**HACKATHON 3 (DAY 5)**

**TESTING AND ERROR HANDLING:**

Handle response from the fields and data processing, get data from the API and backend like sanity CMS.

**DATA LOADING:**

Add loading component to show on the screen in place of data while data rendering.

**SECURITY OF KEYS:**

Secure the fields of input and API keys and tokens from the hackers. Add requires and security validation for input fields and use all the API keys and tokens in env file

**OPTIMIZED PERFORMANCE:**

Maintain the performance of website through faster load times of data and images and give smooth interactions. Next js provide pre build tags for images and link which help to run smoothly

**RESPONSIVE DESIGN:**

Responsive Design is the key feature for any website. Users use multiple devices with variable sizes. Tailwind help to maintain responsiveness of a website

**Website Performance Report**

### ****Device-Specific Insights****

#### **Desktop**

* **Performance**: Similar to Mobile
  + **FCP**: **0.2s**
  + **LCP**: **1.6s**
  + **TBT**: **240ms**
  + **CLS**: **0.015**
  + **SI**: **2.9s**

#### **Core Web Vitals**

* **Largest Contentful Paint (LCP)**: 1.6s (Good)
* **Cumulative Layout Shift (CLS)**: 0.015 (Excellent)
* **Total Blocking Time (TBT)**: 240ms (Needs improvement)

### ****Key Observations and Recommendations****

#### **Performance Issues**

1. **Serve Images in Next-Gen Format**
   * **Potential Savings**: **507 KiB**
   * Use formats like **WebP** or **AVIF** to reduce image sizes without compromising quality.
2. **Preload Largest Contentful Paint Image**
   * Preload the LCP element to improve loading times. This ensures critical content loads sooner.
3. **Properly Size Images**
   * **Potential Savings**: **1,845 KiB**
   * Resize images to match the displayed dimensions.
4. **Reduce Unused CSS**
   * **Potential Savings**: **16 KiB**
   * Remove or defer unused CSS rules. Use tools like PurgeCSS.
5. **Reduce Unused JavaScript**
   * **Potential Savings**: **21 KiB**
   * Remove or split unnecessary JavaScript files to reduce load time.
6. **Avoid Enormous Network Payloads**
   * Total size: **6,351 KiB**
   * Compress files and enable gzip or Brotli compression for better performance.
7. **Minimize Main-Thread Work**
   * **1.5s** of main-thread blocking work was found. Optimize by breaking down large tasks into smaller ones.

#### **Accessibility Issues**

1. **Contrast Ratio**
   * Background and foreground colors do not have sufficient contrast. Use tools like Contrast Checker to ensure compliance.
2. **Improper List Structure**
   * Ensure all <li> elements are nested within <ul>, <ol>, or <menu> parent tags.

#### **Best Practices**

* Your site scores **100/100** on Best Practices, showing no critical issues in trust, safety, or best coding practices.

#### **SEO**

1. **Content Best Practices**
   * Ensure meta tags, headers, and structured data are correctly set up to improve visibility.
   * Consider using a sitemap and robots.txt file.
2. **Core Web Vitals**
   * These metrics (e.g., LCP and CLS) impact search rankings. Maintain and improve them for better SEO performance.

