Indira College of Engineering & Management,
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Department of Master of Computer Applications

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Project group No:-
Project Title: - Roadsense.ai
Group members: -

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Project Guide: - Dr. Darshana Desai

Project Co-ordinator: - Prof. Tejas Pawar

Abstract: *RoadSense.ai* is a smart road issue management platform designed to streamline communication between citizens and civic authorities. The system allows users to report road-related problems such as potholes, cracks, or drainage issues by uploading images and location data. It integrates a geospatial database using PostgreSQL and PostGIS for accurate issue mapping and visualization. A machine learning module further analyzes historical data to predict high-risk zones, enabling proactive maintenance. The system enhances transparency, accountability, and efficiency in urban road management through real-time data sharing and predictive analytics.

Advantages:-

- Enables citizen participation in urban maintenance through an easy-to-use reporting system.
- Provides real-time location mapping and issue visualization using geospatial data.
- Improves decision-making with analytics and predictive maintenance insights.
- Supports role-based access for citizens, officials, and administrators, ensuring data security.
- Promotes transparency and accountability in government operations.

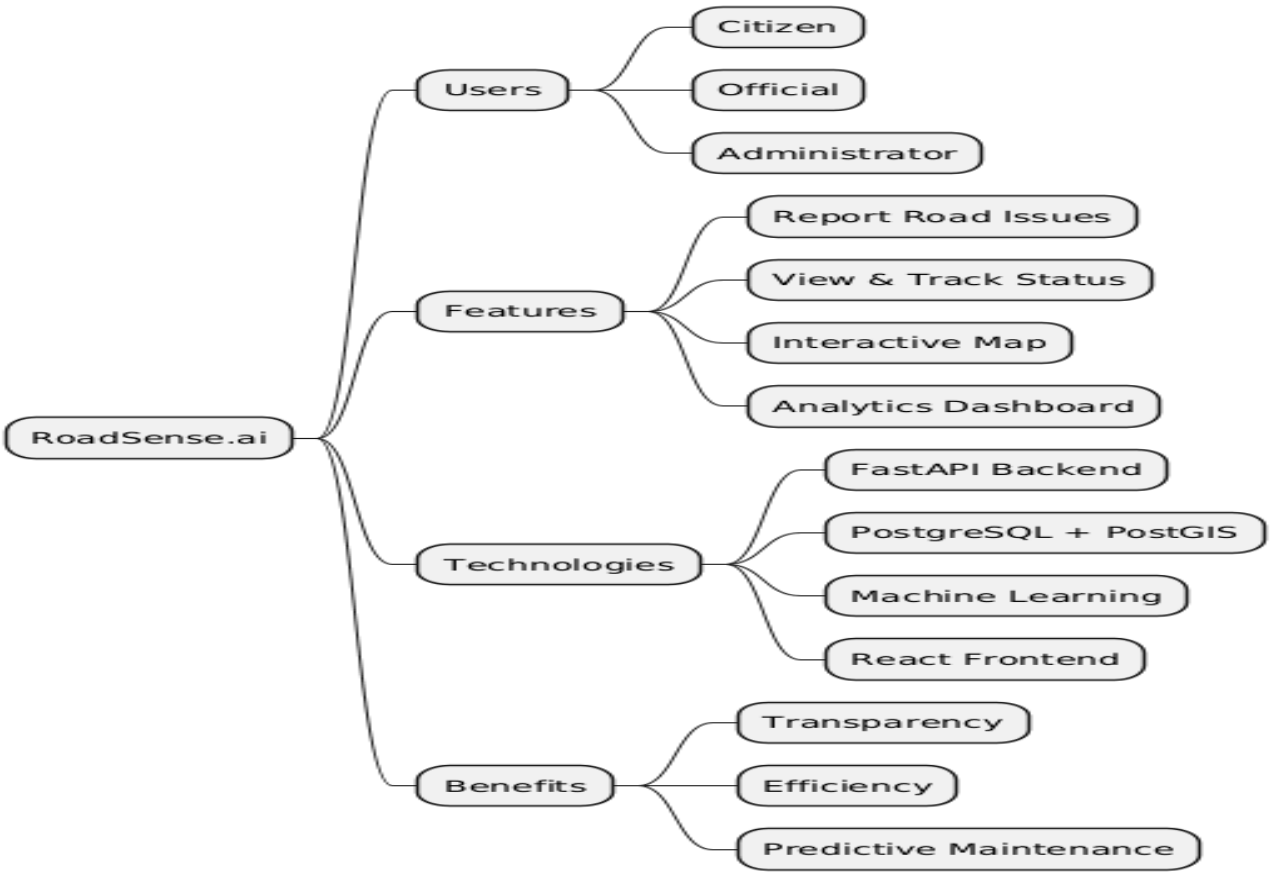
Limitations:-

- Requires internet connectivity for real-time data access and updates.
- Accuracy depends on the quality of user-reported data and geolocation input.
- Machine learning predictions may vary based on the availability of sufficient historical data.
- Initial setup and integration costs may be high for large municipalities.

Applications: -

- Municipal corporations for road maintenance and infrastructure planning.
- Smart city management systems for predictive analytics and resource optimization.
- Civic governance departments for public grievance tracking and issue monitoring.

Project Mind Map :-



Conclusion:-

The *RoadSense.ai* system demonstrates how technology can transform traditional road maintenance into a data-driven, collaborative, and efficient process. By combining geospatial analytics, real-time reporting, and predictive modeling, it empowers authorities to identify and resolve issues proactively. Despite minor limitations related to data accuracy and infrastructure dependency, the system represents a significant step toward achieving smarter, safer, and more sustainable urban road management.

Project Guide	Project Coordinator	HOD
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