# Day 6: Deployment Preparation and Staging Environment Setup

**Key Achievements:**

✅ **Deployment Strategy:**

- **Successfully deployed the Furniro website on Vercel for seamless and high-performance hosting.**
- **Integrated the GitHub repository to enable Continuous Integration/Continuous Deployment (CI/CD) for automatic updates.**

✅ **Environment Variables:**

- **Configured sensitive credentials like API keys in a .env file for secure access management.**
- **Uploaded the `.env` file securely to Vercel to ensure smooth deployment.**

🔹 **Example .env File:**

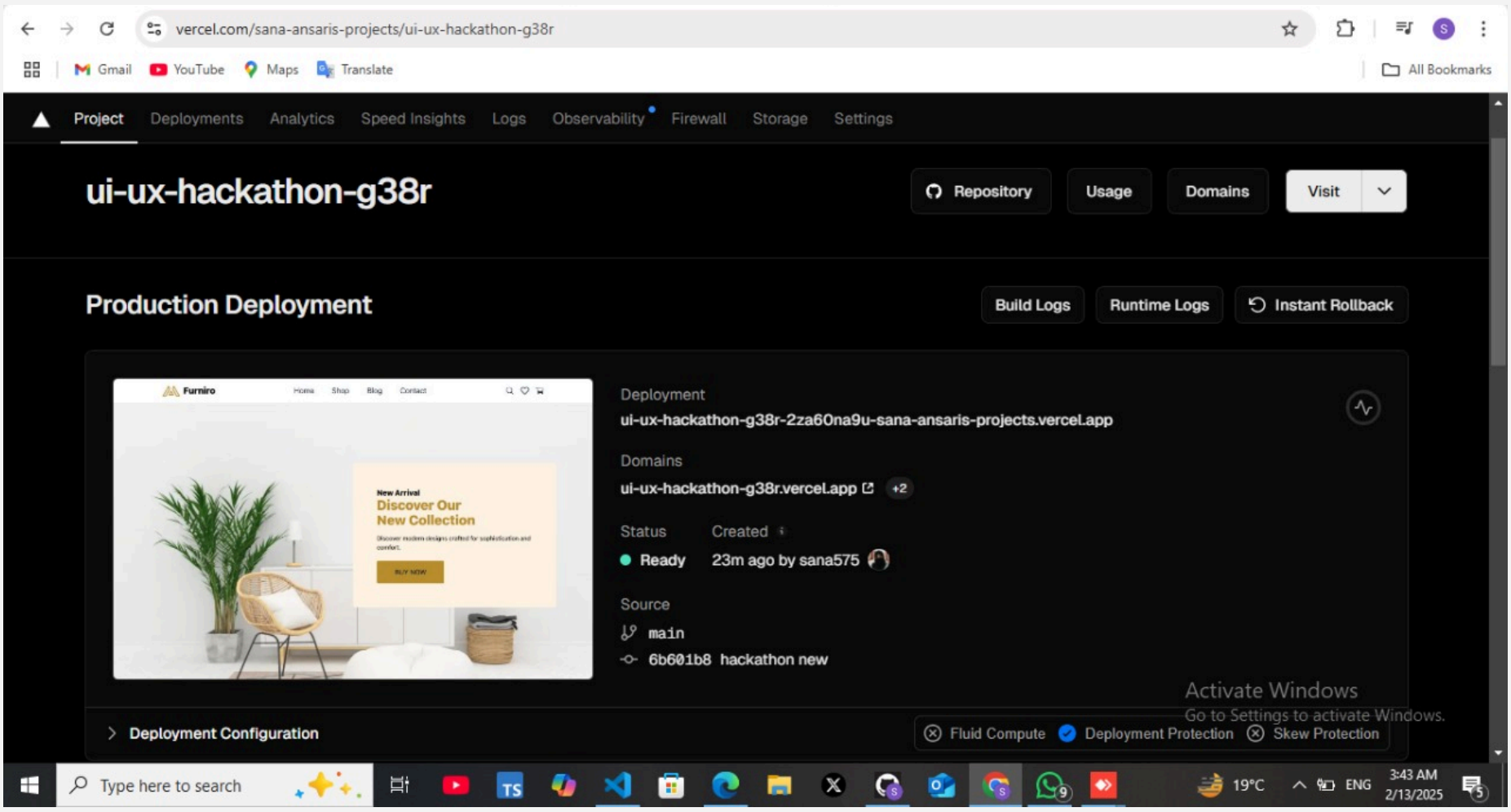
```
NEXT_PUBLIC_SANITY_PROJECT_ID=your_project_id
NEXT_PUBLIC_SANITY_DATASET=production
SANITY_API_TOKEN=your_api_key
```

✅ **Staging Environment Setup:**

- **Deployed a staging version to replicate a production-like experience for thorough testing.**

✅ **Testing & Optimization:**

- **Functional Testing: Verified critical workflows, including product listings, cart operations, and checkout process.**
- **Performance Testing: Assessed loading speed, responsiveness, and user experience using GTmetrix.**




## ● Documentation:

**○ Prepared a professional README.md file summarizing the project structure, setup instructions, and deployment steps.**

**○ Organized the GitHub repository into structured folders:**

**■ src/: Source code for the application.**

**■ public/: Static assets and images.**

**■ documents/: Deployment instructions, test reports, and project-related documents.**

## 1: Secure Configuration of Environment Variables

✅ **Setup: Store all sensitive data, such as API keys and database credentials, in a .env file to maintain security.**

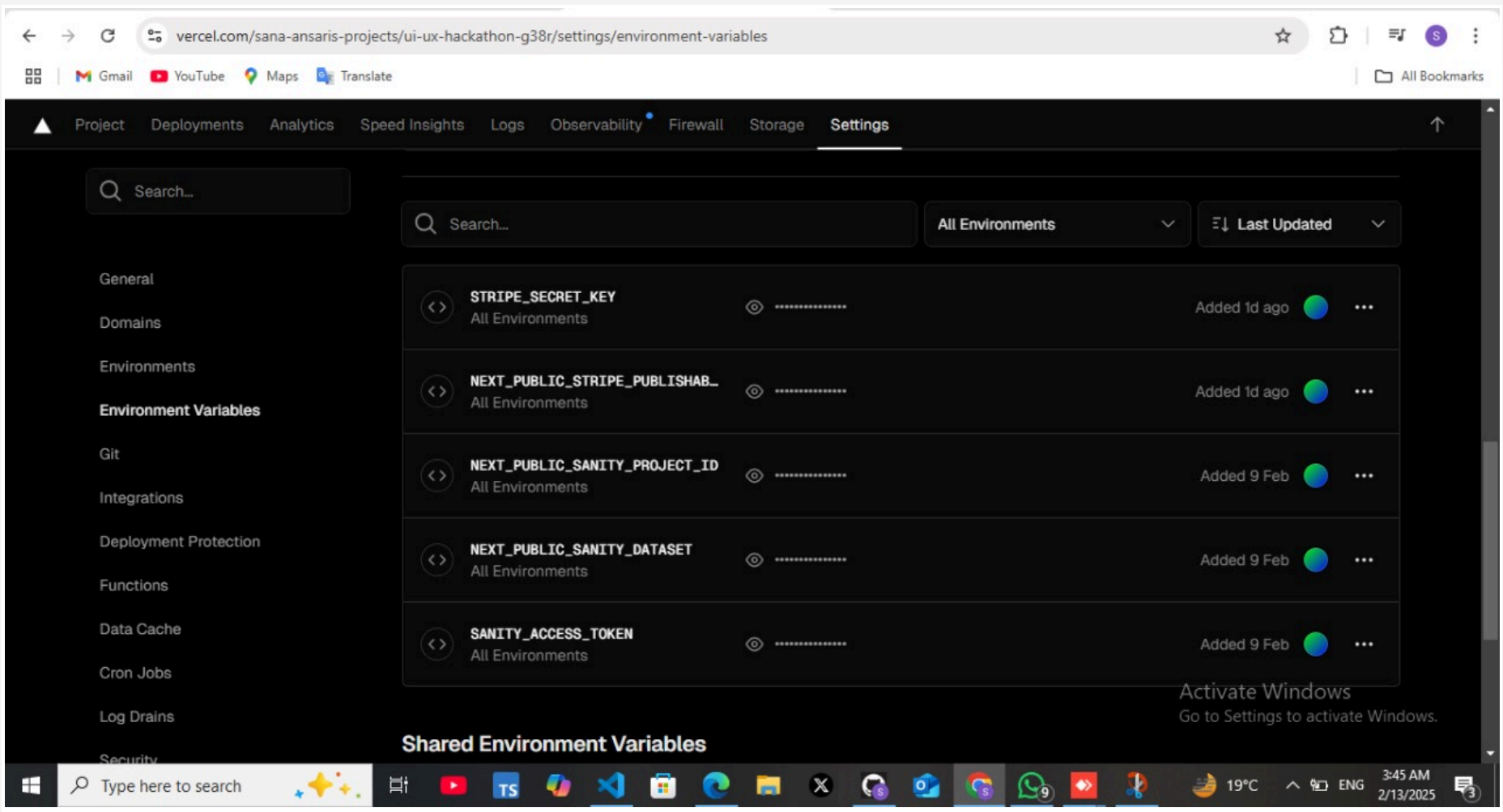
✅ **Deployment: Configure environment variables securely on platforms like Vercel, ensuring they are not hardcoded in the codebase.**

✅ **Best Practices:**

- **Exclude `.env` files from version control using .gitignore to prevent accidental exposure in repositories.**
- **Follow security protocols to safeguard sensitive information in collaborative development.**

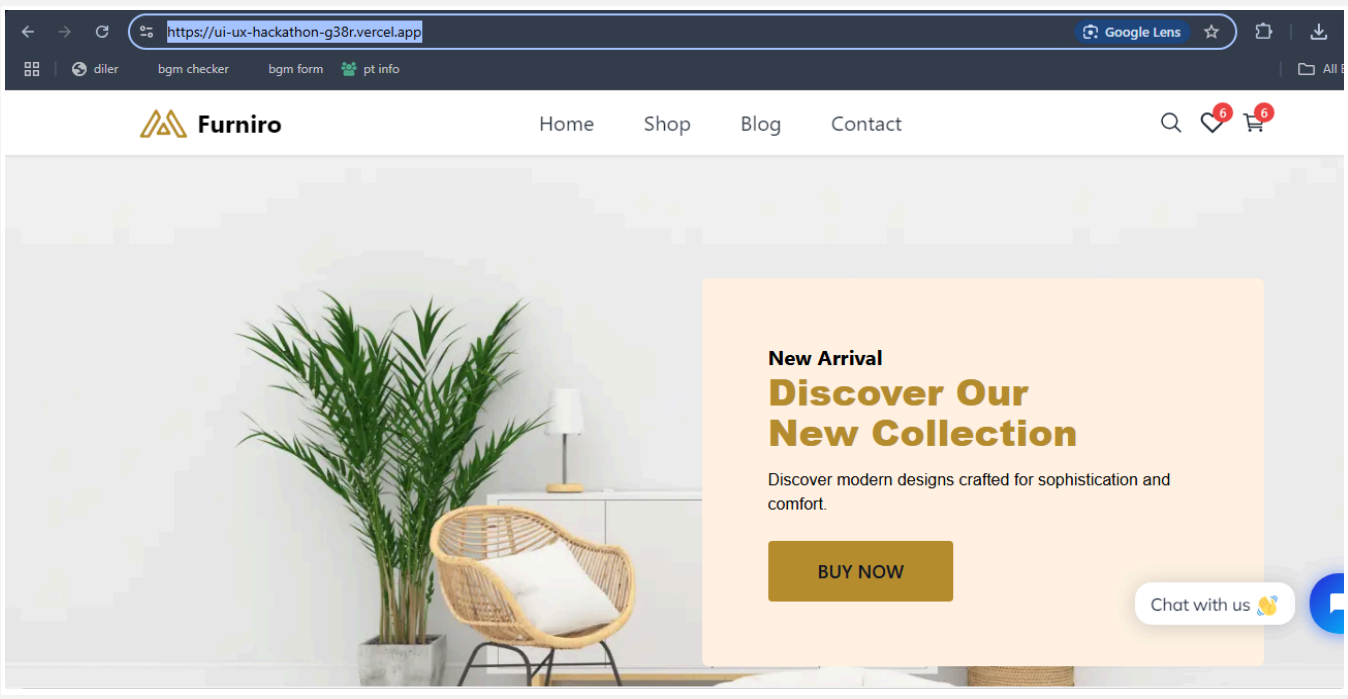
✅ **Dynamic Access: Utilize environment variables dynamically within your application to improve security, scalability, and flexibility.**

✅ **Regular Maintenance: Periodically review and rotate sensitive keys to prevent unauthorized access and reduce potential security risks.**




## 2: SSL and HTTPS Enablement

- **Purpose: Use SSL/TLS to encrypt traffic and ensure secure communication between the server and client.**
- **Automatic Configuration: Hosting platforms like Vercel automatically enable HTTPS for custom domains.**
- **Verification: Ensure all website URLs are https:// enabled, providing user trust and preventing data interception.**
- **Benefits: Strengthens data privacy, enhances user confidence, and complies with security standards.**



# 3: Codebase Security & Repository Management

✅ **Private Repositories: Keep the Furniro production repository private to protect sensitive code and proprietary data from unauthorized access.**

✅ **Branching Strategy: Maintain a structured workflow by organizing branches efficiently:**

- **Main Branch: Used for stable production releases.**
- **Staging Branch: Dedicated for testing and pre-deployment validation.**

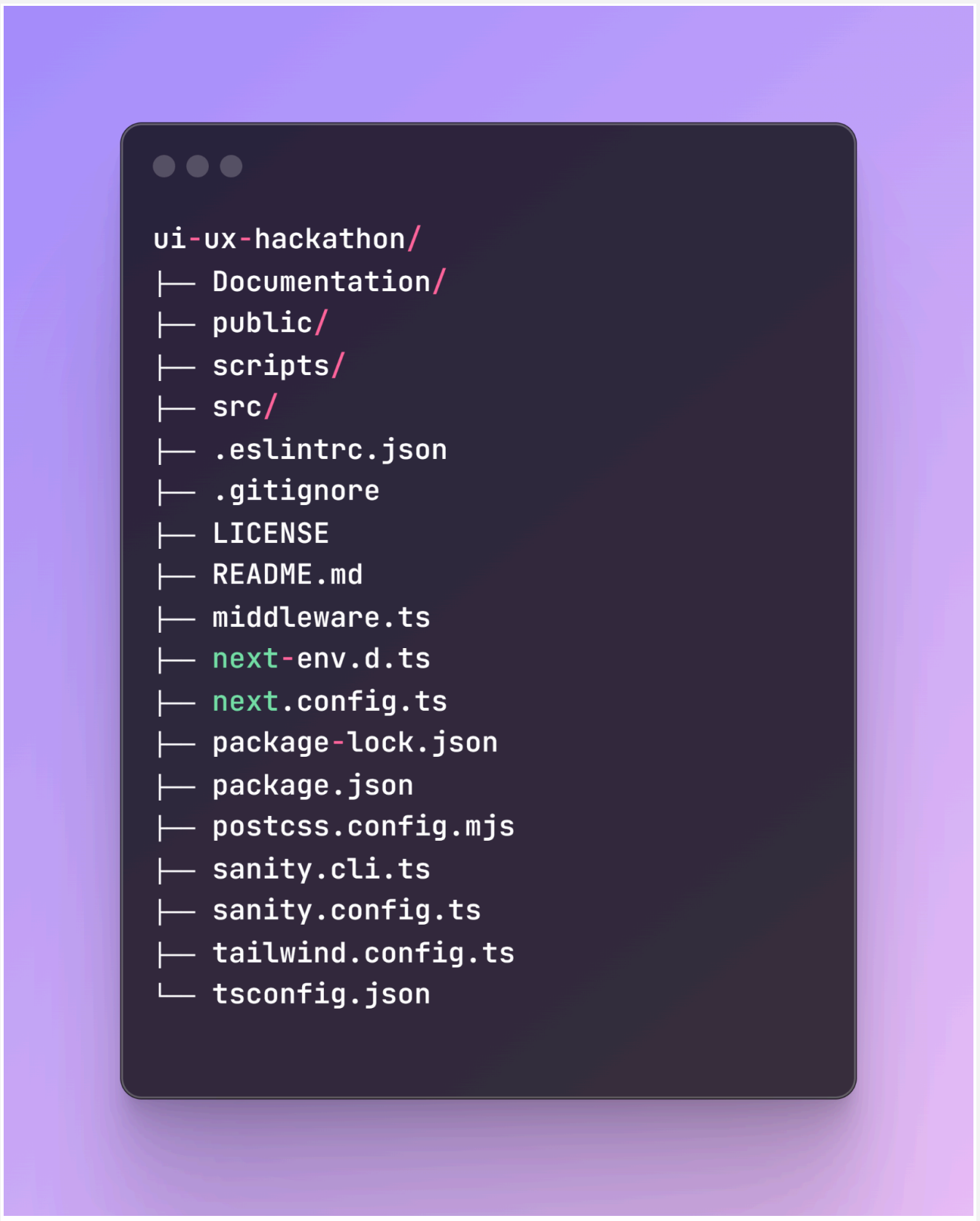
✅ **Access Control:**

- **Grant repository access only to authorized team members to maintain security.**
- **Implement Two-Factor Authentication (2FA) for enhanced protection against unauthorized logins.**

✅ **Comprehensive Documentation:**

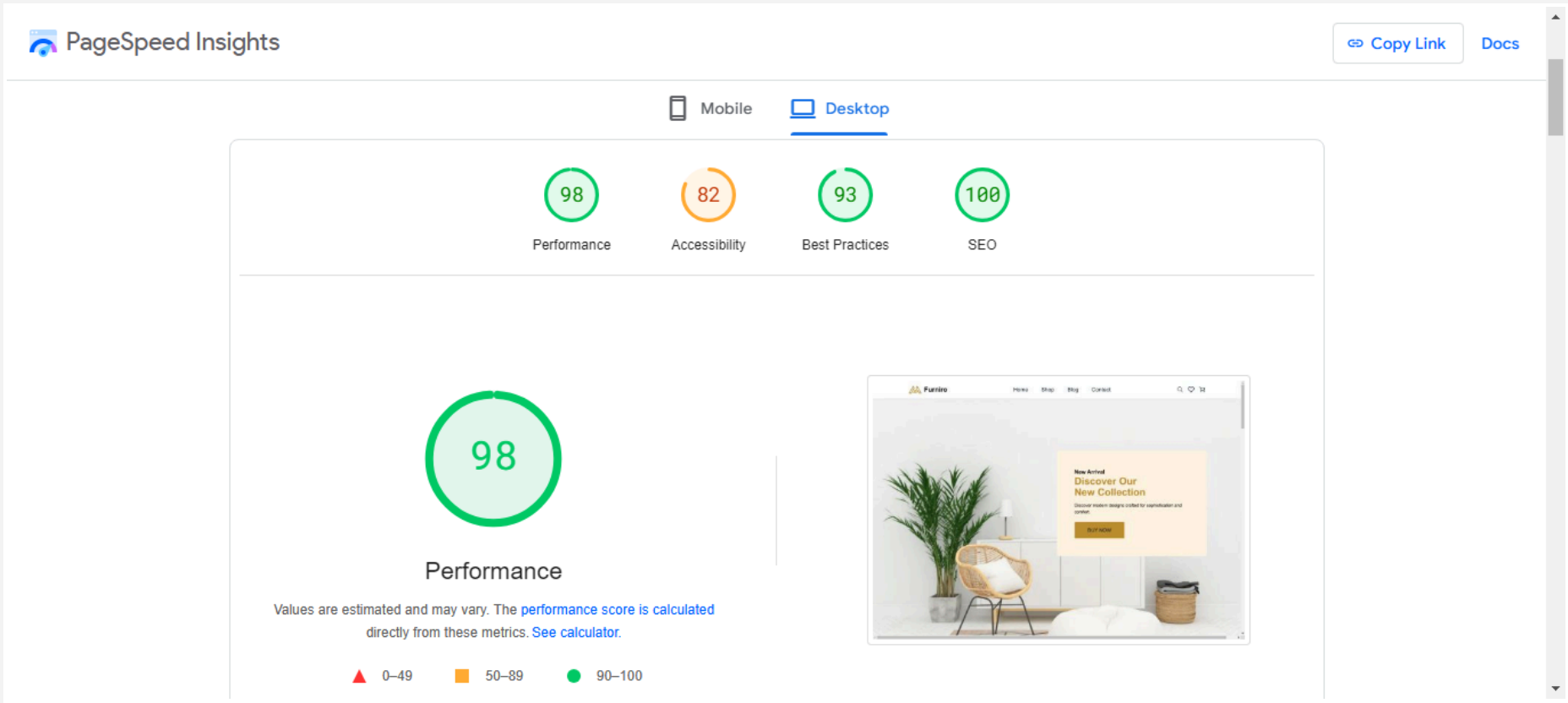
- **Maintain detailed guides on deployment, rollback procedures, and repository usage to ensure seamless collaboration and future scalability.**

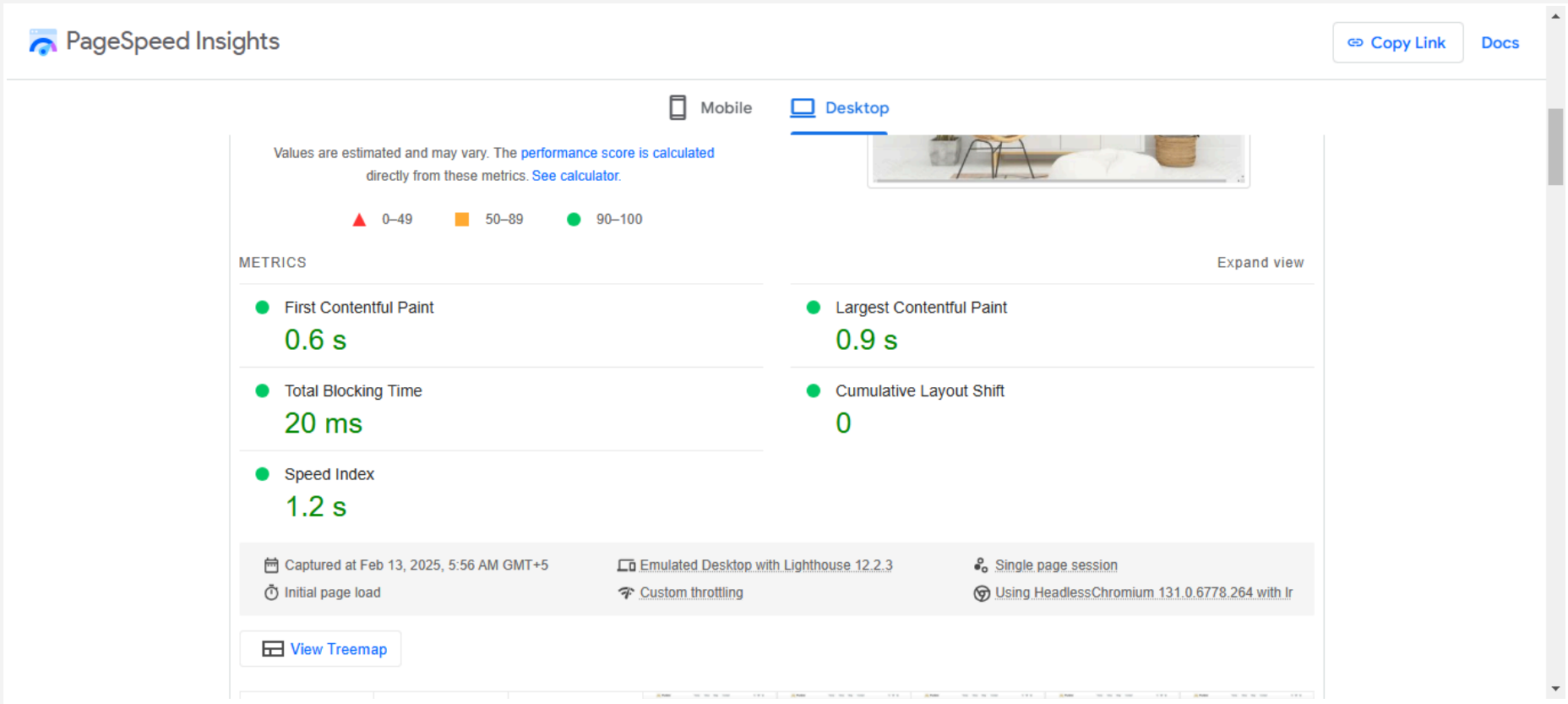
## GITHUB FOLDER STRUCTURE



# 4: Performance Optimization

- **Image Optimization: Use tools like TinyPNG or ImageMagick to compress and resize images, ensuring faster load times without compromising quality.**
- **API Efficiency: Reduce response times by implementing caching strategies, optimizing database queries, and limiting redundant API requests.**
- **Performance Analysis: Utilize tools like Lighthouse, GTmetrix, and WebPageTest to assess and improve key performance metrics such as First Contentful Paint (FCP) and Time to Interactive (TTI).**
- **Lazy Loading: Enhance page speed by implementing lazy loading for images, videos, and other assets to defer loading until needed.**



PageSpeed Insights

Copy Link Docs

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View Treemap

Show audits relevant to: All FCP LCP TBT

DIAGNOSTICS

- Reduce unused JavaScript — Potential savings of 145 KiB
- Serve static assets with an efficient cache policy — 4 resources found
- Initial server response time was short — Root document took 540 ms
- JavaScript execution time — 0.4 s
- Avoids enormous network payloads — Total size was 981 KiB
- Avoids an excessive DOM size — 310 elements

PageSpeed Insights

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Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so manual testing is also encouraged.

NAMES AND LABELS

- Buttons do not have an accessible name

PageSpeed Insights

Copy Link Docs

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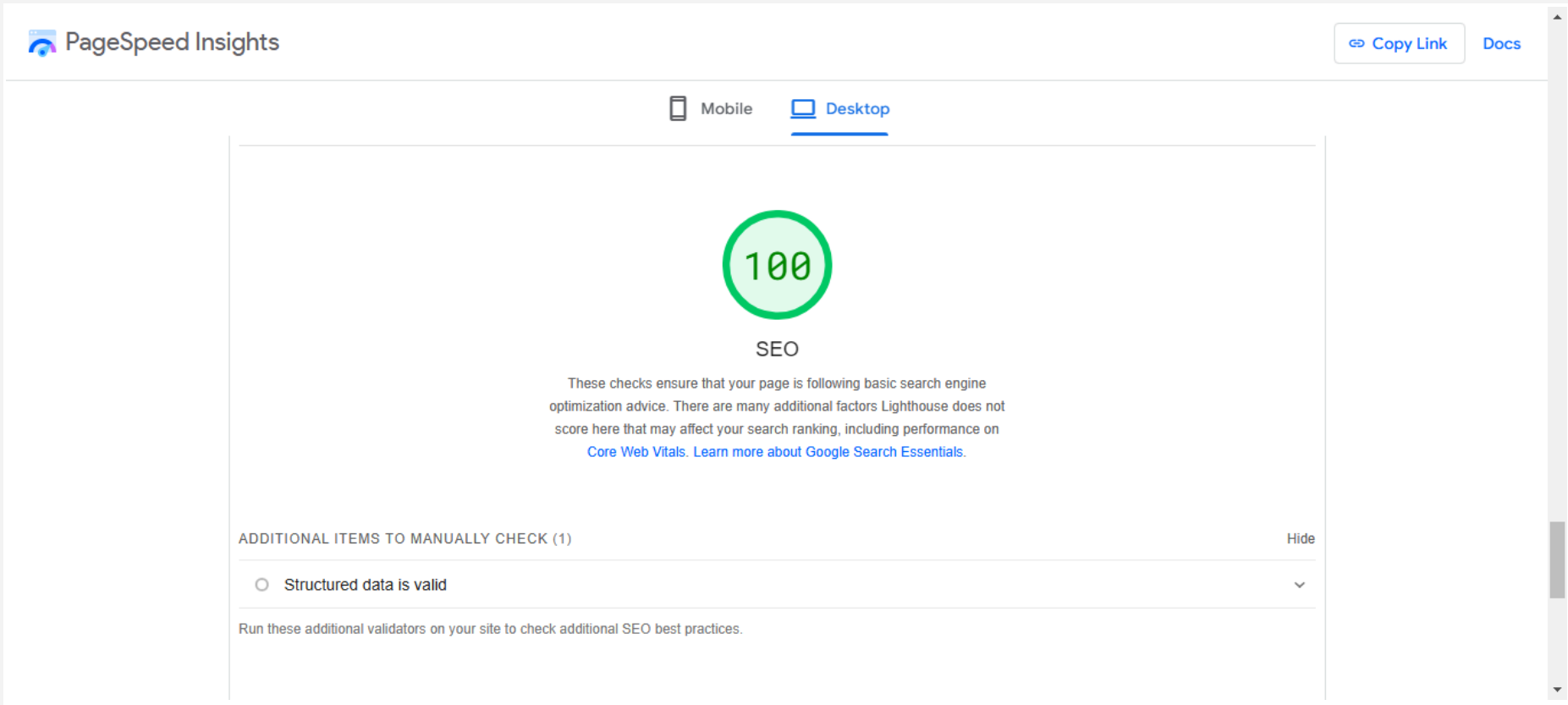
Best Practices

USER EXPERIENCE

- Displays images with incorrect aspect ratio

GENERAL

- Browser errors were logged to the console




# 5: Monitoring and Analytics Tools

- **User Analytics: Implement Google Analytics to track user interactions, session durations, and traffic sources, enabling data-driven improvements.**
- **Error Tracking: Use Sentry for real-time error monitoring and debugging to maintain a smooth user experience.**
  - **Installation Command: `npm install @sentry/nextjs`**
- **Performance Monitoring: Leverage Pingdom and UptimeRobot to monitor site uptime, detect performance bottlenecks, and ensure a seamless browsing experience.**
- **Continuous Optimization: Regularly analyze analytics data to enhance system stability and user engagement.**

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## Conclusion

**The Furniro Furniture Website project has successfully evolved from conceptualization to staging deployment. With a well-structured GitHub repository, optimized frontend components, and robust testing strategies, the platform is now prepared for production release.**

### Next Steps

1. **Resolve Remaining Issues: Address any bugs or inconsistencies identified during staging to ensure a flawless launch.**
2. **Live Monitoring & Optimization: Analyze user feedback and performance metrics to refine the user experience.**
3. **Future Enhancements: Plan for scalability by incorporating AI-driven recommendations, multi-language support, and personalized user experiences.**

**This marks a major milestone in the Furniro Furniture Website development, setting the stage for future growth and innovation! 🚀🎉**

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# Acknowledgment & Appreciation

**We express our sincere gratitude to all faculty members, mentors, and organizers for their constant support, expert guidance, and encouragement throughout this journey. Your insights and feedback have been invaluable in shaping this project.**

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**This project has been a remarkable learning experience, and we deeply appreciate the efforts of our team and contributors. Thank you for your dedication and belief in our vision. Here's to many more successes ahead! 🌟**

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