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DAY6 – DEPLOYMENT PREPARATION AND STAGING ENVIRONMENT SETUP

Objective:

On Day 6, the focus is on preparing my Nike Ecommerce marketplace for deployment by creating a staging environment, setting up hosting platforms, and ensuring everything is ready for end-users. Building upon the testing and optimization completed on Day 5, this phase emphasizes making sure the marketplace functions flawlessly in an environment that mimics production.

1. Deployment Strategy Planning

I have selected **Vercel** as the hosting platform for deploying my project.

Vercel:

Vercel is the chosen hosting platform for my project, and it stands out as an excellent option for several reasons. First, Vercel is optimized for Next.js projects, providing seamless integration and automated deployments with minimal configuration. It offers scalability, fast performance, and automatic global content delivery, ensuring a smooth user experience worldwide.

Sanity CMS:

In the development of my Nike Ecommerce marketplace, I have integrated Sanity CMS as the database to manage and store product data. Sanity was chosen for its flexible and customizable content management features, allowing me to easily update and manage my product listings without coding every change.

Shipengine API:

For collecting user shipping addresses, I have used the ShipEngine API. ShipEngine is an excellent choice because it provides seamless integration with various shipping carriers, allowing you to easily handle shipping calculations, label creation, and tracking information for a variety of locations.

Stripe:

To handle payment processing, I have implemented Stripe. Stripe is a popular and reliable platform for processing payments due to its strong security features, wide payment method support, and ease of integration with project.

Clerk:

Additionally, for user authentication, I have used Clerk. Clerk simplifies user login, registration, and session management while providing secure, customizable authentication flows, which are ideal for my project where user security and convenience are important.

2. Environment Variable Configuration:

Secure Management:

I have stored all my API keys, database credentials, and other sensitive data securely in my .env local file. This ensures that private information such as my API keys for services like Stripe, ShipEngine, and Sanity, as well as any other confidential details, remain protected.

I have taken the necessary precautions by ensuring that my .env file is not pushed to GitHub, which prevents unauthorized access to my sensitive information. This is an important security measure, as keeping such data private helps maintain the integrity and confidentiality of your application and prevents malicious actors from exploiting your keys.

Environment Variables in the Hosting Platform:

In this step, all API keys, secret values, and sensitive data are securely added to Vercel's environment variables. This approach ensures that the keys are not exposed in the codebase, reducing the risk of unauthorized access. By storing the environment variables in Vercel, the sensitive information is only available to the deployed application, enhancing security and providing a safe deployment environment.

3. Staging Environment Setup:

Deploying to Staging Environment:

To simulate a production environment, the marketplace application was deployed to a staging environment. This ensures that the app performs well and functions as expected before going live.

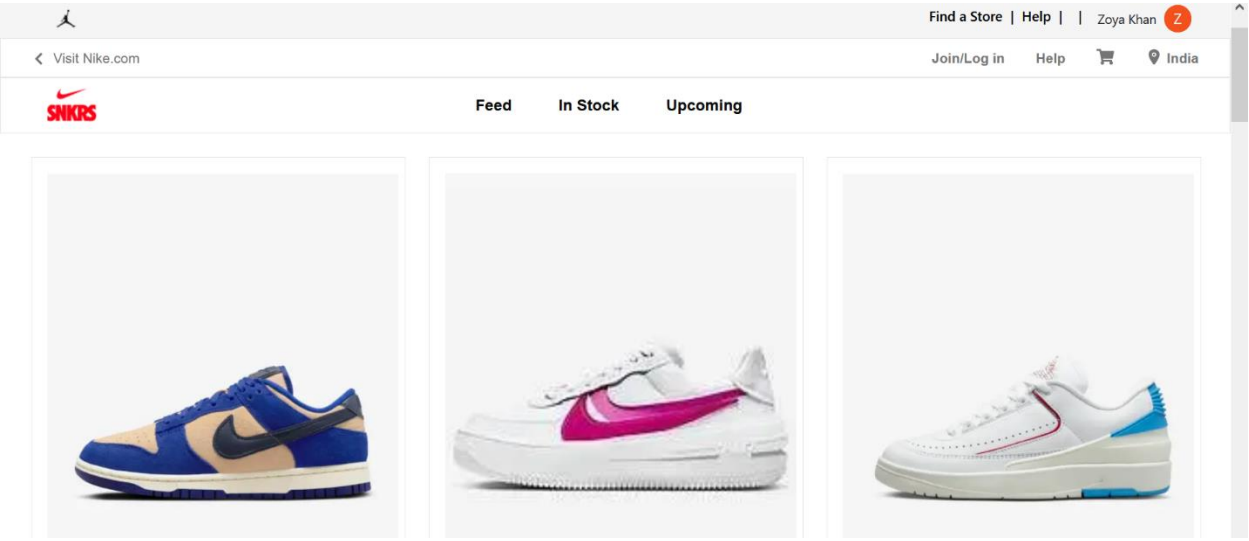
Validating Deployment and Site Functionality:

The deployment was validated by confirming that the build process completed successfully. Additionally, thorough testing was done to verify that the site loads correctly and all features function seamlessly.

4. Staging Environment Testing:

Functional Testing: Ensuring Seamless User Experience:

All core functionalities of the marketplace have been thoroughly tested to ensure smooth user experience. This includes the product listing, search functionality, and cart operations. Every feature performs as expected, with no issues in browsing products, filtering items, adding products to the cart, and proceeding to checkout. The functionality is reliable and consistent across all user interactions, guaranteeing a seamless shopping experience.



Find a Store | Help | | Zoya Khan Z

Nike Women's Dunk Low Blue

Women's Shoe

MRP: ₹9905.00

incl. of taxes

(Also includes all applicable duties)

Select Size: Select Guide

6	7	7.5
8	9	9.5
10		

Quantity: - 1 +

Add to Bag (1)

Find a Store | Help | | Zoya Khan Z

The Nike Women's Dunk Low Blue Suede brings a fresh and stylish twist to the classic Dunk silhouette. Featuring a soft blue suede upper with white leather overlays, this sneaker delivers both comfort and luxury. The signature Dunk Low shape provides a clean, versatile look that can be styled effortlessly with any outfit. Equipped with a durable rubber outsole for grip and stability, this sneaker is perfect for casual wear or as a statement piece in your collection.

Color Shown: BlueWhite
"Soft blue suede upper with leather overlays", "Iconic Dunk Low silhouette", "Durable rubber outsole for traction and stability"
DZ5350-042

View Product Details:

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Free Delivery

Applies to order of ₹14 000.00 or more. View details

Bag

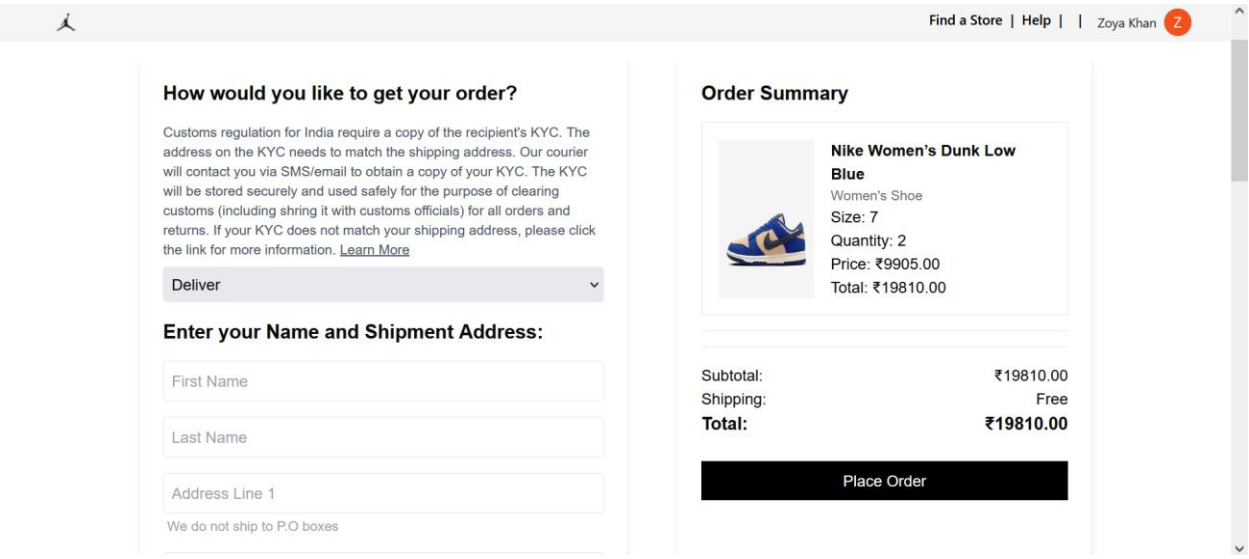
Nike Women's Dunk Low Blue
Women's Shoe
Selected Size: 7
"Soft blue suede upper with leather overlays", "Iconic Dunk Low silhouette", "Durable rubber outsole for traction and stability"
Price: ₹9905.00
Total: ₹ 19810.00
Quantity: 2

MRP: ₹9905.00

Summary

Subtotal	₹ 19,810.00
Estimated Delivery & Handling	Free
Total	₹ 19,810.00

Proceed to Checkout

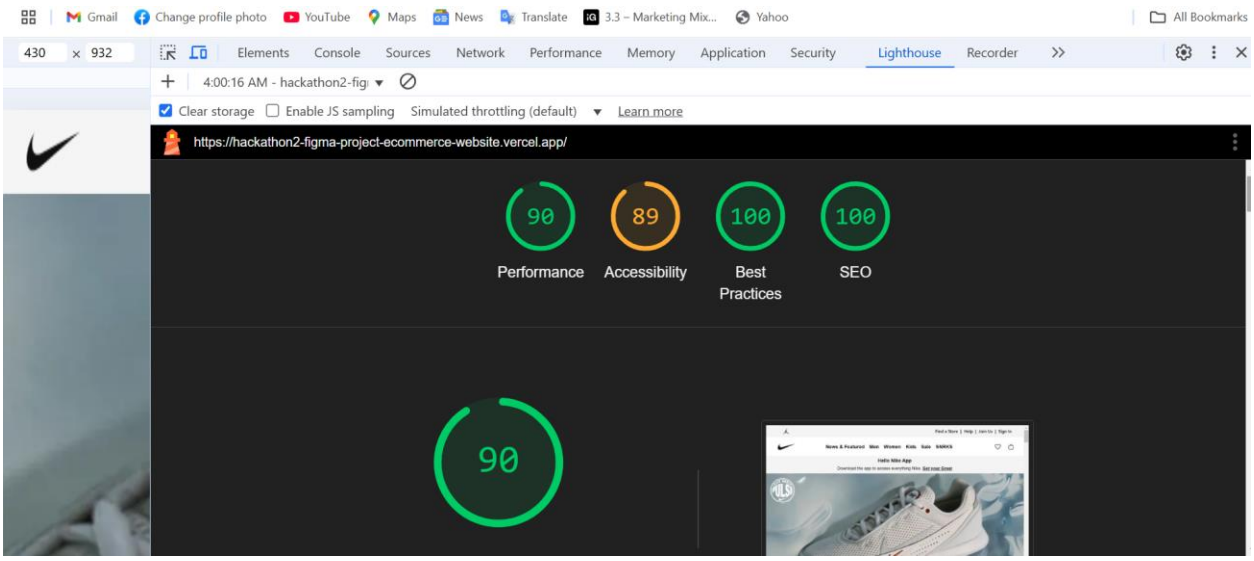


Performance Testing:

Lighthouse:

To ensure optimal performance, I utilized **Lighthouse**, a powerful open-source tool developed by Google, to analyze and enhance the speed, responsiveness, and overall user experience of my marketplace.

By running Lighthouse audits, I identified areas that needed improvement, such as optimizing images, reducing unused JavaScript, and leveraging caching strategies. The reports provided valuable insights into **load times, accessibility, SEO, and best practices**, helping me refine my deployment for a smooth and efficient user experience. Lighthouse played a crucial role in ensuring that my marketplace runs efficiently, loads quickly, and provides a seamless experience on both desktop and mobile phones.



Security Testing: Ensuring a Safe and Secure Application:

✅ Input Field Validation:

All input fields have been properly validated to prevent XSS (Cross SQL Injection, and other vulnerabilities -Site Scripting),. Only valid data is accepted, and special characters that could be used for attacks are properly sanitized.

✅ HTTPS Usage:

The application is fully secured with HTTPS, ensuring end-to-end encryption of all data transmitted between the client and server. This prevents man-in-the-middle **attacks** and keeps user data safe.

✅ Secure API Communications:

- All API requests and responses are secured using HTTPS to prevent data interception.
- Authentication tokens are used for protected routes, ensuring only authorized users can access sensitive endpoints.
- CORS (Cross-Origin Resource Sharing) policies are properly configured to allow requests only from trusted origins.

Test Case Reporting:

CSV file serves as a comprehensive testing record that helps identify potential bugs, track fixes, and validate functionalities before going live. By including key details such as Test Case ID, Description, Steps, Expected Result, Actual Result, Status, and Remarks**,** ensuring that every feature of my project has been properly tested.

A	B	C	D	E	F	G	H	I
Test Case I	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Assigned T	Remarks
TC001	Validate product listing page	Open product page > Verify products	Products displayed correctly	Products displayed correctly	Passed	High	-	No issues found
TC002	Test API error handling	Disconnect API > Refresh page	Show fallback UI with error message	Error message shown	Passed	Medium	-	Handled gracefully
TC003	Check cart functionality	Add product to cart > Verify cart contents	Cart updates with added product	Cart updates as expected	Passed	High	-	Works as expected
TC004	Ensure responsiveness on mobile	Resize browser window > Check layout	Layout adjusts properly to screen size	Responsive layout working as intended	Passed	Medium	-	Test successful

Conclusion:

Throughout the development and deployment of my Nike e-commerce marketplace**,** I have successfully implemented essential components to ensure a fully functional, secure, and optimized platform for users. My approach covered everything from hosting, backend, integration, deployment, security, and testing to final**.**

My project has undergone thorough development, rigorous deployment, testing, and secure practices**.** By leveraging modern tools like Vercel, Sanity CMS, Stripe, ShipEngine, and Clerk, I have built a scalable, efficient, and secure marketplace that is ready for real-world usage.

Submission:

I initially submitted my project ahead of schedule to ensure I met the deadline, but I decided to delay the documentation to allow myself more time to refine and perfect the application. I wanted to work on additional enhancements, conduct further optimizations, and ensure everything was running smoothly before creating the final documentation. This approach allowed me to deliver a more polished and well-tested product, and I am now confident that the documentation reflects the full scope of my work and efforts.

GIAIC Q2 Marketplace Builder Hackathon 2025 Submission Form

Thank You for Your Hackathon Submission

This is Ameen Alam, Dean of Faculty. On behalf of all faculty members, I want to congratulate you on completing the hackathon and submitting your work. Your dedication over the past 11 months has been inspiring, and we are proud of your progress.

We hope this journey has prepared you to confidently launch your marketplace and take the first step toward a successful future. Keep pushing your limits, learning new skills, and embracing innovation. The skills you've gained here are just the beginning of a fulfilling professional journey.

As we look ahead, I encourage you to start learning Python independently. Python is a powerful tool that will be invaluable in Q3.

To get started, here is some Python content for you: https://github.com/panaversity/learn-modern-ai-python/tree/main/04_natural_language_programming

Start as soon as you can—it will greatly benefit your career and upcoming studies.

Lastly, please remember that on Saturday and Sunday, 25-26 January 2025, you will have an Advanced Next.js MCQs-based exam. The exam will consist of 20 complex MCQs based on official Next.js documentation, so make sure to review it thoroughly.