S.D.M.E. Society's
S.D.M. COLLEGE OF ENGINEERING AND TECHNOLOGY DHAVALAGIRI, DHARWAD-580 002

(AFFILIATED TO VISVESVARAYA TECHNOLOGY UNIVERSITY)

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Implementation Phase Report On

WILDLIFE WATCH

Under the Guidance of
Prof. Varsha Jadhav

SUBMITTED BY,

PRADYUMNA	**2SD21IS033**
VISHAL K SAKLATHI	**2SD21IS061**
PAVAN KALBURGI	**2SD22IS402**

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Dr. Jagadeesh Pujari
HOD ISE

Ms. Varsha S. Jadhav
PROJECT CO-ORDINATOR

LIST OF MODULES:

"WildLife Watch" is a groundbreaking web platform and mobile app that empowers communities to actively engage in wildlife conservation while promoting responsible interaction with natural habitats. Through real-time wildlife sighting reporting, educational resources, and threat alerts, users can contribute to monitoring wildlife populations and protecting endangered species. The purpose of this document is to provide a comprehensive outline of the software requirements for the development of "WildLife Watch," a web platform and mobile application dedicated to wildlife conservation and responsible interaction with natural habitats. This Software Requirements Specification (SRS) defines the functional and non-functional requirements essential for the successful implementation of the Wildlife Watch system.

DESCRIPTION OF MODULES:

1. **Login / Sign Up Module**:

   1.1 User Login/Signup : This module allows general users to create an account or log into their existing account. Users will provide necessary details such as email, password, location, mobile number and other personal information. Once logged in, users can access features like reporting sightings, viewing sightings, and learning about wildlife conservation.

   1.2 Watcher Login/Signup : This module is specifically for wildlife watchers or administrators who monitor and manage data within the system. Watchers can sign up or log in using their credentials. They have access to more advanced features like data handling and the animal identifier model.

2. **Home Page (User) Module**:

   2.1 Report Sighting: This feature allows users to report wildlife sightings, including details such as the type of animal, location (with coordinates), time, and additional comments. Users can also upload images of the sighting.
   2.2 View Sighting: Users can view a list of reported wildlife sightings. They can filter sightings based on criteria such as location, time, and type of animal.
   2.3 Learn: This section provides educational resources about wildlife conservation, national parks, tiger reserves, and wildlife sanctuaries. Users can access articles, videos, and interactive content to learn more about these topics.

3. **Home Page (Watcher) Module**:

   3.1 Data Handling : Watchers can add information related to forest they belong to, like total number animals, endangered species etc and along with that Watchers can manage and analyze the data collected from user sightings. This includes validating reports, organizing data, and generating reports.

   3.2 View Sightings : Watchers can view detailed sighting data, including advanced filtering and search options not available to general users.

   3.3 Animal Identifier Model : A tool that helps watchers identify animals. It uses tensor flow API to match images with known animal species.

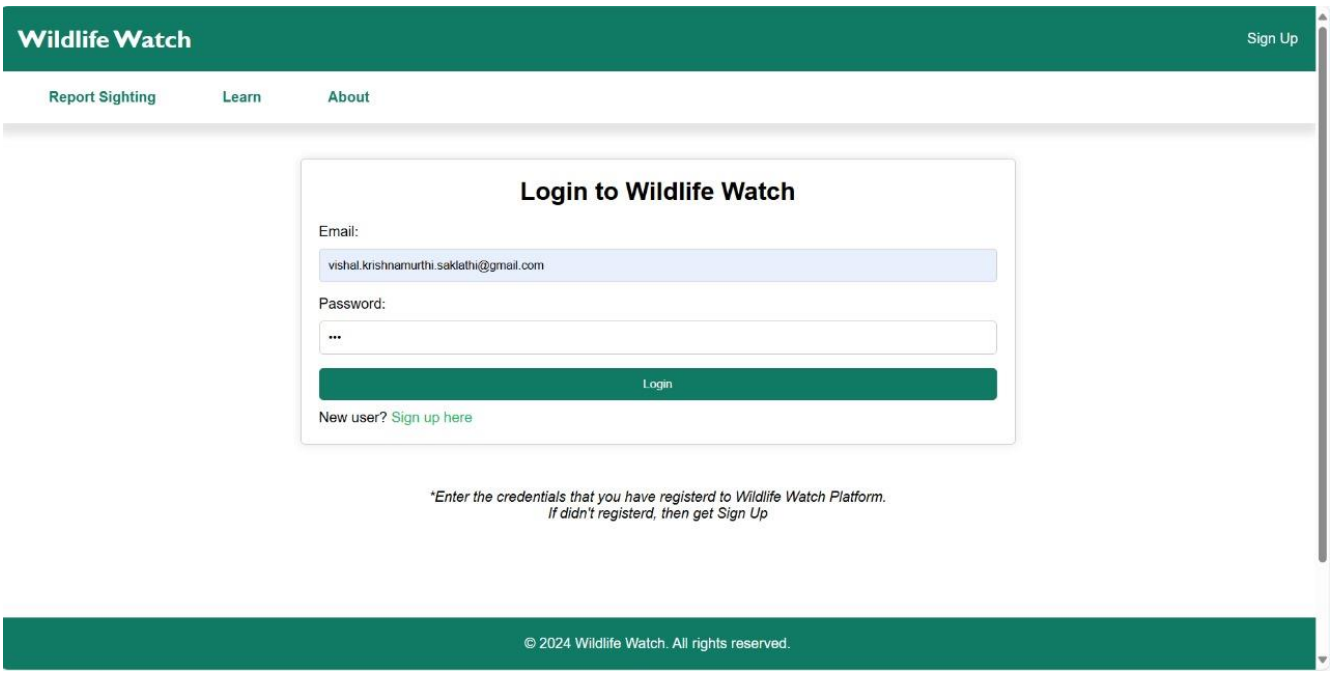
4. **Report Sighting Module**: This module allows users to report sightings of animals with precise location details. It asks users various information like name, email, date of sighting, footage of sightings, location and comments.

5. **Data Handling Module**: Watchers manage the data of animals in their jurisdiction. This includes adding new data, updating existing records, and removing outdated or incorrect information.

IMPLEMENTATION DETAILS OF MODULES:

TEST CASES :

Login Page


Wildlife Watch
Sign Up
Report Sighting
Learn
About
Login to Wildlife Watch
Email:
vishal.krishnamurthi.saklathi@gmail.com
Password:
Login
New user? Sign up here
*Enter the credentials that you have registerd to Wildlife Watch Platform.
If didn't registerd, then get Sign Up
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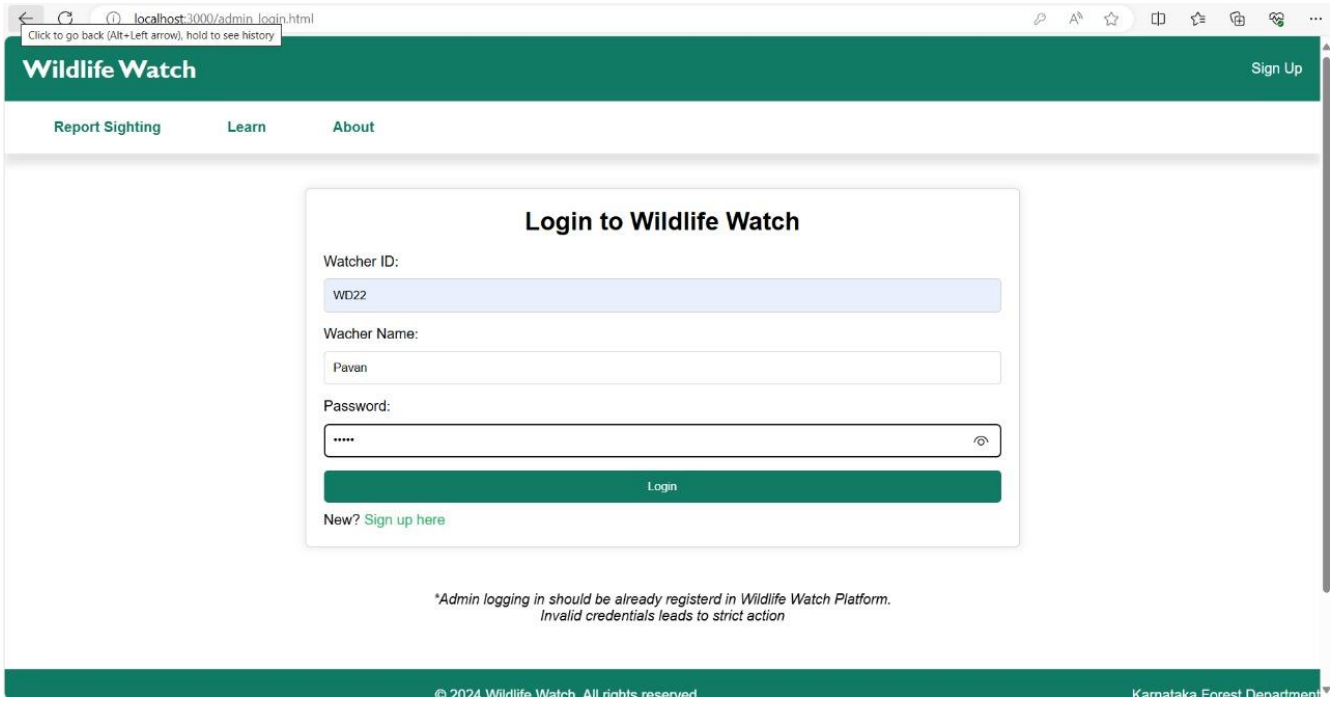
localhost:3000/admin_login.html
Click to go back (Alt+Left arrow), hold to see history
Wildlife Watch
Sign Up
Report Sighting
Learn
About
Login to Wildlife Watch
Watcher ID:
WD22
Wacher Name:
Pavan
Password:
Login
New? Sign up here
*Admin logging in should be already registerd in Wildlife Watch Platform.
Invalid credentials leads to strict action
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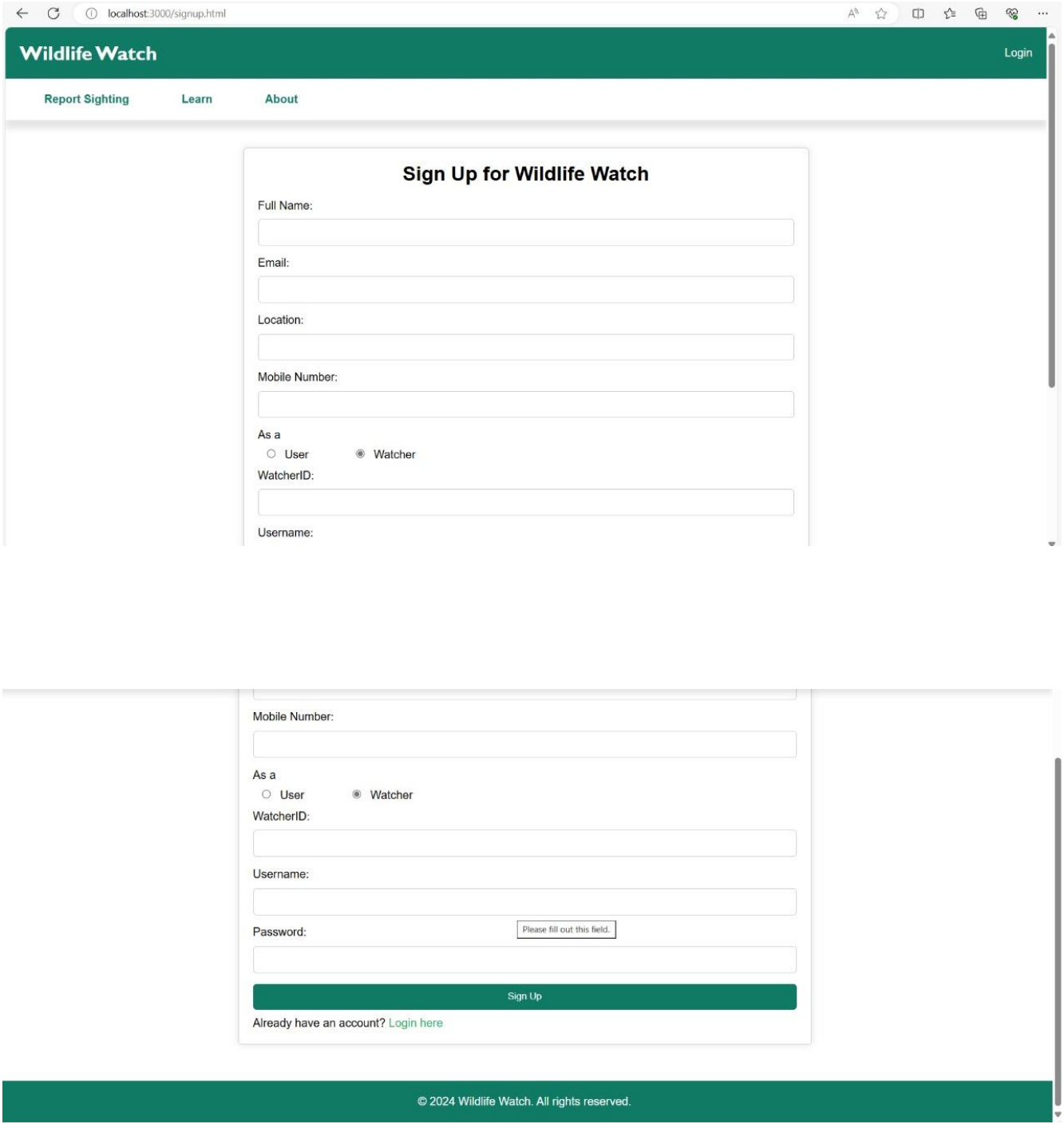
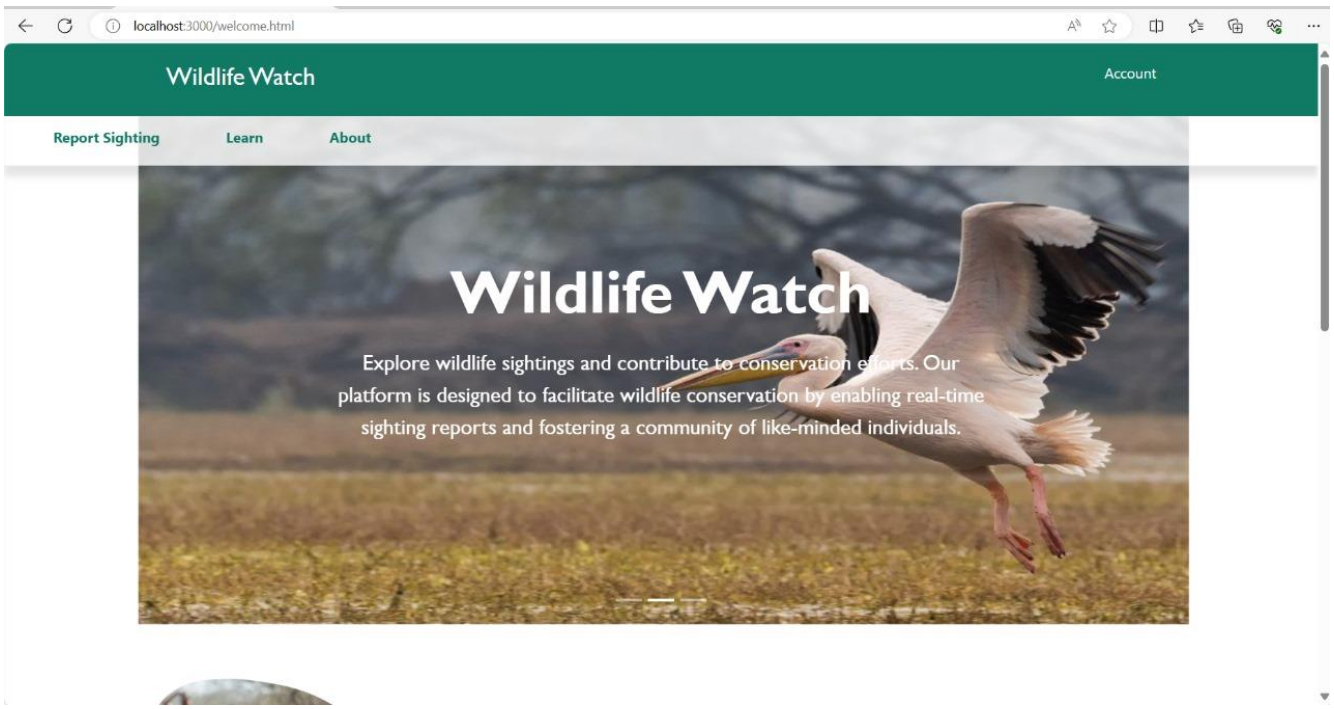
Karnataka Forest Department

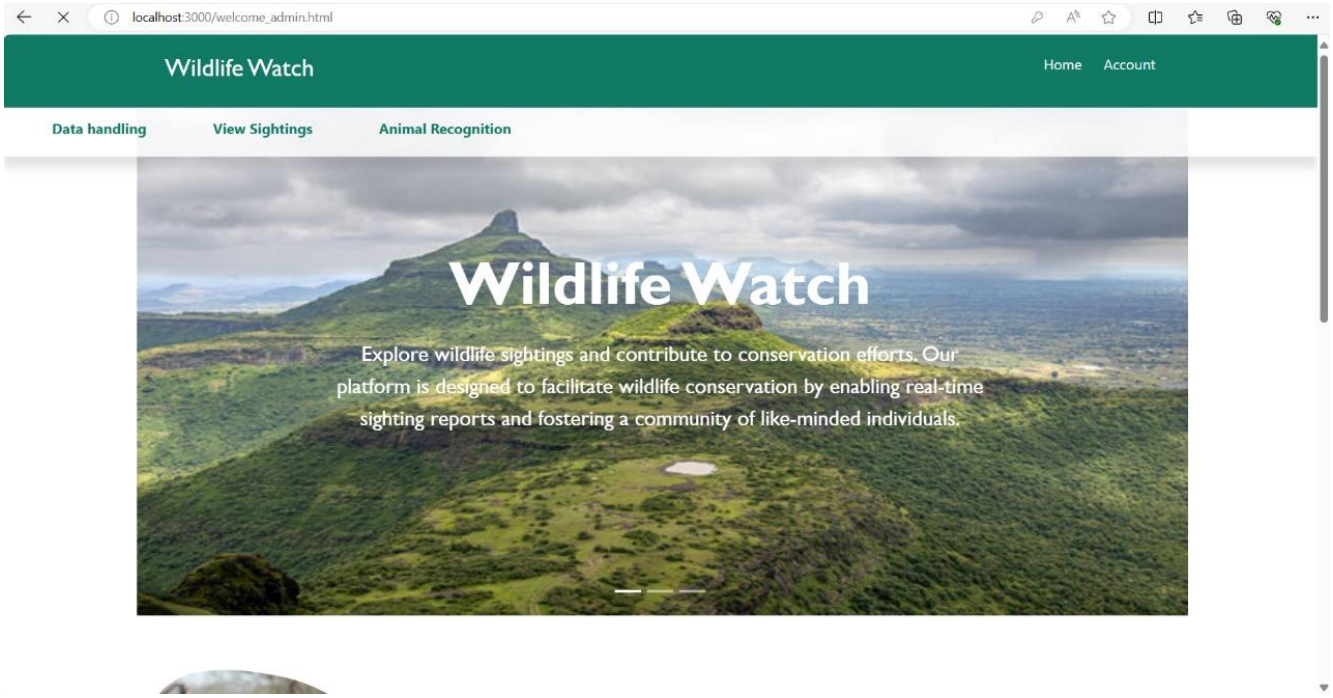
Sign Up Page



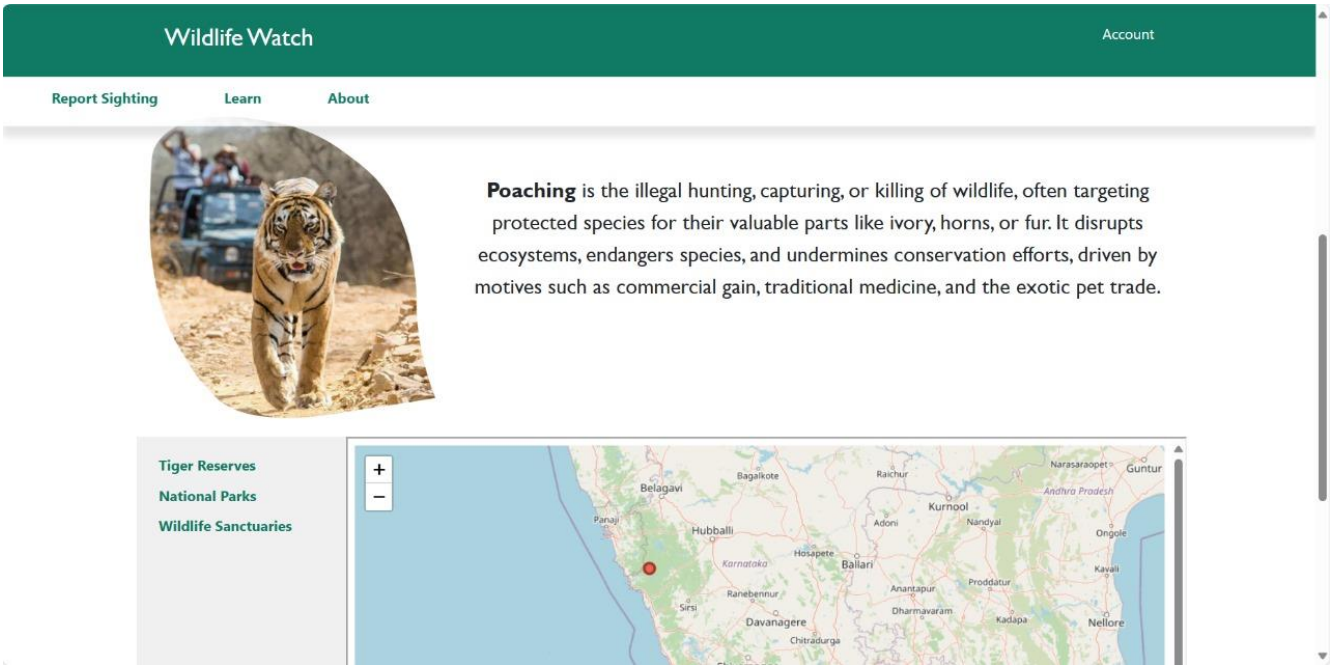
Home Page (User)



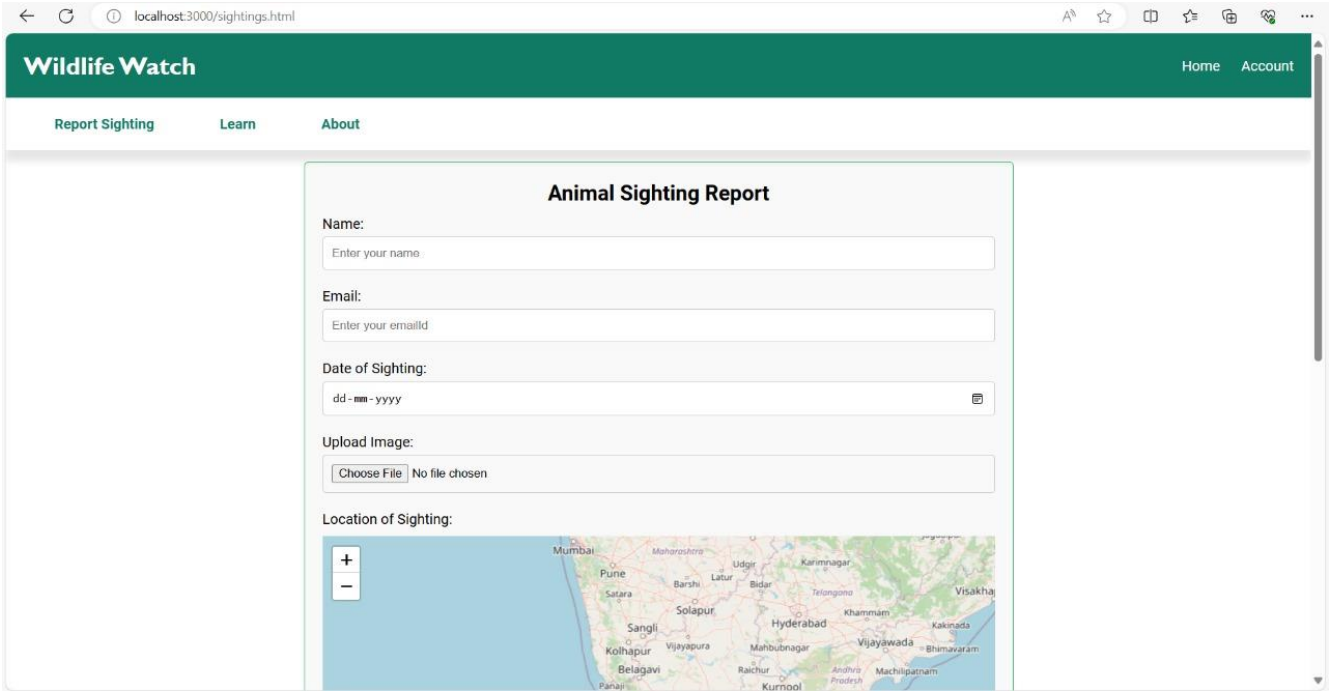
Home Page (Watcher)



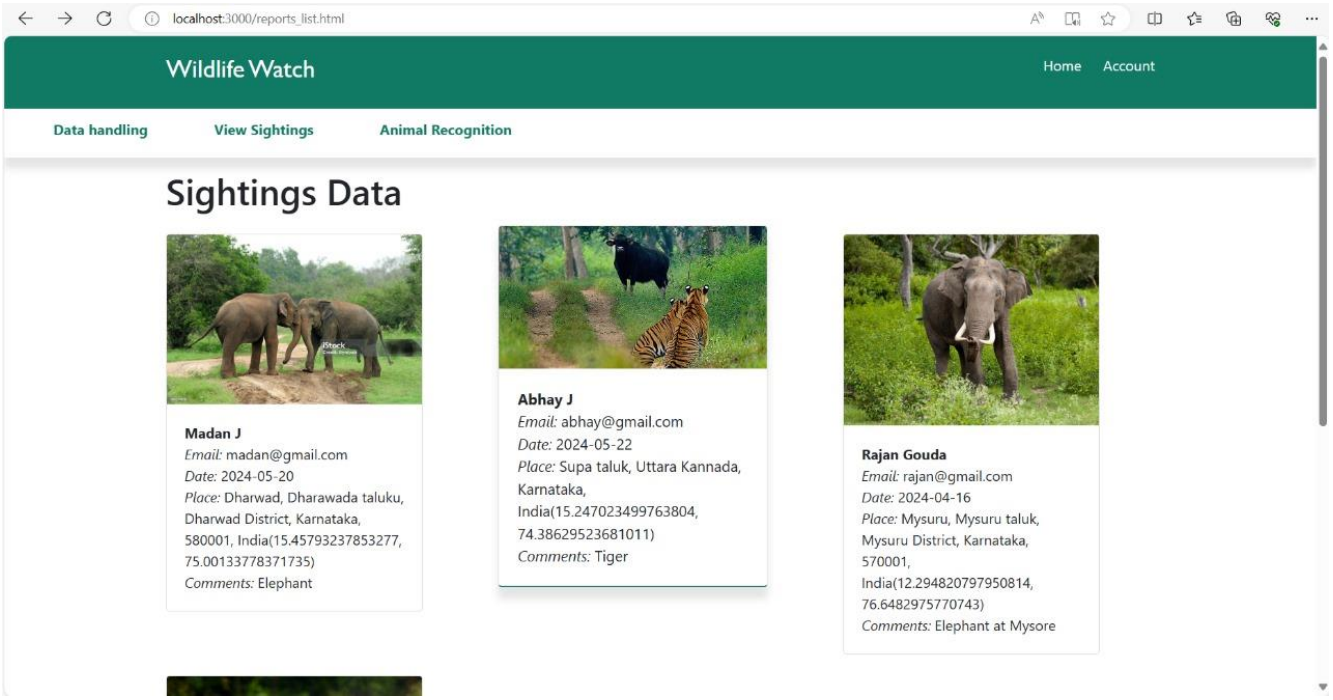
Learn Option



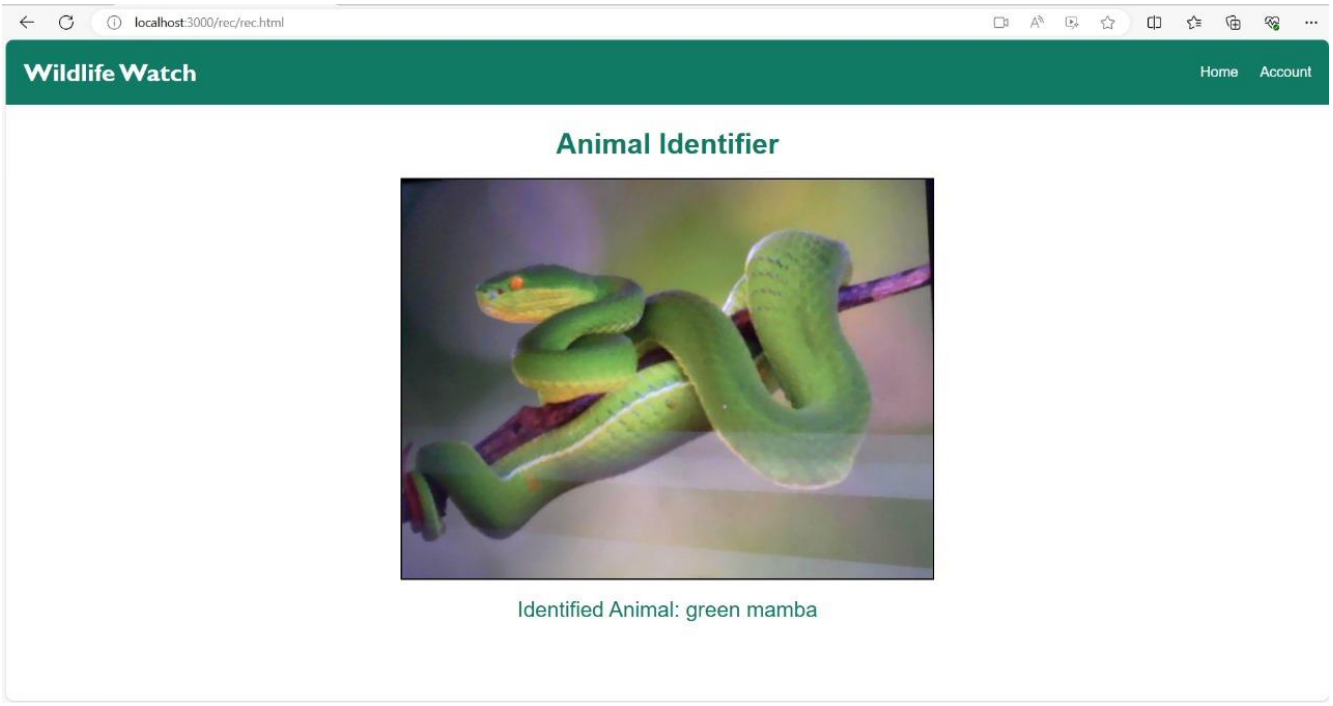
Sighting



View Sighting



Animal Recognition



***Implementation is Still in Processing**

EXPERIMENTAL SET UP:

Frontend Technologies

1. HTML : HTML is used to create the basic structure and layout of the web pages.

2. CSS : CSS is used to style and design HTML elements. It allows for the separation of content and presentation, making the web pages visually appealing.

3. JavaScript: JavaScript is a programming language that enables interactive web pages.JavaScript handles functionalities like form validation, asynchronous data fetching, DOM manipulation, and interactive maps.

Backend Technologies

1. Node.js

Node.js is a JavaScript runtime. It allows developers to run JavaScript on the server-side, enabling the creation of scalable and efficient web applications. In "WildLife Watch," Node.js is used to handle server-side operations, process requests, and interact with the database.

2. Express.js

Express.js is a web application framework for Node.js. It simplifies the development process by providing a robust set of features for routing, middleware, and handling HTTP requests and responses. In "WildLife Watch," Express.js is used to create the server, define routes for different endpoints, and manage middleware for request processing.

3. MongoDB

MongoDB is a NoSQL database known for its flexibility and scalability. It stores data in JSON-like documents, making it easy to manage hierarchical data. In "WildLife Watch," MongoDB is used to store user/watcher information, sighting reports, and other data. The database's ability to handle large volumes of data efficiently makes it ideal for the project's needs.

APIs Used

1. TensorFlow (for animal recognition)

TensorFlow is an open-source machine learning library developed by Google. It provides tools and resources for developing and training machine learning models. In "WildLife Watch," TensorFlow is used for the animal recognition feature. It processes images to identify animal species, enhancing the accuracy of sighting reports.

2. Leaflet and OpenStreetMap (for maps and location)

Leaflet: Leaflet is an open-source JavaScript library for interactive maps. In "WildLife Watch," Leaflet is used to render maps that show the locations of user sightings, national parks, wildlife sanctuaries, and tiger reserve