MadKudu

Technical Requirements Document

Esma Hocini

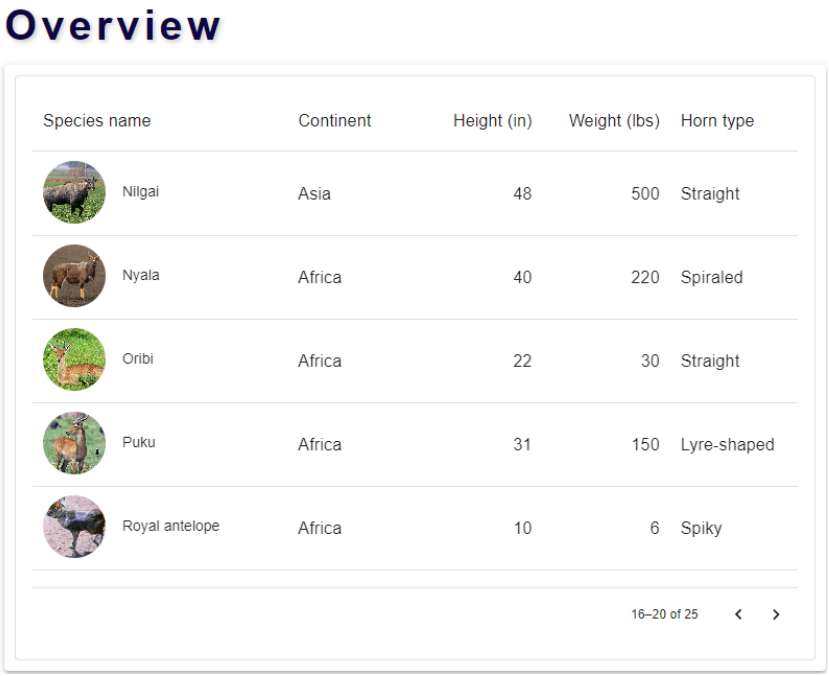
Project Overview

The project is a small web application developed to compliment a candidacy for an internship at Madkudu. It is built using React.js for the frontend, Material-UI for styling, and Node.js for the backend. Its primary purpose is to visualize antelope data, displaying species information in tabular format and using various charts to depict data trends.

Functional Requirements

1. Display antelope data

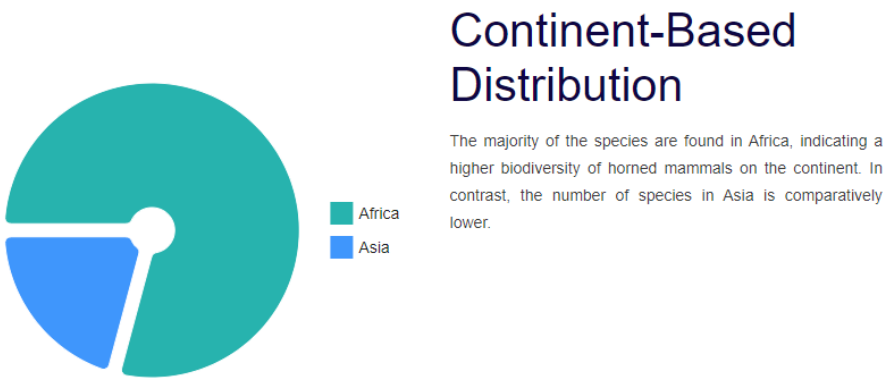
- Utilize a data grid or table to present information about different antelope species.
- Include attributes such as species name, height, weight, horn type, and geographical distribution.



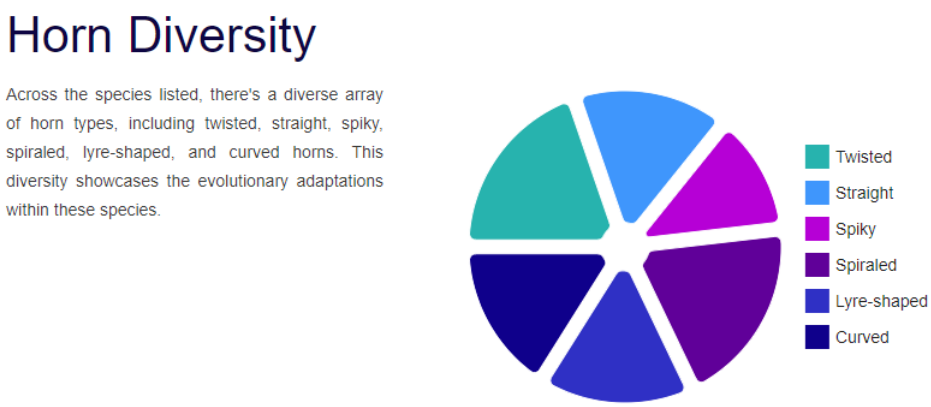
2. Charts

Implement three types of charts:

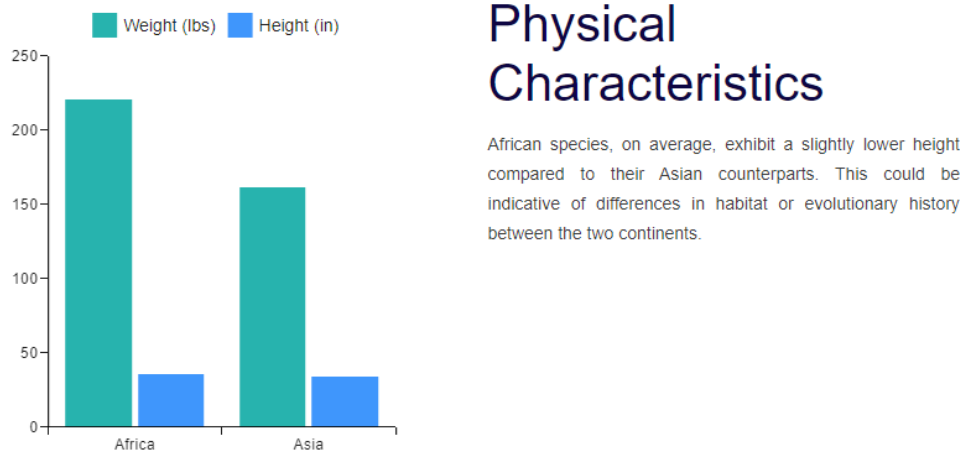
- **Pie Chart 1:** Display the distribution of antelope species across continents.



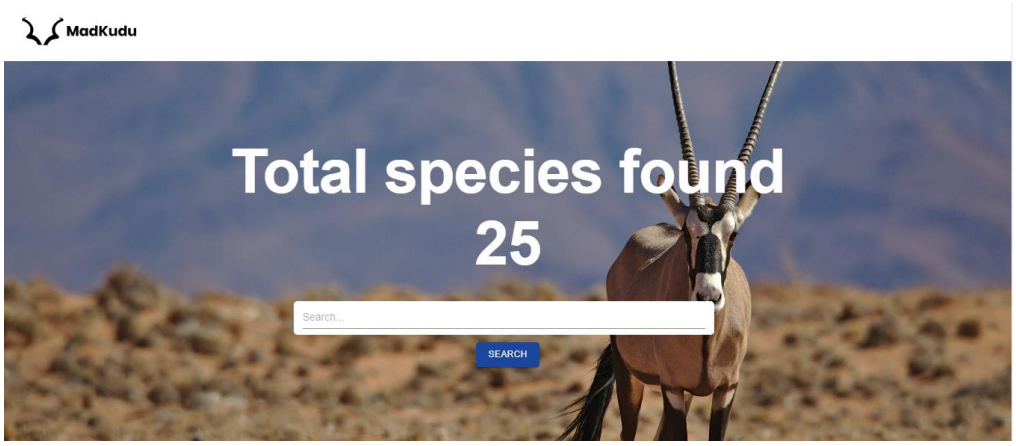
- **Pie Chart 2:** Show the distribution of horn types among different species.



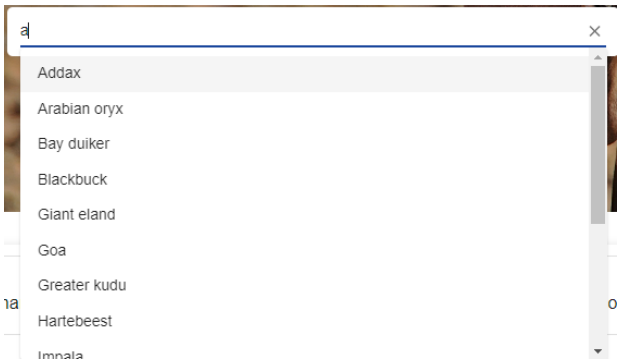
- **Bar Chart:** Illustrate the average height and weight of antelope species in Africa and Asia.



3. Search Functionality



- Incorporate a search bar that allows users to search for specific antelope species.
- Upon searching, display relevant information about the selected species in a modal or similar UI component.



Non-Functional Requirements

1. Frontend Quality

- Write clean, well-structured React code following best practices and conventions.
- Ensure a smooth and intuitive user experience with clear data visualization and responsive design.
- Create reusable components with clear separation of concerns to promote code reusability and maintainability.

2. Backend Quality

- Develop a backend to handle data retrieval and processing efficiently.

Technology Stack

1. Frontend:
    - React.js
    - Material-UI and Material-UI X for styling and charts
    - Axios for making HTTP requests to fetch data from the backend

2. Backend:
    - Node.js

Future Enhancements

We could consider potential features for future iterations, such as:

- Additional charts or visualizations to depict different aspects of antelope data.
- User authentication and authorization for personalized user experiences.
- Integration with external APIs to fetch and add real-time data updates.