Capstone Project
Document Template

Introduction

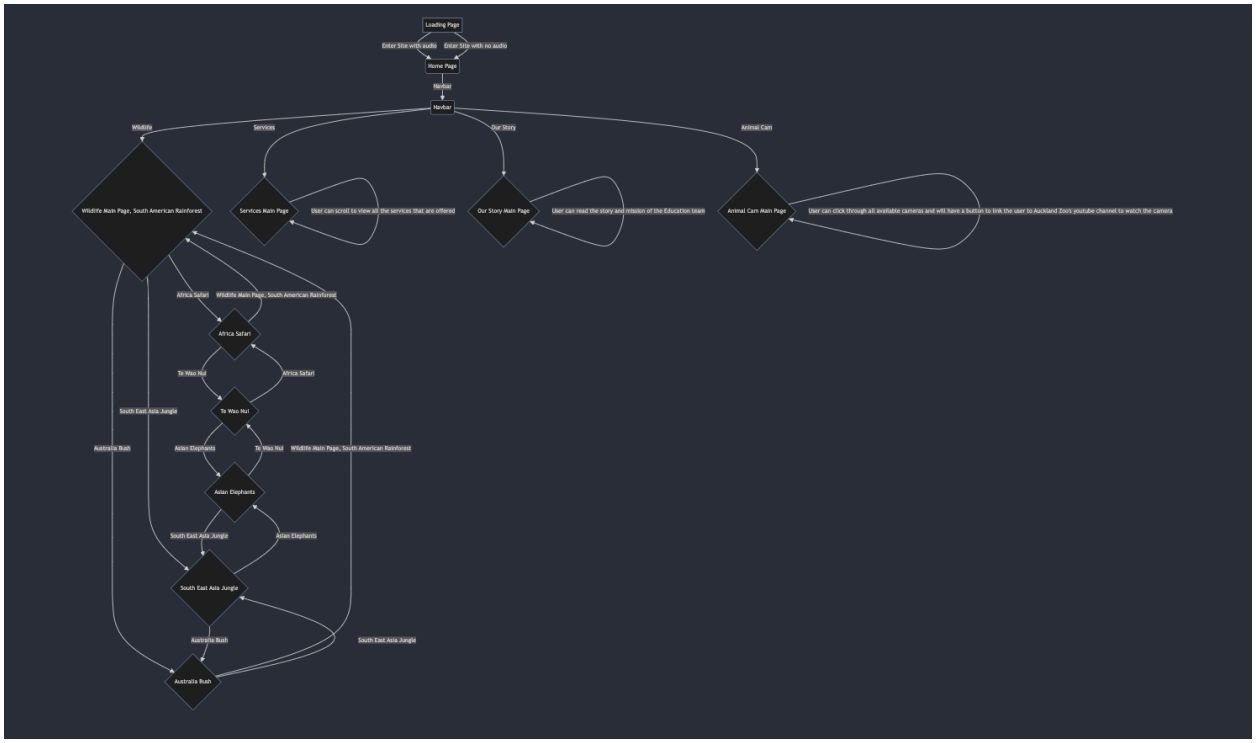
Purpose
The project aims to design a website that serves as both a teaching tool during sessions and a resource for students to explore further after their visit. Addressing this challenge is valuable because it enhances the overall learning experience for students, encourages ongoing learning beyond the classroom, and fosters a culture of lifelong learning and exploration. The current state may involve challenges in capturing and maintaining students' interest, as well as the need to retain engagement once formal sessions end. The desired state is to have a website with interactive elements, engaging visuals, and user-friendly navigation, providing multimedia content and easy access to additional resources. It is likely that similar problems have been addressed by other projects, possibly with outcomes that improved student engagement and learning outcomes.

Industry/Domain
The project is relevant to the education industry, specifically in the context of educational websites or platforms. The education industry faces challenges in engaging students and providing valuable resources for learning outside the classroom. The industry value-chain includes educators, students, educational institutions, and educational content providers. Key concepts in the industry include interactive learning, multimedia content, and lifelong learning. While the project is focused on education, the concepts of engaging content and user-friendly design are relevant to other industries as well.

Stakeholders
Stakeholders include educators, students, educational institutions, and potentially educational content providers. Stakeholders care about the software because it enhances the teaching and learning experience, improves student engagement, and provides valuable resources. They expect the software to be user-friendly, engaging, and to provide valuable educational content and resources.

Product Description

User Flow



Wireframe Design

Figma Mock-up link:
https://www.figma.com/file/ubCe1ZGnVz7LEiLOk4InCr/Capstone_Website?type=design&node-id=0%3A1&mode=design&t=QgtDxQTP1sRum9Hc-1

Open Questions/Out of Scope

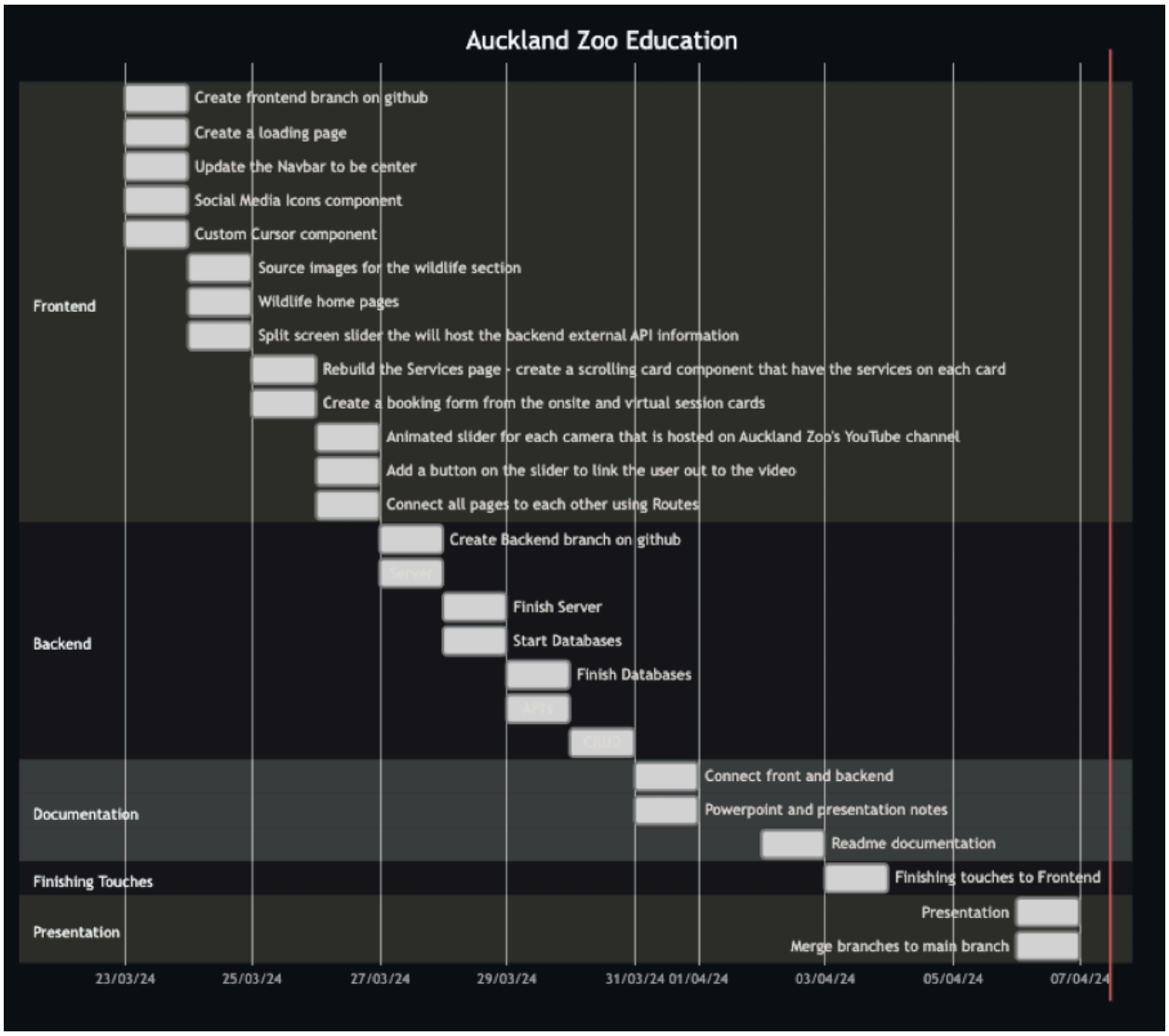
Features considered out of scope for this project may include advanced data analytics, personalized learning algorithms, and integration with external learning management systems. These features would require additional development effort and may not align with the immediate goals of the project.

Non-functional Requirements

Key security requirements for the booking form could include compliance with data protection regulations such as New Zealand Privacy Act. This involves obtaining explicit consent for data processing, implementing data encryption during transmission and storage, and providing users with options to access, update, and delete their personal information. The form should also have measures in place to prevent unauthorized access and protect against data breaches.

At peak times, the application should be able to handle a significant number of transactions to ensure smooth user experience. The software needs to be easy to use to cater to a wide range of users, including educators, students, and content providers. The application should respond quickly to user requests to provide a seamless browsing experience. Reliability is crucial, with a low mean time between failures to minimize downtime and disruptions to users. The software should conform to technical standards to ease maintainability and future updates.

Project Planning



Testing Strategy

Each feature of the application was tested individually and in combination with other features to ensure they functioned as expected. For example, the booking form was tested to ensure it collects and stores data correctly, and that users can submit the form successfully. The interactive elements, engaging visuals, and user-friendly navigation were tested for usability and functionality. Multimedia content was tested for compatibility and playback quality.

Edge cases were handled by identifying potential scenarios where the application might behave unexpectedly and testing those scenarios. For example, edge cases for the booking form might include entering invalid data, submitting the form multiple times, or accessing the form from a slow internet connection. By testing these scenarios, I ensured that the application behaved correctly.

Implementation

Considerations for deploying the software should include ensuring that the website complies with industry standards and regulations, such as New Zealand Privacy Act. This can involve implementing data protection measures, ensuring data encryption, and providing users with options to manage their personal information. Additionally, the website should be tested in a staging environment before deployment to identify and resolve any issues.

End-to-end solution

The software met its objectives by providing a website that serves as a teaching tool during sessions and a resource for students to explore further after their visit. The website features interactive elements, engaging visuals, and user-friendly navigation, enhancing the overall learning experience for students. By addressing the challenge of capturing and maintaining students' interest, the website encourages ongoing learning beyond the classroom and fosters a culture of lifelong learning and exploration.

References

Github Link:

https://github.com/institutedata/capstone-a10mal

The resources used in this project are:

- React
- CSS
- MongoDB
- Docker
- Bootstrap
- Javascript
- GSAP
- Three.js