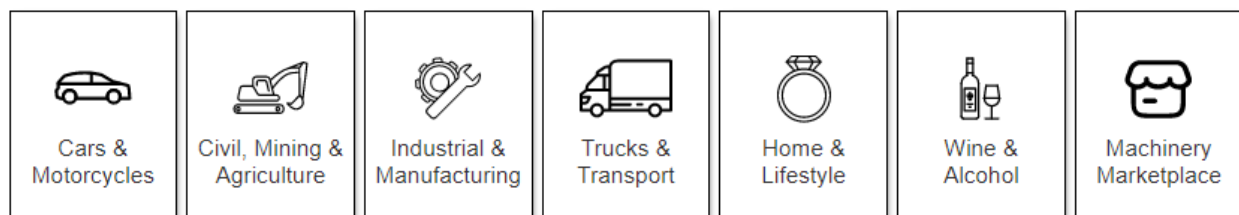
AuctionNow provides full national coverage across Australia and New Zealand with main offices in Sydney, Melbourne, Adelaide, Brisbane, Darwin, Perth and Wagga Wagga, covering approximately 50,000 sqm of warehouse space, 160,000 sqm of yard space and other additional smaller sites and regional depots.

Through our international network, we can access networks of buyers and sellers in Asia, the Middle East and Africa.

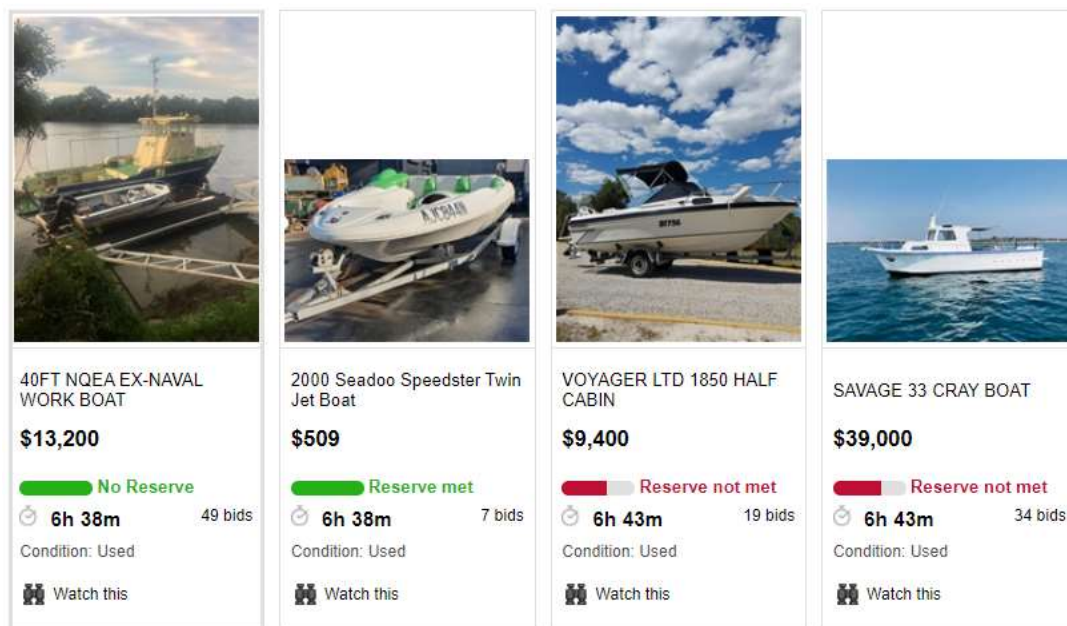
Project Brief:

Online auction however is a different business model where the items are sold through price bidding. Usually bidding have start price and ending time. Potential buyers in auction and the winner is the one who bids the item for highest price. We treat the fraud detection with a binary classification. For buying product online user have to provide his personal details like email address, license number, PAN number etc. Only the valid user will have authority to bid. This prevents various frauds according in online shopping.

Product Categories:



Product Catalog Features required:



INDUSTRIAL

- **Mining**
- **Construction**
- **Agriculture**
- **Earth Moving & Mobile Plant**
- **Manufacturing**
- **Engineering & Toolmaking**
- **Hire Plant & Containers**
- **Mechanical Workshops**
- **Forklifts**
- **Catering & Restaurant**

AUTOMOTIVE

- **Motor Vehicles**
- **Transport, Trucks & Trailers**
- **Auto Accessories**

ELECTRONICS

- **Computers & IT Equipment**
- **Audio, TV & Home Theatre**
- **Cameras**
- **Mobiles, GPS & MP3s**

WINE

- **Wine Sales**
- **Buy Now Wine**
- **Red Wine**
- **White Wine**

- **Rosé Wine**
- **Sparkling Wine**
- **Champagne**
- **Private Cellar**
- **Personal Wine Advisor**
- **Wines with Free Delivery**
- **"Win A Case" Promotion T&Cs**

HOME & GARDEN

- **Appliances & Whitegoods**
- **BBQs**
- **Power Tools**
- **Home Renovators**
- **Building Materials & Timber**
- **Kitchen & Bathrooms**
- **Landscaping**
- **Bedding & Manchester**
- **Art & Antiques**
- **Solar Energy**

FURNITURE

- **Home Furniture**
- **Office Furniture**
- **Outdoor Furniture**

FINE JEWELLERY

- **Engagement Rings**
- **Diamond Jewellery**

- Pearls
- Watches

Modules

1. User Management Module

- User registration and login
- User profile management (buyer, seller, admin roles)
- Password reset and account recovery
- User verification (email/SMS)

2. Role-Based Access Control Module

- Define roles: Administrator, Seller, Buyer
- Assign permissions based on role
- Enforce access control across all modules

3. Auction Creation and Management Module

- Sellers can create new auction listings
- Define auction details (title, description, start price, reserve price)
- Upload images and videos
- Set start and end dates/times

4. Bidding Module

- View active auctions
- Place bids on items
- Validate bids with minimum increments
- Real-time bid updates

- Automatic bidding (optional max-bid functionality)

5. Auction Catalogue and Search Module

- Browse auctions by category
- Advanced search (keywords, price range, closing soon)
- Sorting and filtering options
- Featured or promoted listings

6. Watchlist and Notifications Module

- Add auctions to personal watchlist
- Receive email/SMS/app notifications for:
 - Auction start
 - Auction end
 - Outbid alerts
 - Winning confirmation

7. Payment and Checkout Module

- Winning bidder payment processing
- Multiple payment methods (credit card, PayPal, bank transfer)
- Generate invoices and receipts
- Handle refund management

8. Order and Delivery Management Module

- Seller confirmation of shipment
- Buyer confirmation of receipt
- Tracking information entry
- Delivery status updates

9. Reviews and Ratings Module

- Buyers can rate sellers
- Sellers can rate buyers
- Display average ratings on profiles
- Admin moderation of reviews

10. Dispute Resolution Module

- Users can lodge disputes or complaints
- Messaging between buyer, seller, and admin
- Log admin decisions
- Track dispute resolution status

11. Admin Dashboard and Management Module

- Manage user accounts
- Approve or moderate auctions
- Reporting and analytics dashboard
- Manage categories and site settings
- View system logs

12. Reporting and Analytics Module

- Auction performance reports
- Sales and revenue reports
- User activity and registration statistics
- Payment and settlement reports

13. Notifications and Messaging Module

- Email and SMS notifications for key events
- Internal messaging between buyers and sellers

- Admin-to-user announcements

14. Security and Audit Module

- Log user activity
- Fraud detection and alert system
- Data encryption at rest and in transit
- Admin audit trails

15. Content Management Module

- Manage site pages (About, FAQs, Terms)
- Upload banners and featured auctions
- Manage categories and tags
- SEO settings

Functional Requirements:

FR1. Allow user registration as buyer or seller with email verification.

FR2. Enable secure login and logout for all users.

FR3. Provide password reset and account recovery.

FR4. Let users edit their profile information.

FR5. Verify seller identities using optional KYC.

FR6. Define user roles: Administrator, Seller, Buyer.

FR7. Enforce role-based permissions across all features.

FR8. Allow administrators to modify role permissions.

FR9. Let sellers create new auction listings with title, description, price, and category.

FR10. Upload images and videos for auction items.

FR11. Set auction start and end times.

FR12. Enable sellers to edit or remove listings before auction start.

FR13. Allow buyers to place bids on active auctions.

FR14. Validate bids against minimum increment rules.

FR15. Update current highest bid in real time.

FR16. Offer optional automatic bidding with max-bid limits.

FR17. Prevent bids after the auction end time.

FR18. Display active auctions in a searchable catalogue.

FR19. Provide filtering by category, price range, and closing soon.

FR20. Enable keyword-based search.

FR21. Offer sorting by price, popularity, or end time.

FR22. Highlight featured or promoted listings.

FR23. Allow users to add auctions to a personal watch list.

FR24. Send notifications for auction start and end.

FR25. Notify users when they are outbid.

FR26. Confirm winning bids to buyers.

FR27. Notify sellers when an item is sold.

FR28. Enable checkout for winning bids.

FR29. Accept multiple payment methods (credit card, PayPal, bank transfer).

FR30. Generate and store invoices for transactions.

FR31. Notify sellers when payment is received.

FR32. Process refunds for cancelled orders.

FR33. Let sellers confirm shipping and enter tracking information.

FR34. Notify buyers of shipping status updates.

FR35. Allow buyers to confirm receipt of items.

FR36. Maintain order status history for both buyer and seller.

FR37. Enable buyers to rate sellers after purchase.

FR38. Allow sellers to rate buyers.

FR39. Store and display average ratings on profiles.

FR40. Support textual reviews with moderation by admin.

FR41. Allow buyers and sellers to raise disputes.

FR42. Enable messaging between buyer, seller, and admin for dispute resolution.

FR43. Log admin decisions on disputes.

FR44. Notify parties about dispute status changes.

FR45. Maintain a history of all disputes.

FR46. Provide administrators with user account management tools.

FR47. Enable auction approval or moderation by admins.

FR48. Display dashboard with site statistics.

FR49. Allow management of categories and site settings.

FR50. Maintain logs of system activity.

FR51. Generate auction performance reports.

FR52. Summarise total sales and revenue.

FR53. Provide user registration and activity statistics.

FR54. Report payment and settlement status.

FR55. Allow export of reports in PDF or CSV format.

FR56. Send email and SMS notifications for key events.

FR57. Enable internal messaging between buyers and sellers.

FR58. Support admin-to-user announcements.

FR59. Allow users to configure notification preferences.

- FR60. Log all notifications sent.**
- FR61. Log user activity for audit purposes.**
- FR62. Enforce secure password policies.**
- FR63. Encrypt sensitive user data at rest and in transit.**
- FR64. Detect and alert for suspicious activities.**
- FR65. Allow admins to review audit logs.**
- FR66. Manage static site pages (About, FAQs, Terms).**
- FR67. Upload and manage banners for featured auctions.**
- FR68. Organise auction categories and tags.**
- FR69. Configure SEO settings for site pages.**
- FR70. Allow admins to preview content before publishing.**

Non-Functional requirements:

1. Performance Requirements

- NFR1. Support at least 100 users with consistent response times under 2 seconds for most operations.
- NFR2. Handle high volumes of image uploads.
- NFR3. Provide real-time search and filtering with minimal latency.
- NFR4. Enable scalable architecture to accommodate increasing user base and product listings.

2. Security Requirements

- NFR5. Encrypt sensitive data at rest using industry-standard encryption (e.g., AES-256).
- NFR6. Enforce HTTPS for all data transmission to secure data in transit.
- NFR7. Implement role-based access control with fine-grained permissions.
- NFR8. Store passwords securely using hashing algorithms.
- NFR9. Log all user and admin activity for auditing and compliance.

- NFR10. Detect and alert for suspicious or fraudulent behaviour.

3. Reliability Requirements

- NFR11. Ensure data integrity during transactions (e.g., payments, listing updates).

4. Usability Requirements

- NFR12. Deliver user-friendly interface for buyers and sellers.
- NFR13. Support responsive design for desktops, tablets, and smartphones.
- NFR14. Provide clear error messages and validation feedback.

6. Compatibility Requirements

- NFR15. Support all major modern web browsers (Chrome, Firefox, Safari, Edge).
- NFR16. Ensure compatibility with Android and iOS devices.
- NFR17. Integrate securely with payment gateways and financing providers.

7. Scalability Requirements

- NFR18. Enable modular architecture to facilitate easy addition of new features.

8. Maintainability Requirements

- NFR19. Follow consistent coding standards and documentation practices.
- NFR20. Use modular codebase for easier updates and feature enhancements.
- NFR21. Log and monitor application errors with clear diagnostics.

9. Audit and Compliance Requirements

- NFR22. Maintain logs of critical user activities for at least 12 months.

- NFR23. Allow export of audit logs for compliance reviews.

10. Legal and Ethical Requirements

- NFR24. Display Terms of Service, Privacy Policy, and User Agreement clearly.
- NFR25. Obtain user consent for data collection and communication preferences.
- NFR26. Provide mechanisms for users to delete their accounts and associated data.

Hardware Requirement: Should be recommended by the developers.

Software Requirement: Should be recommended by the developers.