Day 6 - DEPLOYMENT PREPARATION AND STAGING ENVIRONMENT SETUP - [www.WoodenAspire.com]

Objective:

Day 6 focuses on deployment readiness by setting up a staging environment, configuring hosting, and ensuring the application is customer-ready. Building on Day 5's testing and optimizations, this phase ensures smooth operation in a production-like setup. Students will also learn to manage non-production (TRN, DEV, SIT) and production (UAT, PROD, DR) environments, ensuring a robust, real-world-ready platform.

Key Learning Outcomes:

1. Set up and configure a staging environment for your marketplace. This involves:
   - Choosing a hosting platform like Vercel or Netlify.
   - Linking your GitHub repository to the platform.
   - Configuring build and deployment settings to ensure successful staging builds.
   - Securely setting up environment variables within the hosting platform.
   - Testing the application in a production-like environment to identify and resolve any issues before deployment.

2. Learn professional environment management practices, including the stages of TRN (Training), DEV (Development), SIT (System Integration Testing), UAT (User Acceptance Testing), and PROD (Production).

3. Perform thorough testing in the staging environment and document the results for review.

4. Prepare professional deployment documentation, including performance metrics and test case reports.

5. Organize all project files and documents in a structured GitHub repository. Maintain a clear folder structure (e.g., `documents/`, `src/`, `public/`, etc.) for easy navigation and collaboration.

Step 1: Hosting Platform Setup:

1. **Choosing a Platform:**
    - I selected **Vercel** as my hosting platform because it's easy to use for Next.js applications and offers quick deployment.
    - Alternative options like **Netlify** or advanced platforms like **AWS** and **Azure** were considered, but Vercel was the best choice for this project.
2. **Connecting the Repository:**
    - I linked my GitHub repository to Vercel through its dashboard.
    - Configured the build settings with the following values:
        - **Build Command:** npm run build.
        - **Output Directory:** .next.
        - I also verified that deployment scripts were properly configured in package.json for smooth deployment.

Step 2: Configuring Environment Variables:

1. **Creating a .env File:**

I created a .env file locally to store sensitive information securely. The file contains the following variables:

NEXT_PUBLIC_SANITY_PROJECT_ID=your_project_id

NEXT_PUBLIC_SANITY_DATASET=production

API_KEY=your_api_key

The .env file was added to the .gitignore file to avoid committing sensitive data to the repository.

2. **Uploading Environment Variables to Vercel:**

    - I logged into the Vercel dashboard and added the environment variables under the **Environment Settings** section.
    - The variable names were double-checked to ensure they matched the ones used in my code.

Step 3: Deploying to Staging:

1. **Deploying the Application:**
    - I triggered the first deployment to a **staging environment** through Vercel.
    - The build process completed successfully without errors.
2. **Validating Deployment:**

- I accessed the staging URL provided by Vercel and performed an initial check:
    - Verified navigation between pages.
    - Tested API calls to ensure they returned the correct data.
    - Checked the layout to confirm proper rendering.

Step 4: Staging Environment Testing:

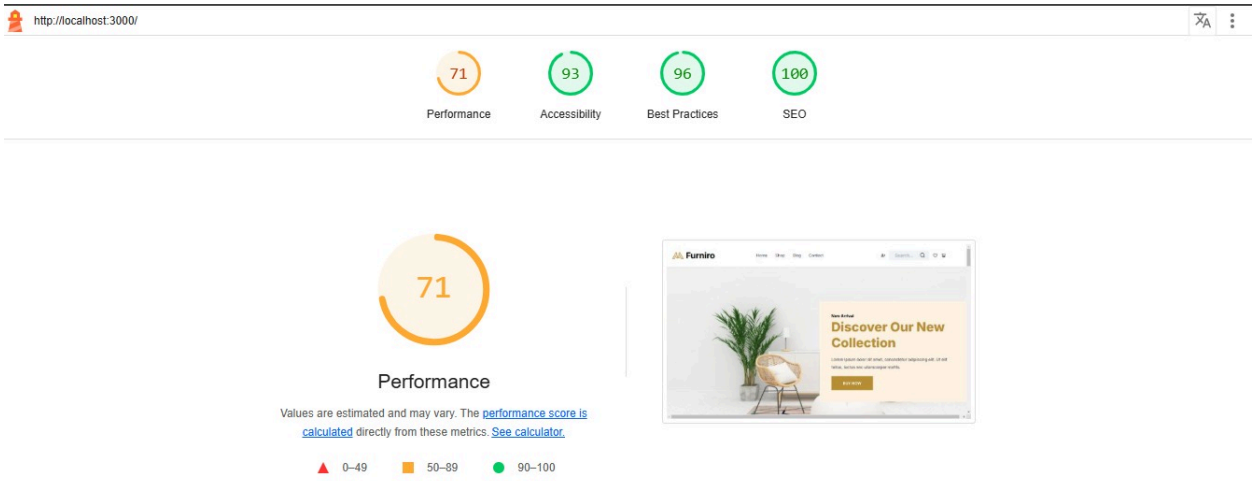
1. **Testing Types:**

- I performed the following tests on the staging environment:
    - **Functional Testing:** Ensured features like product listing, search, and cart operations worked as expected.
    - **Performance Testing:** Used **Lighthouse** to measure speed, responsiveness, and overall performance.
    - **Security Testing:** Validated that all API communications were secure, and input fields handled invalid data gracefully.

2. Test Case Report:

Test Case ID	Test Case Description	Steps	Expected Result	Actual Result	Severity Level	Assigned To	Remarks
TC001	Validate product listing page	Open products page > Verify products	Products Display Correctly	Product Listings Appear Perfectly	Low	-	No Bugs Detected
TC002	Test API error handling	Disconnect API > Refresh Page	Display Error Notification on UI	Display Error Notification on UI	Low	-	Respond Appropriately
TC003	Check Cart Functionality	Add Item to Cart > Confirm Cart Items	Cart Updates to Show New Addition	Cart Update as Expected	Medium	-	Executed Perfectly
TC004	Check Out Functionality	Add Item to Cart > Confirm Cart Items	Show Products On Cart	Show Products On Cart	Medium	-	Executed Perfectly
TC005	Check Search Bar	Search Items if match shows on screen	Show Items Matching User Search	Show Items Matching User Search	High	-	No issue Found
TC006	Ensure Responsiveness On Mobile	Inspect > Toolbar Options > Pick Mobile Device	Showing Content Based on Screen Size	Showing Content Based on Screen Size	Medium	-	Full Responsive
TC007	Individual Product Detail Page	Open Product Page > Click to any product card	Product Page Opens Successfully	Product Page Opens Successfully	Low	-	Done Successfully

3. Performance Testing:



Step 5. Documentation:

- Structured all project files in an organized GitHub repository for clarity and accessibility.
- Created a professional “ README.md ” file to summarize project activities, deployment steps, testing results, and key outcomes seamlessly.

Organizing Project Files:

src/ - Contains the main application source code, including components, pages, styles, and utility functions required for the project's functionality.

public/ - Stores static assets like images, icons, fonts, and other files accessible directly via the browser.

documents/ - Organizes all reports, test cases, deployment documentation, and other related resources for easy reference.

README.md - Provides a concise summary of the project structure, deployment steps, and key outcomes.

Final CheckList:

Deployment Preparation:

- ✔

Staging Environment Testing:

- ✔

Documentation:

- ✔

Form Submission:

- ✔

Final Review:

- ✔

Prepared By: Myhammad Nehal Nadeem