

Avion Furniture Marketplace Project Documentation

1. Overview The Furniture Marketplace is an e-commerce platform aimed at empowering small businesses and individuals by providing a seamless and secure online shopping experience. Over six days, the project evolved from brainstorming ideas to deploying a staging environment. The main phases of the project are outlined below.

Day 1: Conceptualization and Marketplace Design

Key Achievements:

- Defined the marketplace type as a general e-commerce platform for furniture.
- **Business Goals:**
 - Promote small businesses and entrepreneurship.
 - Provide a platform to easily buy/sell furniture online.

Data Schema Design:

- **Entities:** Products, Orders, Customers, and Delivery Zones.
 - **Relationships:**
 - Customers place orders that reference products.
 - Delivery zones are assigned to drivers for fulfillment.
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Day 2: Technical Planning

Key Achievements:

- **Tech Stack:**
 - Frontend: Next.js with Tailwind CSS for styling.
 - Backend: Sanity CMS for content management.
 - **API Requirements:**
 - Product management: /products, /product/:id.
 - Orders: /orders (POST) and /shipment/:id (GET).
 - **Deployment Plan:**
 - Frontend on Vercel and backend on AWS Lambda with serverless architecture.
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Day 3: Data Migration

Key Achievements:

- **Custom Migration Code:**
 - Data from Sanity CMS was migrated to Next.js using GROQ queries.
 - Example GROQ Query:

```
*[_type == "product"] {title, description, price, image}
```
 - **Schema Definition:**
 - Products schema included fields for title, slug, description, price, and image.
 - **Client Integration:**
 - Fetched and displayed data dynamically on the homepage.
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Day 4: Building Dynamic Frontend Components

Key Achievements:

- **Dynamic Product Listings:**
 - Created a Products component to display furniture dynamically fetched from Sanity.
 - **Filters and Sorting:**
 - Implemented filters for categories and price ranges.
 - Sorting options included price and popularity.
 - **Reusable Components:**
 - ProductCard: Displayed product images, titles, and prices.
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Day 5: Testing and Backend Refinement

Key Achievements:

- **Testing Types:**
 - **Functional Testing:**
 - Verified workflows like product listings, cart operations, and API interactions.
 - **Performance Testing:**
 - Used Lighthouse, MTmetrix Grade to analyze load times and responsiveness.
 - **Security Testing:**

- Validated input fields, secure API keys, and HTTP implementation.

CSV Content: Test Cases for Testing Phase

Test Case ID, Description, Expected Result, Actual Result, Status, Severity, Remarks

TC001, Verify navigation links, Links navigate correctly, All links function correctly, Pass, Low, None

TC002, Check product listing display, Products display as expected, Products displayed correctly, Pass, Medium, None

TC003, Test shopping cart operations, Items add, update, and remove, Cart functionality works as expected, Pass, High, None

TC004, Validate contact form submission, Form submits successfully, Submission works with valid data, Pass, Medium, None

TC005, Analyze performance metrics, Achieve Performance ≥ 90 , Performance: 92, Pass, Medium, Optimizations for images implemented

TC006, Verify accessibility features, Accessibility score ≥ 90 , Accessibility: 96, Pass, Medium, Addressed contrast issues

TC007, Validate best practices, Best Practices score ≥ 90 , Best Practices: 96, Pass, Low, Minor improvements in image ratios noted

TC008, Optimize SEO, SEO score ≥ 90 , SEO: 100, Pass, Low, Structured data validated successfully

Day 6: Deployment Preparation and Staging Environment Setup

Key Achievements:

- **Deployment Strategy:**
 - Hosted the application on Vercel for quick deployment.
 - Integrated GitHub repository for CI/CD.
- **Environment Variables:**
 - Configured sensitive variables (e.g., API keys) in `.env` and uploaded them securely to Vercel.

- **Staging Environment:**

- Deployed a staging build to validate functionality in a production-like environment.
- Example `.env` file:
NEXT_PUBLIC_SANITY_PROJECT_ID=your_project_id
- NEXT_PUBLIC_SANITY_DATASET=production

API_KEY=your_api_key

- **Staging Testing:**

- Functional Testing: Verified key workflows like product listings and checkout.
- Performance Testing: Used GTmetrix for analyzing speed and responsiveness.
- Security Testing: Validated HTTPS, input handling, and secure API calls.

- **Documentation:**

- Created a `README.md` summarizing the project structure and deployment steps.
- Organized the GitHub repository with the following folder structure:

```
├── src/
|   ├── app/
|   |   ├── index.ts
|   |   ├── product/
|   |   └── [slug].ts
├── public/
|   ├── images/
|   └── assets/
├── documents/
|   ├── Day_1.pdf
|   └── Day_2.pdf
```

| |—— Day_3.pdf
| |—— Day_4.pdf
| |—— Day_5_Testing_Report.csv
| |—— Day6.pdf
|—— .env
|—— README.md

Conclusion

Over the course of six days, the Furniture Marketplace project evolved from an initial concept to a fully deployed platform, incorporating essential features and ensuring an intuitive user experience. With a well-organized GitHub repository, dynamic components, and thorough testing, the project is now poised for deployment in a live production environment.

The next steps for the project include:

1. Resolving any remaining issues identified during the staging testing phase.
2. Monitoring the live environment to gather user feedback and assess performance metrics.
3. Expanding the platform by introducing advanced features such as multi-language support and predictive analytics.

This concludes the successful development of the Furniture Marketplace hackathon project!

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