SYNOPSIS

Report on

CHALO RIDE PE

by

Meenakshi Bharadwaj 2300290140102
Murari Kumar Jha 2300290140105
Nikhil Chaudhary 2300290140105
Pawan Gangwar 2300290140105

Session:2024-2025 (III Semester)

Under the supervision of

Ms. Monika Kansal (Assistant Professor)

KIET Group of Institutions, Delhi-NCR, Ghaziabad

DEPARTMENT OF COMPUTER APPLICATIONS
KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD-201206
(2024 - 2025)

ABSTRACT

Today's urban settings demand dependable and effective transportation. As the need for smooth travel options in crowded places grows, ChaloRidePe shows up as a vibrant and easy-to-use ride-hailing service. Whether you're traveling to work, attending an important meeting, or exploring new areas of the city, it enables passengers to communicate in real-time with local drivers, guaranteeing a seamless and stress-free journey. ChaloRidePe offers real-time transportation scheduling, precise fare predictions, and safe cashless payment processing. It provides a smooth and safe experience because of its user-friendly interface, which is improved with safety measures and robust validations to guarantee legitimate users. Without the hassles of conventional transportation alternatives, users may easily book trips and complete transactions. ChaloRidePe is a useful tool for traversing today's hectic cities because of its emphasis on client comfort, safety, and efficiency. It offers a dependable, easily available alternative to urban commuting, perfect for both impromptu travel and routine commutes.

Keywords: Ride-booking, Urban transportation, Real-time Connection, Convenient travel, Ride-hailing.

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INTRODUCTION

With the advancement of internet and smartphones, the society has transitioned into a different world. Now anyone can connect with their friends and family without worrying about the boundaries. The expansion of internet and advancements in smartphones have opened a new door to the digital world where you can exist as a whole new digital identity, and can build systems that connects humans across globe. Businesses have also taken advantage of this expansion and have grown at a large scale. Now real-world problems are solved by building digital systems as a solution. One such problem was that of finding a cab or taxi on time. The ride-hailing phenomenon was catalysed by the advent of smartphones and the rapid proliferation of mobile apps. These apps act as intermediaries, connecting riders and drivers while providing a plethora of features such as real-time tracking, fare estimates, cashless payments, and driver ratings. This seamless integration of technology with transportation needs has disrupted the traditional taxi industry and forged a new path for urban mobility [1].

In today's fast-paced urban environments, efficient and reliable transportation is paramount. Navigating through crowded streets, dealing with traffic congestion, and finding suitable transportation alternatives can be a daunting task. ChaloRidePe, a cutting-edge ride-hailing platform, emerges as a solution to these challenges, offering a seamless and convenient commuting experience.

Inspired by the growing demand for efficient mobility solutions, ChaloRidePe is designed to connect passengers with nearby drivers in real-time, providing a convenient and affordable alternative to traditional transportation methods. With just a few taps on your smartphone, you can request a ride, track your driver's location, and enjoy a hassle-free journey.

ChaloRidePe's user-friendly interface and intuitive features make it accessible to everyone, regardless of their technological proficiency. Additionally, ChaloRidePe prioritizes safety and security, incorporating robust features such as proper user authentication, and secure payment options.

Whether you're commuting to work, exploring the city, or attending social events, ChaloRidePe offers a reliable and convenient transportation solution. By choosing ChaloRidePe, you're not just selecting a mode of transportation; you're joining a community that values efficiency, convenience, and a sustainable approach to urban mobility.

LITERATURE REVIEW

The ride-hailing industry has witnessed significant growth in recent years, revolutionizing transportation services. Uber, one of the pioneers in this space, has set the standard for user-friendly interfaces, efficient matching algorithms, and reliable services. Rodbez, a prominent player in the Indian market, has demonstrated success in providing efficient and affordable rides for a state-specific. This literature review explores existing research and development in ride-hailing applications, focusing on the use of ReactJS and potential improvements inspired by Uber, Lyft, and Rodbez.

Potential Improvements and Innovations

While existing applications have set the benchmark, there is room for innovation and improvement in our ride-hailing application **ChaloRidePe**. Some potential areas of focus include:

- **Enhanced User Experience:** Explore personalized recommendations, predictive routing, and integration with other transportation modes (e.g., public transit, bike sharing).
- **Safety Features:** Implement advanced safety measures, such as emergency assistance buttons, background checks for drivers, and real-time location sharing with trusted contacts.
- **Usability and Simplicity:** People nowadays prefer simple and intuitive applications than some fancy ones. The application is aimed to be built intuitive and simple to ease human-interaction and build user trust in the application. The application will be designed for the target audience of all ages.
- **Accessibility:** Ensure that the application is accessible to users with disabilities by incorporating features like voice commands, visual aids, and tactile feedback.

By leveraging React Native and incorporating essential features, it can create a user-friendly, reliable, and innovative platform that meets the evolving needs of riders and drivers. Future research and development should focus on enhancing user experience, safety, sustainability, and accessibility to create a truly exceptional ride-hailing service.

PROJECT OBJECTIVE

This application is primarily focused on three areas: Users, Businesses, and Society. An improved implementation will assist users' safety, boosting the company's reputation and achieving social goals. Primary goals are:

1. **User Centric:**
    - Convenience
    - Accessibility
    - Affordability
    - Safety
    - Reliability

2. **Business Objectives:**
    - Profitability
    - Market Penetration
    - Scalability
    - Customer Loyalty
    - Differentiation

3. **Societal Objectives:**
    - Create Economic Opportunities
    - Improve Accessibility

HARDWARE AND SOFTWARE REQUIREMENTS

The development of ChaloRidePe requires a combination of hardware and software tools to ensure the platform's functionality and efficiency.

- **Hardware Requirements:** Hardware requirements for the ChaloRidePe application are listed below in Table 3.1, with each hardware component requirement and its specification description.

Component	**Specification**
Processor	Quad-core 2.5 GHz or Higher
RAM	8 GB or more
Storage	50 GB or more disk space
Database	PostgreSQL

Table 1: Hardware Requirements

- **Software Requirements:** Software requirements for the ChaloRidePe application are listed below in Table 3.2, with each software component requirement and its specification description.

Component	**Description**
Expo Mobile Application	SDK version 51 for debugging
Frameworks	React Native Expo, Tailwind CSS
Operating System	Windows 11/MacOS/Linux
APIs	**Location:** Here Maps API **Authentication:** Clerk Services **Payment:** Stripe Payments **Database:** NeonDB Serverless
IDE	VS Code
API Testing Software	Postman

Table 2: Software Requirements

RESEARCH METHODOLOGY

Some common features of a ride-booking app:

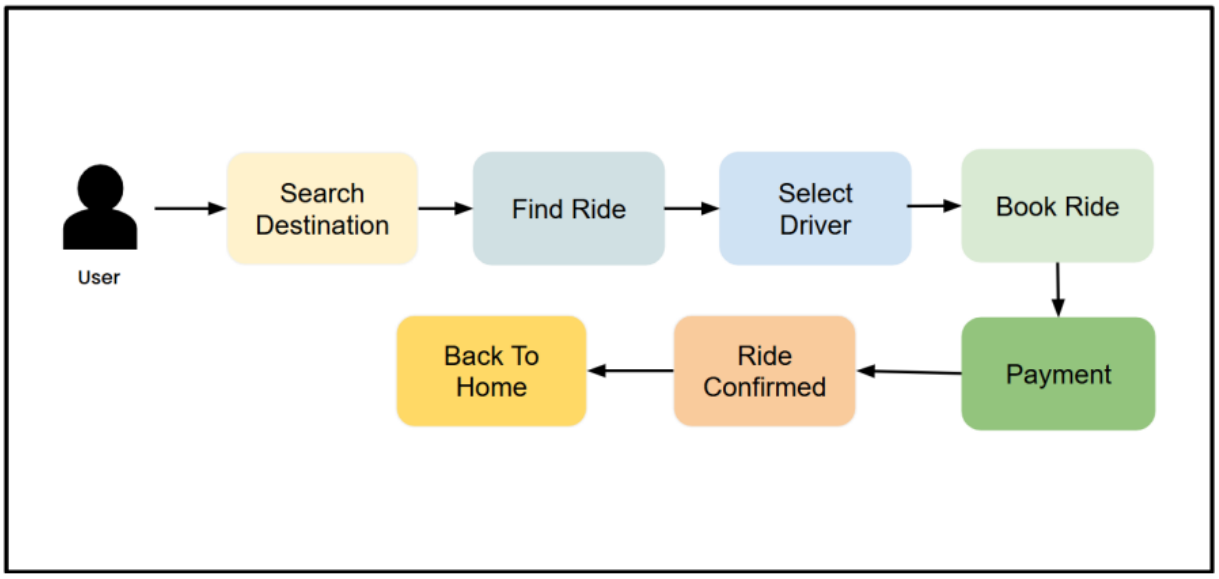
- Authentication
- Booking process
- Card payments
- Intuitive and User-friendly Interface
- Navigation
- Estimated time of arrival
- Live ride location
- Ride history

Key Features and Module Functionality:

Inspired by applications like Uber, Lyft, RodBez, a successful ride-booking application should incorporate the following core features:

- **User Registration and Login:** A seamless registration process and secure login mechanisms are essential for user authentication.
- **Real-time Location Tracking:** Users and drivers should be able to track each other's location in real-time using a map interface.
- **Ride Booking Process:** A complete process including destination input, location search, finding rides, confirming driver and finally review ride details before payment process. This process comprises of **ride request**, **ride confirm**, **ride review**, and **redirection to payment gateway**.
- **Payment Integration:** Secure payment options, such as credit cards or digital wallets, should be integrated for convenient transactions.
- **Ride History:** To fetch and show past rides to the user in a dedicated tab as well as on the home screen.
- **User Profile:** To manage and display all user details such as first name, last name, email, profile picture, etc.
- **Communication Tab:** A tab for the purpose of chats which will help user to communicate with driver and helps better track the ride. This feature will be currently disabled, but will be implemented in later versions.

Proposed Workflow of the Application



User logs into the application. After session is created, user searches the destination, and then finds the ride based on pick-up and destination location. The user then selects the ride that best fits as per his requirements.

After selecting the driver, the user confirms the ride by review ride information, and then proceeds to payment gateway to process payment. After successful payment, the user is shown a confirmation message about the payment success and navigated back to home after clicking on "**Back Home**" button.

The payment success updates the payment status as "**Paid**" and confirms the ride record for the same ride is also created and rendered in the user's ride history and home screen.

PROJECT OUTCOME

This project aims to benefit the riders who are in need of transportation and the society to grow economically. Some common outcomes include:

1. **For Users:**

   - Convenience and Accessibility
   - Cost-Effective
   - Flexibility
   - Safety Features

   The application aims to provide usability, accessibility, easy of operating the interfaces with its intuitive interface, and minimalistic & simple design to gain user's trust for long-term to ensuring recurring customers.

2. **For Society:**

   - Economic Growth
   - Job Creation

   The application grows job opportunities for drivers and acts as a product for the needy users. It is an application that promotes economic growth as well.

PROPOSED TIME DURATION

The estimated time duration for the development and testing of "**ChaloRidePe**" is as follows:

1. **Planning and Requirement Gathering:** 2 weeks
2. **Design:** 2 weeks
3. **Development:** 6 weeks
4. **Testing and Debugging:** 3 weeks
5. **Final Deployment and Documentation:** 1 week
6. **Maintenance:** ongoing

Total Duration: **14 weeks** (3.5 months)

This schedule takes into account the development as well as comprehensive testing to guarantee that the application satisfies user expectations for functionality, performance, and overall experience.

REFERENCES

1. Zetas, October 2023, “The Evolution of Ride-Hailing Apps: Revolutionizing Transportation” https://www.zetaton.com/blog/ride-hailing-apps
2. React Native Documentation. [https://reactnative.dev/]
3. Clerk Authentication Services. [https://clerk.dev/]
4. Here Maps API Documentation. [https://developer.here.com/]
5. Stripe Payment Integration. [https://stripe.com/docs/]
6. Neon Database Documentation. [https://neon.tech/]