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Applied Science and Engineering Technology

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FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

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Fix My Ride

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Abstract: The increasing dependency on personal and commercial vehicles has created a growing demand for efficient and reliable repair services. Many vehicle owners face difficulties in locating a mechanic when their vehicle breaks down unexpectedly, leading to significant inconvenience, time loss, and financial burden. It is an innovative, on-demand vehicle repair platform that connects users with professional mechanics through a mobile application, allowing them to request repair services at any time and location. The system offers two primary service modes: Fix at Site, where the mechanic reaches the user's location to fix the issue, and Fix at Garage, where the user drops their vehicle at a nearby selected garage. The platform integrates advanced features such as real-time GPS tracking, OTP-based authentication for service validation, live service status updates, and secure payment processing to enhance the overall user experience.

This paper presents a detailed study on how the FixMyRide platform is designed and developed, along with its system architecture, technology stack, and implementation process. The research explores how on-demand service platforms have revolutionized industries, providing insights into how digital solutions can be leveraged to modernize vehicle repair services. The study also examines the challenges in traditional vehicle repair services and how it effectively resolves these problems through a streamlined, technology-driven approach.

Keywords: Vehicle Repair, On-Demand Service, Real-time Tracking, Mobile Application, Secure Payment, Service Authentication, Digital Platform, Mechanic Booking System.

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I. INTRODUCTION

With the rapid growth in urbanization and an increasing number of vehicles on the road, vehicle breakdowns have become a common issue, affecting individuals and businesses alike. Traditional vehicle repair services are often slow, unorganized, and unreliable, forcing vehicle owners to either tow their vehicles to a nearby garage or manually search for a mechanic. These traditional methods are highly inefficient and create stress for vehicle owners. The lack of a standardized repair service, unpredictable pricing, and absence of real-time tracking further complicate the situation. It is a comprehensive digital solution that eliminates the hassle of finding mechanics during emergencies. It provides an intuitive mobile application where users can book mechanics instantly, track their location in real time, verify the service using a secure OTP system, and make digital payments for a seamless experience. This system ensures that users receive timely assistance without delays or uncertainty regarding service quality. The core objective of FixMyRide is to develop a user-friendly, transparent, and efficient vehicle repair system that simplifies the entire process of service booking, tracking, and payment. By utilizing cutting-edge technology, it ensures that users get the best possible repair services at their convenience, without the need for manual intervention.

II. LITERATURE REVIEW

[1]. Study on On-Demand Service Platforms- Various research studies have highlighted the impact of on-demand service platforms on customer satisfaction and operational efficiency. A study conducted by Smith et al. (2021) explored the transformation of industries like ride-hailing, food delivery, and home services through digitalization. The research emphasized that real-time tracking, AI-driven service allocation, and seamless user interfaces are key factors in improving user experience and trust. FixMyRide integrates these factors by providing real-time tracking of mechanics, allowing users to see the estimated arrival time and monitor the repair progress.

[2]. Research on Digital Payment Security - Another study by Ahmed & Patel (2020) focused on the security of digital payment systems in mobile applications. The paper discussed how encryption, tokenization, and multi-factor authentication (MFA) have enhanced transaction security, ensuring safe financial transactions. FixMyRide incorporates secure payment gateways such as Razorpay and Stripe to enable safe transactions, ensuring that users can pay for services without security concerns.

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue IV Apr 2025- Available at www.ijraset.com

[3]. A vehicle repair market growth trends- A market analysis conducted by Johnson & Taylor (2022) provided insights into the growing demand for vehicle repair services. The study projected a Compound Annual Growth Rate (CAGR) of 8.5% from 2023 to 2030 in the vehicle repair industry, highlighting how digital solutions will dominate this space. The research suggested that mobile-based platforms like FixMyRide would play a crucial role in bridging the gap between mechanics and customers, offering greater accessibility and convenience.

[4]. Wang et al. (2023) – AI in Logistics and Repair Management- This research showed how AI can optimize repair dispatch, predict service needs, and reduce downtime. Future versions of FixMyRide aim to integrate predictive service recommendations.

[5]. Sharma et al. (2021) – User Trust in Digital Platforms- This paper explored trust-building mechanisms such as verified profiles, OTP authentication, and transparent reviews in service apps. FixMyRide implements OTP and mechanic verification

[6]. Kumar & Singh (2020) – Impact of Mobile Applications in Automotive Services- This study discussed how mobile apps are changing user behavior in the automotive sector. Features like live updates, push notifications, and instant service bookings are now essential.

III.   PROBLEM STATEMENT

The traditional vehicle repair industry is largely unorganized, lacking structured communication channels between mechanics and vehicle owners. A key issue faced by users is the lack of immediate roadside assistance, leaving them stranded during breakdowns. Since mechanics are not easily discoverable in unknown locations, users often have to search manually for service providers, leading to time delays and uncertainty regarding service quality. Additionally, there is no transparency in pricing, and users often find themselves in situations where repair costs are exaggerated or unclear.

Another major challenge is the absence of real-time tracking in the vehicle repair industry. When a mechanic is on the way, users have no visibility into their exact location, estimated time of arrival, or progress of the repair work. Additionally, service validation is often unreliable, as there is no standard verification process to ensure that the correct mechanic is attending to the user's vehicle.

FixMyRide is designed to eliminate these problems by offering a location-based, real-time, and verified digital solution that seamlessly connects vehicle owners with professional mechanics. It ensures that users receive timely, high-quality repair services with complete transparency and convenience.

IV.   SYSTEM WORKFLOW
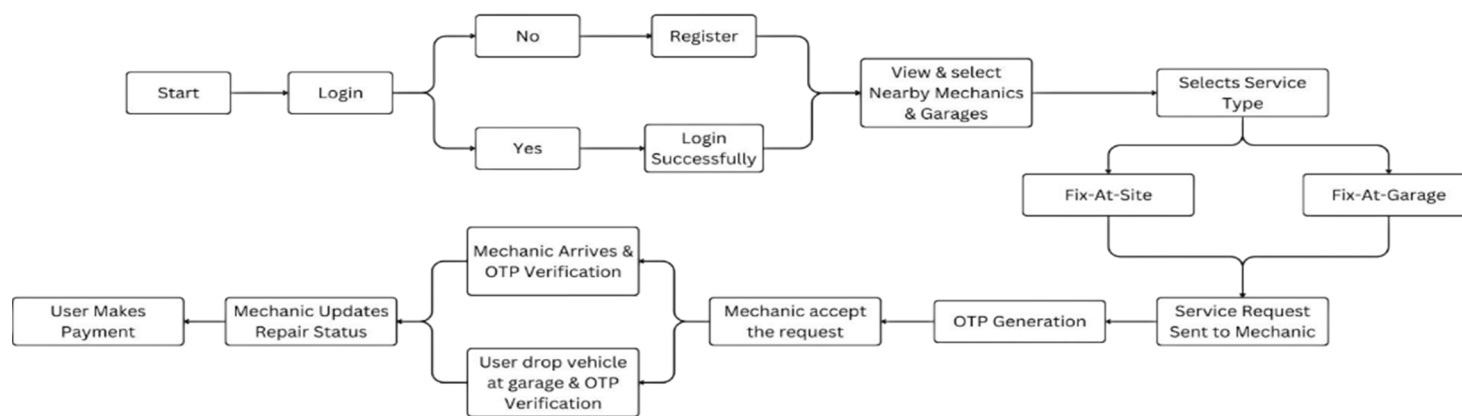
(a) System Architecture

V.   METHODOLOGY

A.   Service Request Handling

When a user selects a service, a request is sent to nearby mechanics based on availability and location. The system automatically matches the best mechanic using an optimized algorithm, ensuring faster response times. If a mechanic accepts the request, the user is notified, and live tracking of the mechanic begins. Once the mechanic arrives, the user provides a unique OTP for service verification, ensuring security and authenticity.

B. *Real-Time Tracking*

FixMyRide integrates Google Maps API to enable real-time GPS tracking of mechanics. This feature allows users to monitor the mechanic's location, view the estimated time of arrival (ETA), and receive notifications about delays or route changes. The mechanic's live status updates provide transparency and reliability, ensuring that the user is well-informed throughout the process. This eliminates uncertainty and enhances user trust in the service.
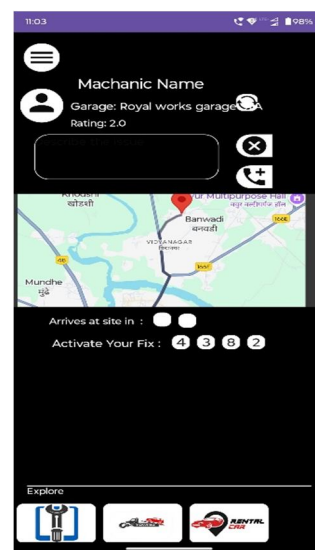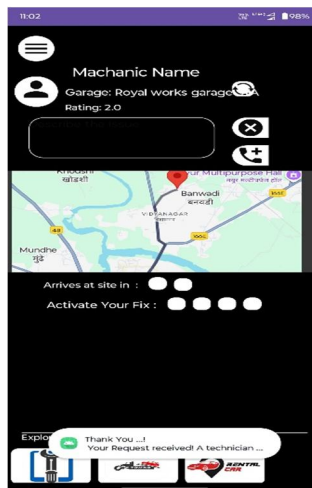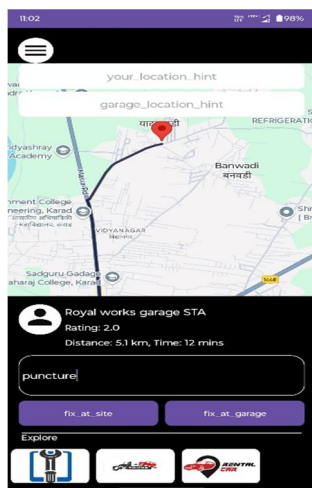
C. *Secure Payment System*

FixMyRide uses secure payment gateways like Razorpay or Stripe to process transactions seamlessly. After service completion, the total bill is generated, and users can pay through UPI, debit/credit cards, or mobile wallets. For enhanced security, the system implements encryption, tokenization, and fraud detection mechanisms to safeguard transactions. A digital receipt and service report are automatically generated and stored for future reference.
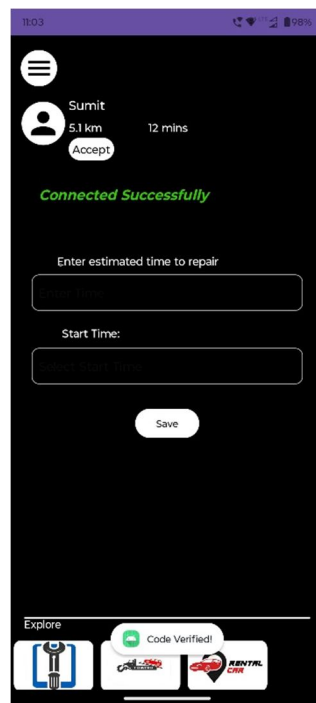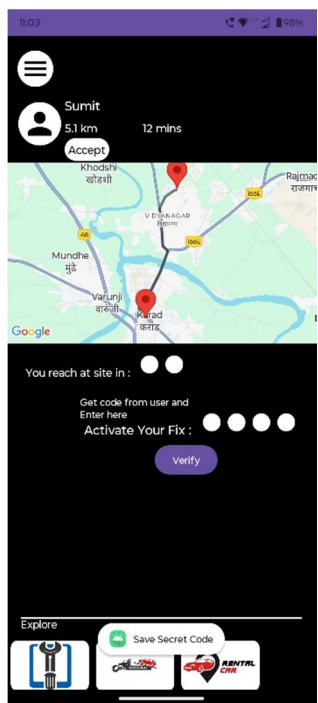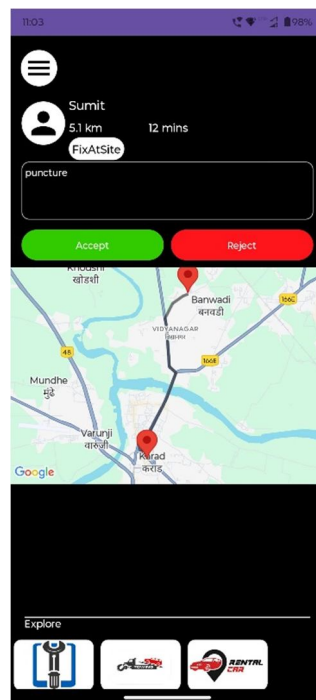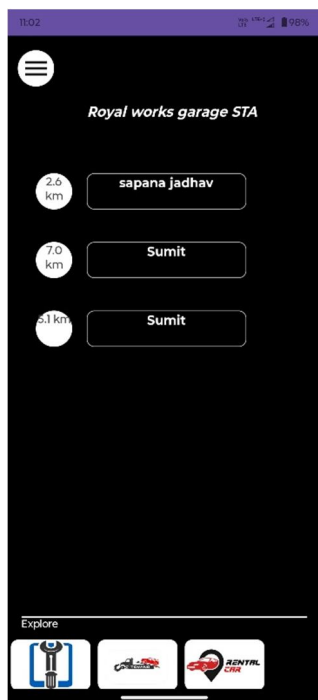
D. *OTP Verification*

Before the service starts, the user provides an OTP that ensures only the assigned mechanic performs the repair, increasing safety and accountability.

VI. SCREENSHOT

A. *User Application*
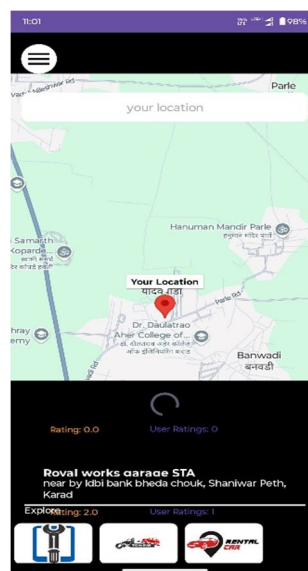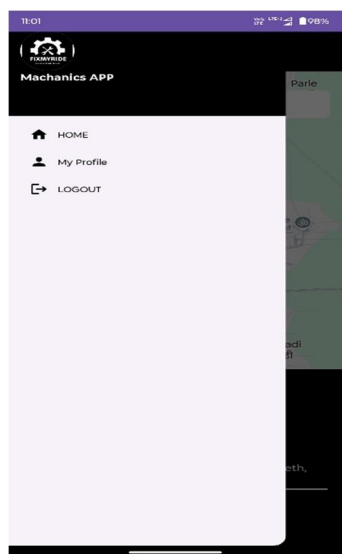
B.   Mechanic Application

VII.   CONCLUSION

FixMyRide modernizes vehicle repair services through digital transformation, providing instant repair solutions, real-time tracking, and secure payments. Future enhancements include AI-based service recommendations, AR repair assistance, and expansion to more cities to further improve user convenience and service efficiency.

REFERENCES

[1]   Smith et al., "On-Demand Service Platforms", IEEE, 2021.
[2]   Ahmed & Patel, "Secure Digital Payment Systems", Springer, 2020.
[3]   Johnson & Taylor, "Vehicle Repair Market Growth Analysis", Elsevier, 2022.

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