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Technical Report

Community Science Museum

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Word count

Summary: 250 | Main text:500

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1. Summary

This report details the design and development of the Community Science Museum Website, created as part of a semester project. The goal was to build an engaging and informative online presence, highlighting exhibits, events, and community involvement opportunities for diverse audiences, including children, teachers, and researchers.

While health challenges and time constraints limited the completion of all Figma prototypes, the project successfully integrated vibrant animations to appeal to children.
The position property in CSS presented challenges but provided valuable learning experiences.

Key features include: A responsive design adaptable to various devices. Engaging animations for younger audiences. Semantic HTML ensuring accessibility. Optimized images and WCAG-compliant colors. SEO-friendly metadata for all pages.

The report addresses challenges like consistent responsiveness and highlights solutions such as CSS media queries and reusable components. Lessons learned and future improvements are also discussed.

2. Body

2.1. Introduction

The **Community Science Museum Website** serves as a digital gateway to the museum, offering comprehensive information on exhibits, operating hours, events, and community involvement opportunities. The primary objectives were to:

- Design a responsive, user-friendly website for a broad audience.
- Adhere to best practices in web development, including accessibility and semantic HTML.
- Showcase museum exhibits and events in an engaging and visually appealing manner.
- Leverage animations to make the website more interactive and enjoyable for children.

This report explores the project's phases, challenges, and outcomes, reflecting on lessons learned and potential areas for improvement.

2.2. Main section of report

Prototype Design in Figma

The design process began with prototyping in **Figma**. Efforts focused on crafting a clean, modern, and responsive layout. While not all pages were prototyped due to time constraints, the initial designs guided the implementation phase. Colors and typography were selected with WCAG standards in mind to ensure accessibility and inclusivity.
Figma link:
https://www.figma.com/design/v6O8TFY0Ib5ICc2ktm7KJw/Semester-Project-1?node-id=0-1&t=ZIZj0QDDFJgzhxev-1

Development Phase:

The website was developed using **HTML** and **CSS**, emphasizing modularity and best practices. Key aspects included:

- **Semantic HTML:** Proper use of headings, sections, and landmarks to enhance accessibility.
- **Reusable CSS Components:** Application of the DRY principle to avoid redundancy and improve maintainability.
- **Responsive Design:** Extensive use of CSS media queries and a flexible grid system to adapt the layout for various screen sizes.

Responsive Design

The website was developed to be fully responsive, with breakpoints optimized desktop, and mobile devices. CSS media queries were used to ensure a seamless user experience across different screen sizes.

Challenges and Solutions:

- **Position Property:** Managing layout positioning was initially challenging but provided a deeper understanding of relative and absolute positioning in CSS.
- **Animations:** Simple yet engaging animations were implemented to make the website more appealing to children.
- **Image Optimization:** Images were pre-optimized to balance quality and performance.
- Maintaining consistent design while implementing accessibility standards required careful attention to detail

Accessibility
Accessibility features included:

- WCAG-compliant color contrasts.
- Alt text for images.
- Semantic HTML tags for better screen reader support.

2.3. Conclusion

Despite the challenges faced, the project achieved its primary goals of creating an accessible, responsive, and visually engaging website. The inclusion of animations and the use of semantic HTML contributed significantly to the project's success. While the Figma prototyping phase was incomplete, the lessons learned during development have provided valuable insights for future projects. Recommendations include completing all design prototypes before implementation and exploring advanced CSS frameworks to streamline the development process.

3. References

- Community Science Museum Website:
  GitHub Project:
  https://github.com/2862aslan/Semester-Project1-Cuma_Aslan.git

  https://2862aslan.github.io/Semester-Project1-Cuma_Aslan/

- Figma Prototype:
- https://www.figma.com/design/v6O8TFY0Ib5ICc2ktm7KJw/Semester-Project-1?node-id=0-1&t=ZIZj0QDDFJgzhxev-1

  Icons

- Facebook icon: https://fontawesome.com/icons/facebook?f=brands&s=solid
- Youtube icon: https://fontawesome.com/icons/youtube?f=brands&s=solid
- Whatsapp icon: https://fontawesome.com/icons/square-whatsapp?f=brands&s=solid
- Instagram icon: https://fontawesome.com/icons/square-instagram?f=brands&s=solid

Images

https://images.pexels.com/photos/7188802/pexels-photo-7188802.jpeg?auto=compress&cs=tinysrgb&w=1260&h=750&dpr=1
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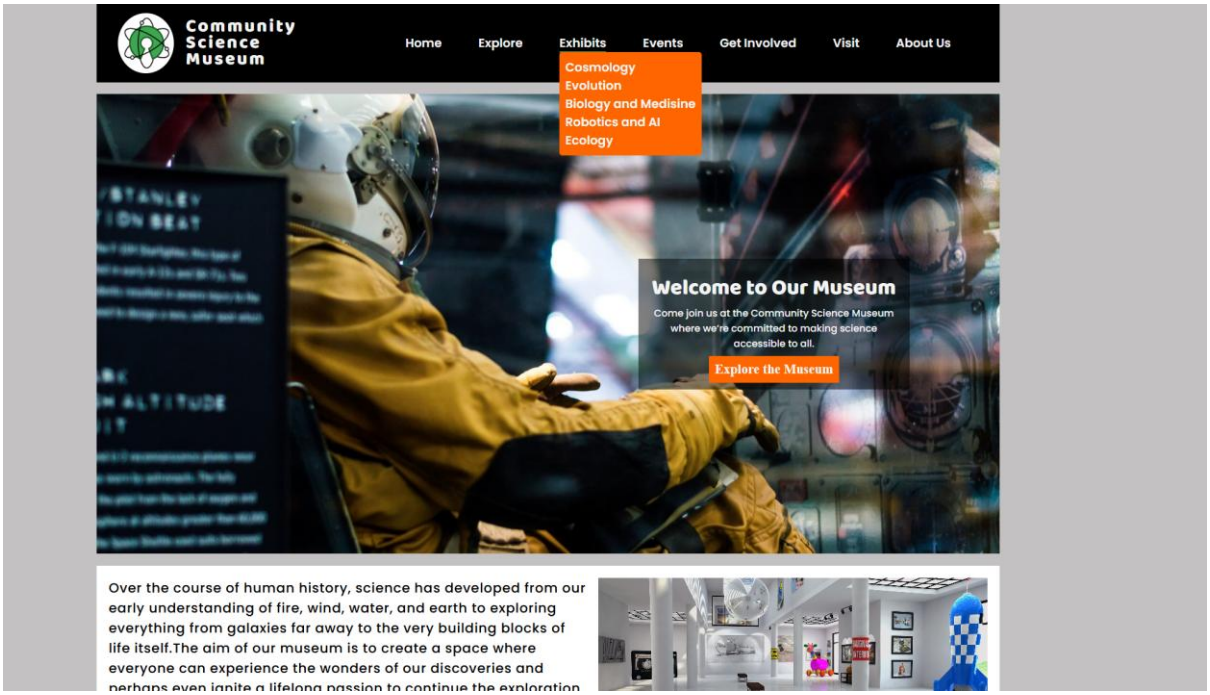
4. Acknowledgements

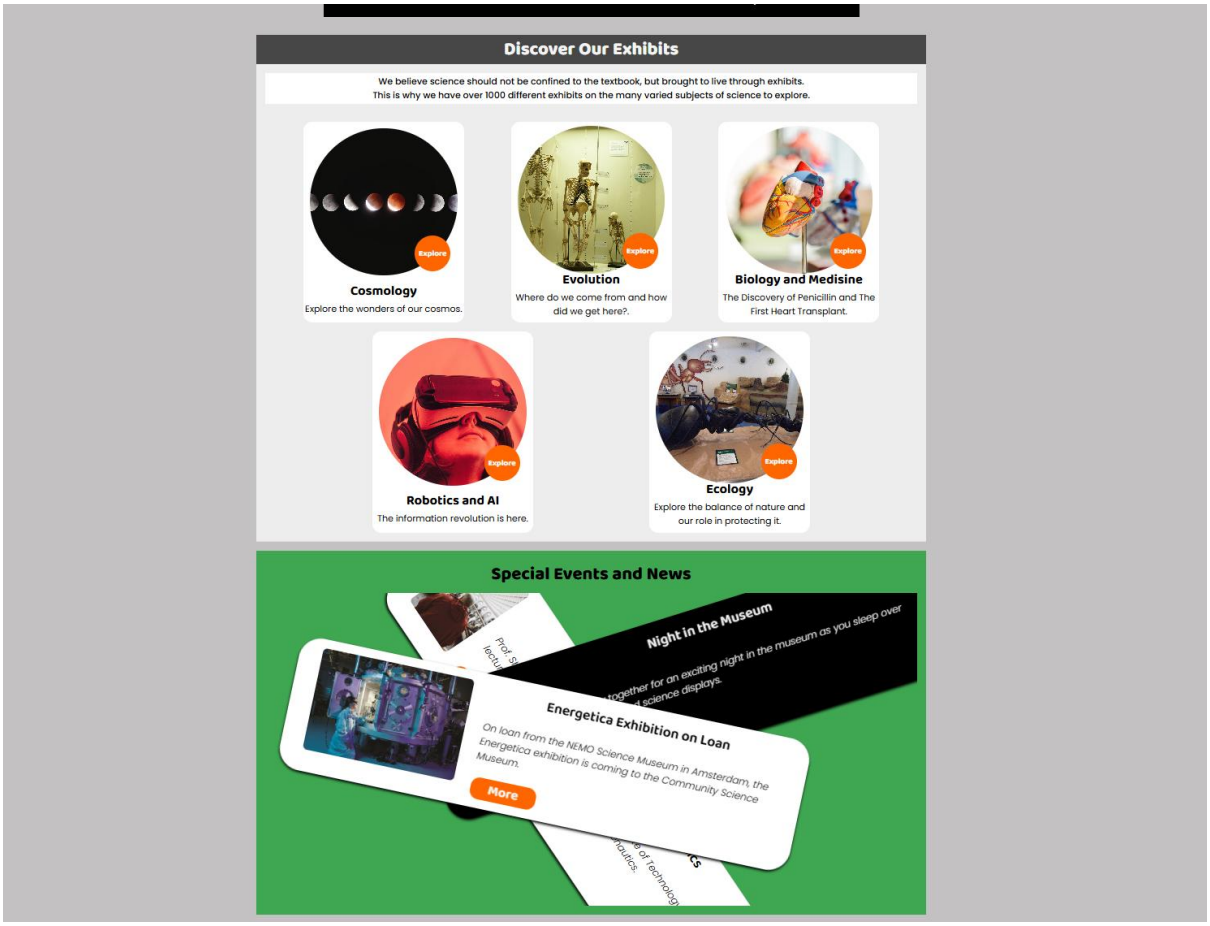
I would like to thank my instructor for their guidance and suppoet throughout this project. Additionally, I appreciate the resources provided by the course, which were instrumental in completing this work.

5. Appendices

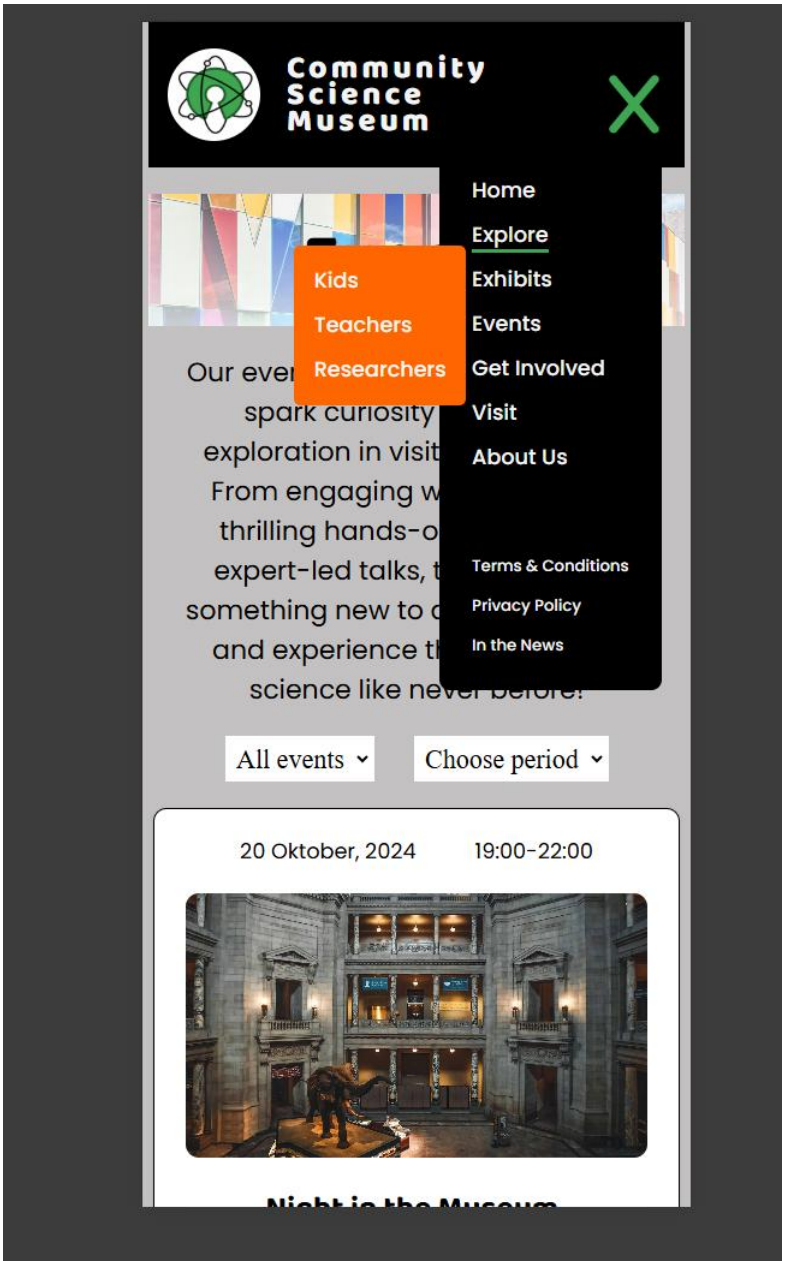


This screenshot showcases the homepage of the Community Science Museum website. The design emphasizes accessibility and user engagement, featuring a vibrant hero section with a call-to-action button, a dropdown menu for

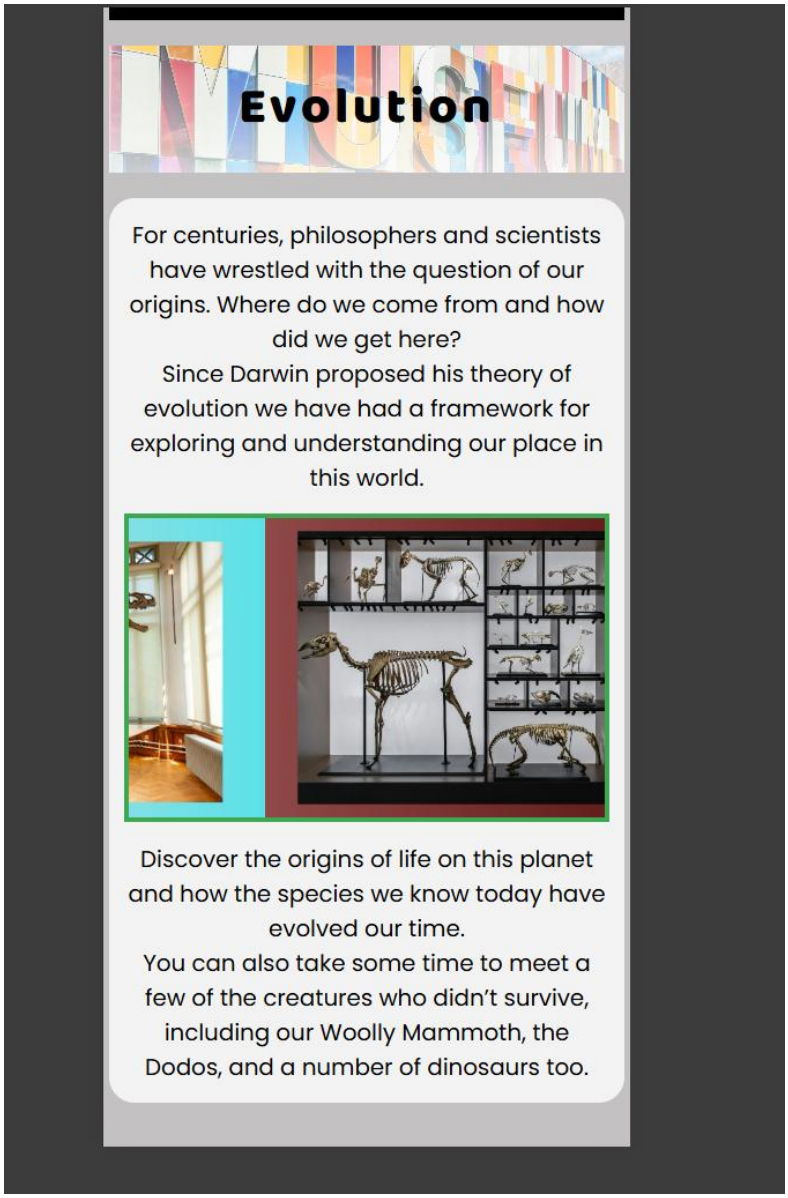
easy navigation, and an inviting description of the museum's purpose and offerings.



This section demonstrates the exhibits and events pages of the Community Science Museum website. The exhibits page employs a responsive flexbox layout to neatly showcase categories like Cosmology and Ecology, each with visually engaging content. Meanwhile, the events page features dynamic animations to captivate the audience.



The website features a fully responsive design, ensuring an optimal user experience on various devices, including mobile, tablet, and desktop. The collapsible navigation menu adapts seamlessly for smaller screens, making navigation intuitive and accessible. Dropdown menus for categories like 'Explore' are interactive and functional, even in the mobile view



The website features five exhibit categories: Cosmology, Evolution, Biology and Medicine, Robotics and AI, and Ecology. Each page includes interactive image slideshows and descriptions to enhance visitor engagement and provide visual context for the exhibits.