Hackathon: 3 - Day 6

Deployment Preparation and Staging Environment Setup

Objective:

The objective of Day 6 was to prepare the **OAK&TEAK** marketplace for deployment by setting up a staging environment, configuring hosting platforms, and ensuring the application was ready for customer-facing use. This phase involved implementing industry-standard practices for managing different environments such as **TRN**, **DEV**, **SIT**, **UAT**, and **PROD** to ensure a smooth and efficient deployment process.

Key Learning Outcomes:

Staging Environment Setup:

- **Selected Hosting Platform:** Chose Vercel as the hosting platform for deployment, based on its seamless integration with Next.js and its powerful performance features.
- **Repository Integration**: Connected the GitHub repository to the selected hosting platform to automate the deployment process and ensure continuous integration.
- **Build and Deployment Configuration:** Configured the build settings to ensure the staging builds ran smoothly, optimizing for efficient deployment cycles.
- **Environment Variable Management:** Set up secure environment variables within the hosting platform to handle sensitive data such as API keys and authentication tokens without exposing them in the codebase.

Professional Environment Management Stages

1. **TRN (Training) Environment**
    - **Definition:** The TRN environment is used for onboarding new developers, teams, or users. It is a safe space where individuals can practice, learn, and familiarize themselves with the application and its features without affecting real data or production systems.
    - **Purpose:**

- Used for training and practicing.
- Allows for safe experimentation and learning.
- Does not affect live systems or data.

2. DEV (Development) Environment

- **Definition:** The DEV environment is where developers write and test their code locally. This environment is typically set up on developers' machines or a shared server. It is used for building features, fixing bugs, and testing new code before it is merged into other environments.
- **Purpose:**
  - Developers work on coding and feature development.
  - This environment is frequently updated with the latest changes.
  - Contains the latest, untested code that is not ready for public use.

3. SIT (System Integration Testing) Environment

- **Definition:** The SIT environment is where different parts of the system (e.g., front-end and back-end services) are integrated and tested to ensure they work together as expected. This is where integrations with external systems and APIs are validated.
- **Purpose:**
  - Validates integration points between systems.
  - Ensures all parts of the application interact correctly with each other.
  - Tests interfaces, external services, and data exchanges.

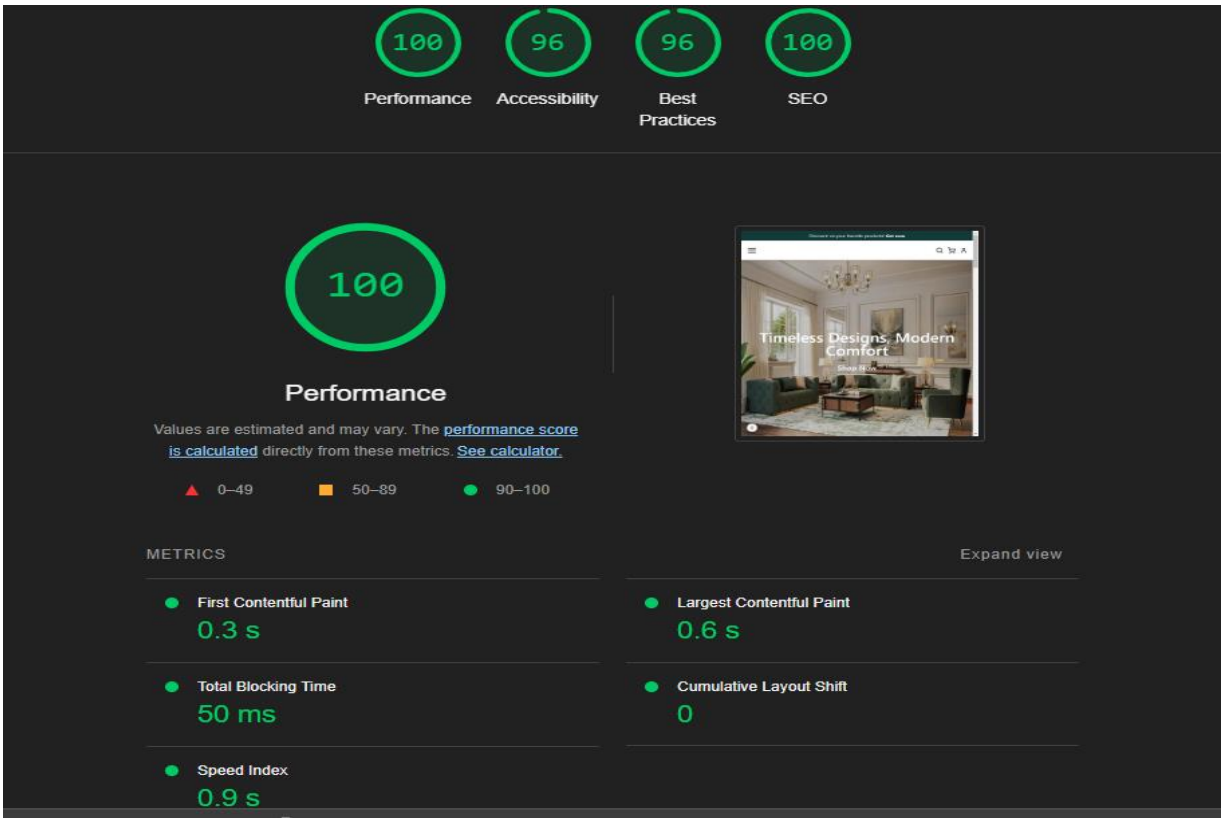
4. UAT (User Acceptance Testing) Environment

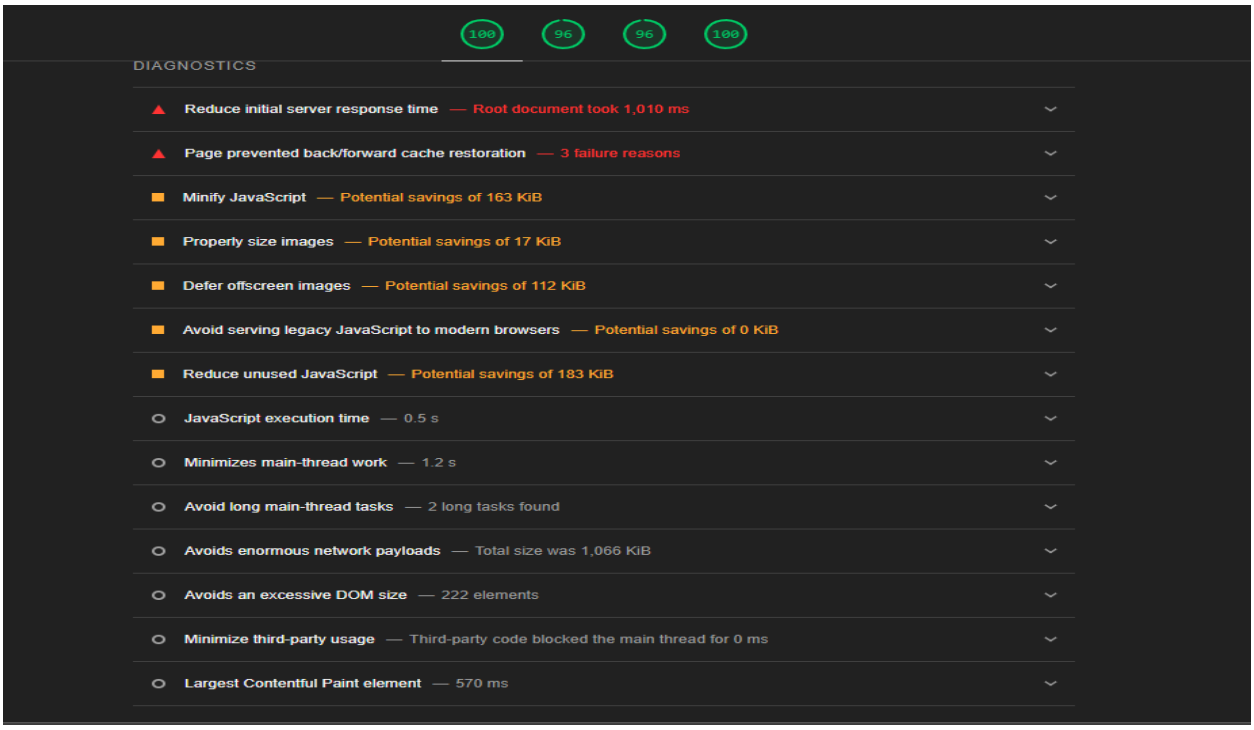
- **Definition:** The UAT environment is where business users or stakeholders test the application to ensure it meets their needs and expectations. This is the final validation step before the software is moved to production. In this stage, users verify if the system behaves as intended.
- **Purpose:**
  - Conducted by end-users or business representatives.

- Ensures the application meets the business requirements.
- Verifies functionality and usability from a user perspective.
- Identifies any issues before production deployment.

5. **PROD (Production) Environment**
    - **Definition:** The PROD environment is the live environment where the application is deployed and accessed by end users. This is the final stage in the deployment pipeline, where the application is fully operational and serves real customers. It must be stable, secure, and perform well.
    - **Purpose:**
        - The live, customer-facing environment.
        - Contains the stable, tested version of the application.
        - Should have high availability, performance, and security for real-world use.

Performance report by LightHouse





Test Case Report:

Test Case ID	Case Description	Test Steps	Expected Result	Actual Result	Remarks	Severity Level	Status
TC001	Validate product listing page	Verify products	Products displayed correctly	Products displayed correctly	Passed	Low	No issues found
TC002	Test filter functionality	Apply filter by category	Filtered products are displayed correctly	Filtered products shown as expected	Passed	Low	no issue found
TC003	Check cart functionality	Add product to cart	Cart updates with added product	Cart updates as expected	Passed	Low	Works as expected
TC004	Validate 'Add to Cart' button with stock validation	Add product to cart > Verify button state when out of stock	'Add to Cart' button is disabled when stock is unavailable	'Add to Cart' button is disabled	Passed	low	Stock validation working

TC005	Test increment button functionality	Add product to cart > Increment quantity beyond stock limit	Increment button is disabled when stock limit exceeded	Increment button disabled	Passed	Medium	Increment button functioning correctly
TC006	Validate checkout page	Proceed to checkout > Verify address field	Address field displays correctly	Address field displayed as expected	Passed	low	No issues found
TC007	Validate order summary page	Proceed to order summary > Verify details	Order details are displayed correctly	Order details displayed correctly	Passed	low	No issues found