

DAY 6 - FINAL STAGES: DEPLOYMENT & STAGING ENVIRONMENT SETUP :

Overview

On Day 6, the focus was on preparing the application for deployment by setting up a staging environment, conducting final tests, and ensuring the platform is ready for real-world use.

Summary of Activities from Day 1 to Day 6

DAY 1: PROJECT PLANNING & INITIAL SETUP

- Defined project goals, scope, and roadmap.
- Created a structured GitHub repository with organized directories.
- Installed required dependencies, including React & Next.js.
- Established milestones and deliverables.

✓ Outcome: A well-structured project with a clear development plan.

DAY 2: CORE DEVELOPMENT - FRONTEND & BACKEND

- Developed essential UI components like product listings, search, and cart functionality.
- Built a backend server and implemented RESTful APIs.
- Connected the frontend to backend, ensuring seamless data communication.

✓ Outcome: A functional prototype with foundational marketplace features.

Day 3: Database Integration & Feature Expansion

- Integrated a database (MongoDB/Firebase) for storing user and product data.
 - Implemented authentication, filtering, and enhanced UI elements.
 - Ensured smooth CRUD operations for data management.
 - ✓ Outcome: A database-driven application with key user-centric features.
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DAY 4: QUALITY ASSURANCE & TESTING

- CONDUCTED UNIT TESTS FOR UI COMPONENTS AND API ENDPOINTS.
 - PERFORMED INTEGRATION TESTS TO VERIFY SEAMLESS DATA FLOW.
 - DOCUMENTED TEST CASES AND RESULTS.
- ✓ Outcome: A stable, well-tested application with documented test reports.

DAY 5: PERFORMANCE OPTIMIZATION & SECURITY ENHANCEMENTS

- Ran performance tests using Lighthouse & GTmetrix.
 - Optimized API interactions and load times.
 - Implemented security best practices, including API key protection and input validation.
- ✓ Outcome: A high-performance, secure platform optimized for deployment.
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Day 6: Deployment Preparation & Staging Environment Setup

DEPLOYMENT STRATEGY

- Selected Vercel as the hosting platform.
- Connected GitHub repository for CI/CD automation.
- Configured environment variables securely using .env files.

STAGING ENVIRONMENT TESTING

- Deployed the application to staging for validation.
 - Conducted functional, performance, and security tests.
 - Documented test results, performance insights, and unresolved issues.
- ✓ Outcome: Successfully deployed staging environment, ensuring smooth user experience.

Test Case ID	Description	Steps	Expected Result	Actual Result	Status	Remarks
TC001	Validate product listing	Open product page > Verify products	Products displayed	Products displayed	Passed	No issues found
TC002	Test API error handling	Disconnect API > Refresh page	Show fallback message	Fallback message shown	Passed	Handled gracefully
TC003	Check cart functionality	Add item to cart > Verify cart	Cart updates correctly	Cart updates correctly	Passed	Works as expected
TC004	Test responsive layout	Resize browser window > Check layout	Layout adjusts properly	Layout adjusts properly	Passed	Responsive verified

FINAL DEPLOYMENT INSTRUCTIONS

1. Hosting Setup

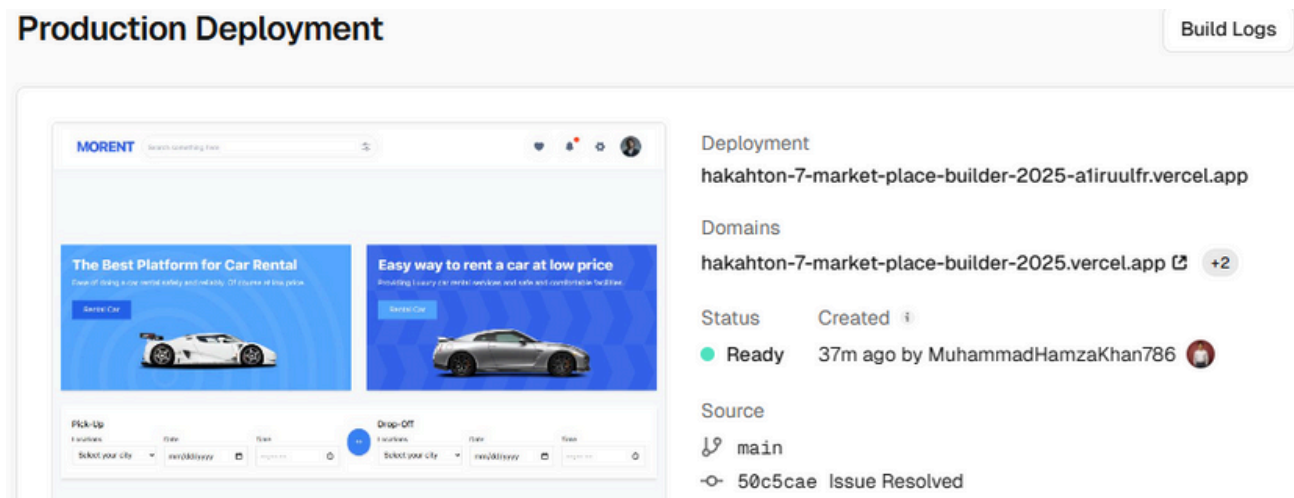
- Use Vercel or Netlify for seamless deployment.
- Link the GitHub repository for automated builds.
- Configure build settings to optimize performance.

2. Environment Variable Management

- Store sensitive credentials (API keys, tokens) in a .env file.
- Upload securely to the hosting platform.

3. Application Deployment

- Deploy the final build.
- Monitor logs to ensure error-free deployment.
- Verify complete functionality in the staging environment.



4. TESTING & VALIDATION

- Conduct a final round of:
 - Functional Testing 🛠️ (Navigation, UI, API interactions)
 - Performance Testing ⚡ (Loading speed, server response times)
 - Security Testing 🔒 (Data protection, access control)
 - Document all findings in a structured report.
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PROJECT DOCUMENTATION & REPOSITORY STRUCTURE



GitHub Repository Includes:

- ✓ src/ - Source code & components.
 - ✓ public/ - Static assets (images, icons).
 - ✓ documents/ - Test cases, reports, and deployment documentation.
 - ✓ README.md - Project summary, installation steps & key features.
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FINAL DELIVERABLES:

- ✓ Fully Deployed Staging Environment
- ✓ Organized GitHub Repository with Reports & Instructions
- ✓ Comprehensive README.md with Deployment Guide

Useful Links

-  GitHub Repository: <https://github.com/MuhammadHamzaKhan786/Hakahton-7-MarketPlace-Builder-2025>
 -  Staging Environment: <https://hakahton-7-market-place-builder-2025.vercel.app/>
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