PROJECT REPORT DOCUMENTATION FOR GROUP 73

PROJECT: LOCATION TRACKER

1. INTRODUCTION

The Location Tracker project aims to develop a web application that allows users to track their location in real-time, view their location history, and perform reverse geolocation to obtain detailed address information. The application utilizes various technologies such as Express.js for the backend, Passport.js for user authentication, native JavaScript Geolocation API for obtaining user location, Leaflet.js for map integration, Geopify API for reverse geolocation, and MongoDB for storing and retrieving user location history.

Link to project: location-tracking.onrender.com

1. TECHNOLOGIES USED

Backend: Express.jsUser

Authentication: Passport.js

Frontend: HTML, CSS, JavaScript

Map Integration: Leaflet.js

Reverse Geolocation: Geopify API

Database: MongoDB

1. SYSTEM ARCHITECTURE

The system architecture consists of the following components:

Client-side: HTML, CSS, JavaScript for user interface and interaction.

Backend: Express.js for server-side logic, routing, and data handling.

Database: MongoDB for storing user location history data.

External APIs: Geopify API for reverse geolocation.

Authentication: Passport.js for user authentication and authorization.

1. FEATURES

User Authentication: Implemented using Passport.js to ensure secure access to the application.

Real-time Location Tracking: Utilizes native JavaScript Geolocation API to track user location.

Map Integration: Integrates Leaflet.js to display interactive maps within the application.

Reverse Geolocation: Utilizes Geopify API to obtain detailed address information based on user coordinates.

Location History: Stores and retrieves user location history data using MongoDB.

1. IMPLEMENTATION

Backend: Developed routes and controllers using Express.js to handle user requests, authentication, and data management.

User Authentication: Implemented Passport.js with local strategy for user authentication.

Frontend: Developed HTML, CSS, and JavaScript for user interface design and interaction.

Map Integration: Integrated Leaflet.js to display maps and user location markers.

Reverse Geolocation: Integrated Geopify API to obtain address information based on user coordinates. I

Database: Implemented MongoDB for storing and retrieving user location history data.

1. FUTURE ENHANCEMENTS

Enhance user interface for better usability and aesthetics. Implement additional authentication strategies such as OAuth for social login. Improve performance and scalability of the application, especially for handling large volumes of user location data. Implement notifications for users

based on their location. Integrate additional geolocation APIs for enhanced accuracy and coverage.

* 7.CONCLUSION

The Location Tracker project successfully implements a web application that allows users to track their location, view their location history, and obtain detailed address information using various technologies such as Express.js, Passport.js, Leaflet.js, Geopify API, and MongoDB. The project lays a solid foundation for further enhancements and improvements in the future.

TEAM

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