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Hackathon MarketPlace Day 6: Deployment and Staging Environment Setup

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Objectives

- Prepare the e-commerce marketplace for deployment.

- Set up a **staging environment** to test the application in a production-like setting.

- Choose **Vercel** as the hosting platform due to its seamless integration with **Next.js** and **GitHub**.

Tasks Performed

1. **Configured Environment Variables**

   - Ensured all required variables are properly set up in both local and Vercel environments.

   - Used vercel project settings to manually configured environment variables exact as they were in .env file.

2. **Connected GitHub Repository to Vercel**

   - Linked the project repository to Vercel for automated deployments.

   - Verified that changes pushed to the repository triggered a new build.

3. **Deployed the Application to a Staging Environment**

   - Built the project using `npm run build` before deploying.

     - Here I have found so many type errors then I fixed them one by one.

   - Checked Vercel build logs for errors and fixed any issues.

4. **Added Domain to Sanity Project CORS:**

- I have seen during testing that there were no product listings on home page as well as shop page. Then I found that I have not added the domain to the CORS setting. By doing this I have immediately fixed the error.

5. **Conducted Testing in Staging**

   - **Functional Testing:** Ensured all core features, such as cart functionality, checkout, and product listings, worked as expected.

   - **Performance Testing:** Evaluated load times and optimized where necessary.

   - **Security Testing:** Checked for vulnerabilities in API endpoints and database connections.

Challenges & Solutions on Day 6

1️⃣ Environment Configuration

- The most challenging part was ensuring that all **environment variables** were correctly set up in Vercel, particularly API keys.

- Even though the process was straightforward, **one missing or misconfigured variable** could break the application.

- Solution: Carefully verified each variable using `vercel env pull` and compared local and Vercel configurations.

2️⃣ Testing Errors & Debugging

- **API Integration Issues:**

  - During staging tests, certain API data was not being fetched properly.

  - Root cause: Some environment variables were **misconfigured** or **missing** in the Vercel settings.

  - Solution: Reviewed configuration files, fixed the missing values, and redeployed.

- **CORS Policy Error:**

  - While testing the **home** and **shop** pages, I noticed that **no product listings were appearing**.

  - After debugging, I realized that the issue was due to **CORS policy restrictions**, preventing API data from loading.

  - Solution: **Updated the CORS settings** to allow requests from the correct domain, which immediately resolved the issue.

3️⃣ Performance Optimization

- **Mobile Responsiveness & Load Time:**
  - Ensured that the website performed smoothly on mobile devices.
  - Optimized images and **implemented lazy loading** to improve loading speed.
  - Used Chrome DevTools and Lighthouse to analyze and fine-tune performance.

🔹 Outcome & Next Steps

- Successfully **deployed the e-commerce marketplace to a staging environment**.
- Conducted extensive **functional, performance, and security tests** to ensure a seamless experience.
- Fixed all critical **deployment errors, API integration issues, and performance bottlenecks**.
- Organized project files, reports, and documentation in a **structured GitHub repository**.
- Now ready for the **final production deployment** and **post-launch monitoring**.

🚀 **Deployment is just the beginning! Next, I'll focus on ensuring a smooth production release and handling real-world traffic.**

Conclusion

Throughout this phase of the hackathon, I successfully set up and deployed my **e-commerce marketplace** to a **staging environment**, ensuring a smooth transition towards production. I tackled critical deployment challenges, including **environment variable configuration, API integration issues, and CORS policy errors**, resolving them through careful debugging and optimizations. By leveraging **Vercel** for deployment and **GitHub integration**, I automated builds and ensured a streamlined workflow.

Extensive testing in the staging environment, covering **functional, performance, and security aspects**, helped me refine the application further. I also implemented **lazy loading, image optimizations, and mobile responsiveness enhancements** to boost performance. Organizing all **project files, reports, and documentation in a structured GitHub repository** made collaboration and future updates more manageable.

With the **staging deployment now complete**, the next step is the **final production deployment**, followed by continuous monitoring and real-world testing. This journey has strengthened my **deployment, debugging, and optimization skills**, bringing me closer to delivering a fully functional, high-performance marketplace. 🚀