GitHub Issues for "EcoTrace" Development

Issue #1: Project Infrastructure Setup

Objective: Establish the basic development infrastructure for EcoTrace.

Tasks:

Set up the project repository with branch management and contributor guidelines.

Configure AWS or Azure hosting environment.

Establish development, staging, and production environments using Docker.

Issue #2: User Authentication and Registration

Objective: Develop a secure user registration and authentication system.

Tasks:

Define database schema for user data.

Implement authentication using OAuth and JWT for security.

Create registration and login endpoints.

Issue #3: Environmental Issue Reporting System

Objective: Enable users to report environmental issues with multimedia and geolocation data.

Tasks:

Develop front-end components for submitting reports including forms for uploading photos and videos.

Implement back-end functionality to store reports with geolocation tags in MongoDB.

Ensure secure file uploads and data validation.

Issue #4: Data Visualization with GIS Integration

Objective: Implement interactive maps and dashboards to visualize environmental data.

Tasks:

Integrate GIS using Leaflet or Google Maps API for mapping functionalities.

Develop dynamic dashboards to display data trends and statistics.

Create filters for viewing data based on different criteria (date, type of issue).

Issue #5: Community Engagement Tools

Objective: Develop features to foster community discussions and organization of local environmental actions.

Tasks:

Implement forums and discussion boards within the platform.

Develop features to allow users to organize and promote local cleanup events.

Enable notifications and updates on ongoing community projects.

Issue #6: Educational Resources and Gamification

Objective: Provide educational resources and introduce gamification to encourage participation.

Tasks:

Develop a section for educational content related to environmental conservation.

Implement gamification features like badges and leaderboards for active participants.

Ensure that educational content is easily accessible and updatable.

Issue #7: Integration Testing and User Feedback Incorporation

Objective: Integrate all system components and conduct comprehensive testing.

Tasks:

Perform end-to-end testing to ensure all features work seamlessly together.

Gather initial user feedback from potential real users and incorporate changes.

Optimize system performance based on test results.

Issue #8: Final Adjustments and Documentation

Objective: Make final adjustments, polish the user interface, and prepare comprehensive documentation.

Tasks:

Address any remaining bugs and enhance the user interface based on feedback.

Compile user manuals and developer documentation.

Prepare final presentation materials and a demonstration video for the hackathon submission.

Issue #9: Compliance and Security Enhancements

Objective: Ensure the platform complies with data privacy laws and is secure against potential threats.

Tasks:

Implement data encryption and secure API interactions.

Review compliance with privacy laws and conduct a security audit.

Document all security measures and compliance protocols.