



ConservationDB

Wildlife Conservation Database Management



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Conservation

Purpose: Our purpose is to enhance wildlife conservation methods by creating a comprehensive database that tracks critical information about local wildlife populations.



Goals

Our goal is to develop a program that collects, organizes, and stores data on local species, including population size, habitats, and other relevant ecological factors.

The compilation of this data can help conservationists, researchers, educators, and the general public with valuable insights into wildlife population trends.

User Roles

- **Administrator**
 - Manages overall system settings and security.
 - Adds, edits, or removes users and assigns roles.
 - Configures database backups, restores, and data migration
- **Data Manager**
 - Oversees data entry standards, quality assurance, and consistency
 - Approves and validates new or updated records
 - Performs bulk data operations, imports, and exports
- **Field Researcher**
 - Adds new wildlife observations and habitat data from fieldwork
 - Views and analyzes data collected from various field operations
- **Conservation Scientist**
 - Performs analysis on wildlife data, trends, population studies, and conservation metrics
 - Uses advanced querying and analytics features to support research and decision-making
- **Policy Maker/Decision Maker**
 - Views summarized reports, insights, and analysis provided by conservation scientists and analysts
 - Utilizes data-driven evidence for planning, conservation strategies, and policy formation

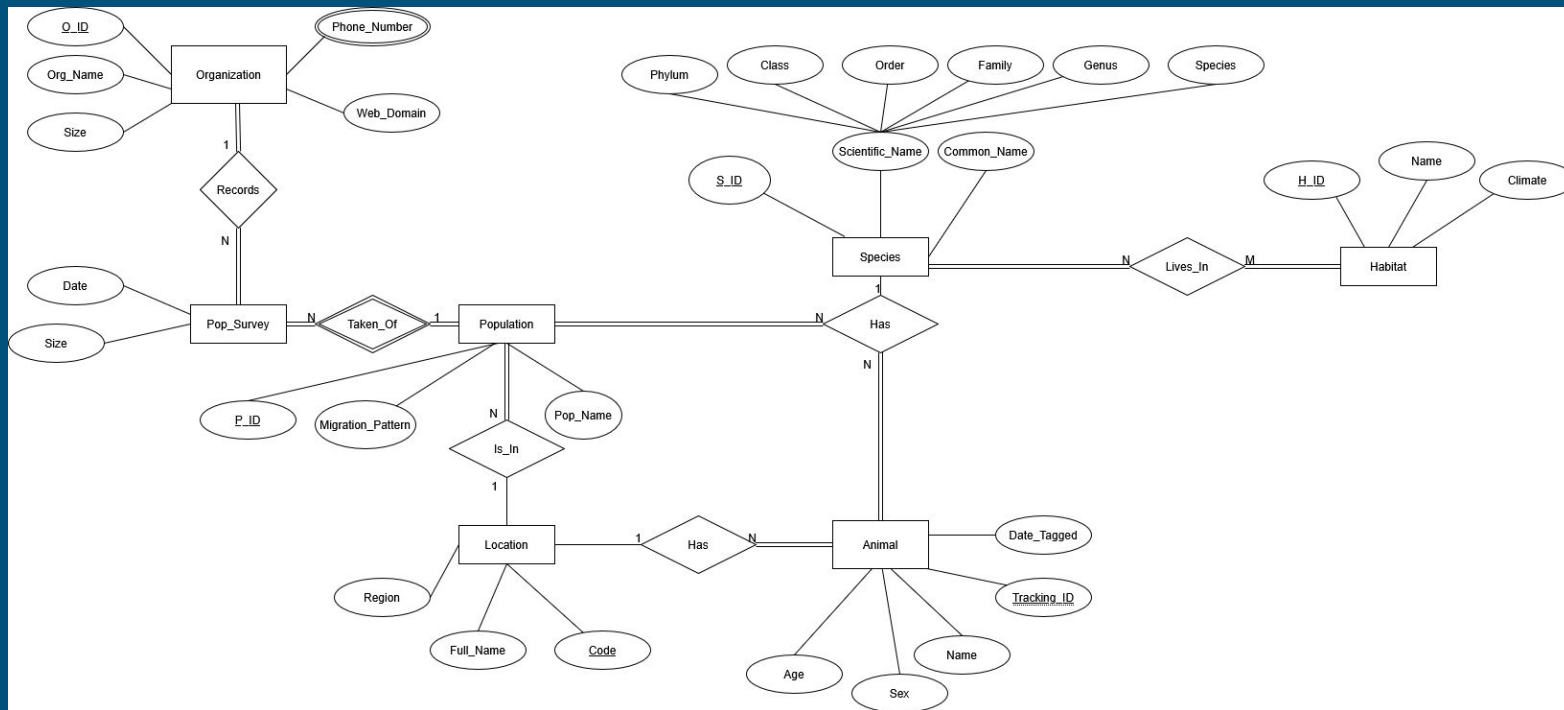
User Scenarios

- As a Administrator, I want to be able to name a list of the animal species our organization has tagged.
- As a Data Manager, I want to validate field observations before adding them to the database, so that I can ensure data quality and accuracy.
- As a wildlife researcher, I want to record wildlife sightings with GPS locations, images, and notes, so that accurate and detailed field data can be captured for research and conservation planning

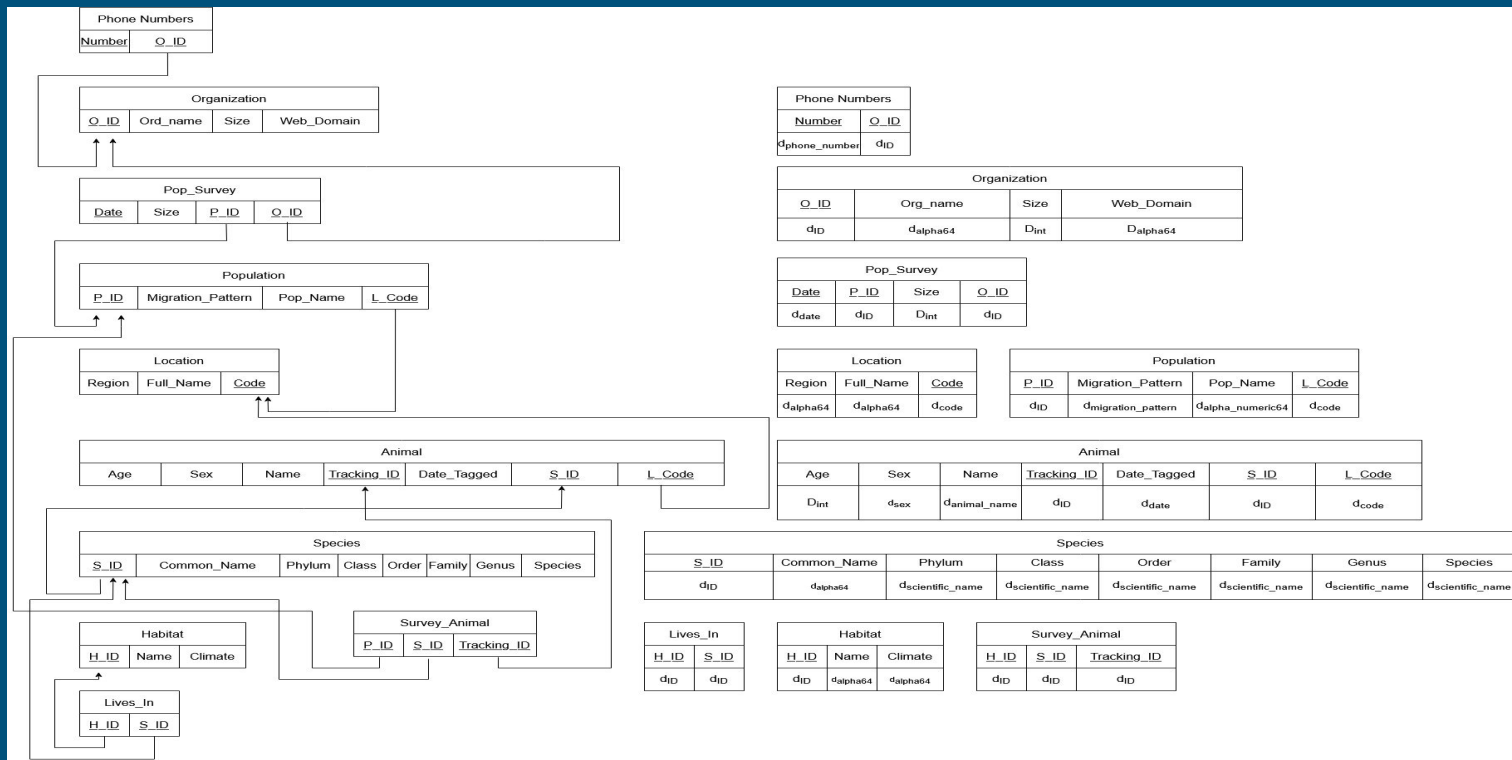
User Scenarios

- As a Conservation Scientist, I want to analyze wildlife population trends and habitat conditions, so that I can generate insights to inform conservation strategies.
- As a Policy Maker, I want timely notifications of critical wildlife issues, so that urgent conservation matters can be addressed promptly.

ER Diagram



RM Diagram



Tooling

- MySQL: MySQL was the main tool used for coding the tables. We chose MySQL because it is free and open source. It is also scalable, so it is suitable for small projects and bigger ones.
- Github: This was used as a form of version control. We chose to integrate Github into our project because its open source nature and ease of access. Every time updates were made to the sql file, those changes were committed into the github file so anyone can access it.
- Azure: Azure is where we host our database. We chose this program because of it being free for students and its ubiquitous nature with big companies.
- AppSmith: Appsmith is where we present our User Interface. We chose AppSmith because of its user-friendly design and ability to create a UI very quickly.

App Demonstration

Link to video:

Challenges

- There were several occurrences of difficulties with communication among teammates and delegating who exactly was responsible for what role they took in creating the database.
- Using tools like MySQL and Azure were somewhat confusing as this was our first time using them. There were also problems with reordering the dropping of tables and creation of them.
- Given more time, we would've experimented with other programs like AWS or React like we initially planned.

Questions

