ROAD GUARDIAN

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Introduction

Road Guardian plays a critical role in helping vehicle users during vehicle breakdowns or emergencies. This project develops a comprehensive web platform to provide immediate assistance, optimize dispatch, and integrate predictive analytics for enhanced service reliability.

Objective: Revolutionize service accessibility and efficiency using Django and MySQL

Users

Primary Users:

- Vehicle Users: Request and track service, view service history.
- Service Providers: Manage availability, respond to service requests.
- Administrators: Oversee operations, manage users and service analytics.

User Roles:

- Regular users, service providers, and administrators with distinct access levels.

Vehicle Users Functionalities

- Service Requests:
  - Service Request.
  - Send Live Location.

- Communication:
  - Live chat support.
  - Notifications via SMS and email for updates and reminders.

- Feedback & Loyalty Programs:
  - Submit feedback on services provided

Service Providers Functionalities

- Profile Management:
  - Detailed profiles showcasing certifications, service types, and service areas.
- Availability Status:
  - Real-time availability updates.
- Incident Response:
  - Receive and manage service requests efficiently.
- Communication:
  - Notifications for new service requests and customer updates.

Admin Functionalities

- User & Service Management:
  - Manage users and service providers, assign roles, and oversee user data.

- Add Service Type And Categories:
  - Manage and add the service type and categories for user views

Existing System

- Limited Accessibility:
  - Users often face delays when trying to access roadside assistance through traditional methods like calls.

- Manual Processes:
  - Most existing systems rely on manual dispatching and coordination, leading to inefficiencies and slower

- Basic Features:
  - Existing services often lack real-time tracking, predictive analytics, and automated incident

Proposed System

- 24/7 Digital Platform:
  - A responsive web app that offers quick and easy access to roadside assistance at any time.

- Enhanced Efficiency:
  - Utilizes automated service dispatch and send live location and faster response.

- Advanced Features:
  - analytics, real-time incident detection, and optimized route improving reliability and service quality.

Technologies Used

- Web Framework:
  - Django for backend development.
- Frontend:
  - HTML, CSS, JavaScript.
- Database:
  - MySQL for robust data storage.
- Communication:
  - Chat and notification systems.
- Security Measures:
  - Data encryption, industry compliance.

Future Scope

- IoT Integration:
  - Enhance automatic incident reporting and diagnostics.
- AI-driven Route Optimization:
  - Advanced algorithms to reduce travel time.
- Voice Recognition:
  - Hands-free service requests.
- Predictive Maintenance:
  - Proactive vehicle service recommendations.