Jaypee Institute of Information Technology

Sector-62, Noida

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Project Report

Of

Software development Fundamentals Lab - II

SDF MINI PROJECT

Synopsis

Title: WHEELS BUDDY

"An Integrated Carpooling and Expense Tracking System"

Batch: B10 (B.Tech CSE)

TEAM MEMBERS:

S. No.	Enrolment No.	Name
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SYNOPSIS-:

ABSTRACT- **Introducing Wheels Buddy – your all-in-one solution for seamless carpooling and expense tracking. With a focus on convenience, efficiency, and community building, Wheels Buddy revolutionizes the way you commute by merging carpooling with meticulous expense management. Our platform offers a comprehensive suite of features, ranging from user profiles and dynamic route planning to expense sharing and verification systems. By facilitating resource-sharing and reducing environmental impact, Wheels Buddy simplifies your daily travels and fosters a sense of camaraderie among users.**

PROJECT OBJECTIVES:

1. Develop a user-friendly interface for Wheels Buddy, enabling seamless profile creation, route planning, ride offering/finding, and expense tracking.
2. Implement a robust expense tracking system to record shared expenses accurately.
3. Establish secure verification processes for user trust.
4. Optimize features based on user feedback for enhanced experience.

OUR PROJECT BOASTS SOME KEY FEATURES-:

1. User Profiles: - Users can create profiles with information such as name, contact details, and preferences.

2. Car Information: - Display a list of available cars with details on the model, seating capacity, and driver information.

3. Route Planning: - Allow users to plan routes for their journeys, specifying pick-up and drop-off points.

4. Finding a Ride: - Enable users to search for available rides based on their desired routes and timings.

5. Ride Booking: - Implement a system for users to book available seats in a carpool.

6. Expense Sharing: - Introduce a mechanism for sharing expenses among participants, considering factors like distance, fuel costs, and tolls.

7. Expense Tracking: - Record and categorize shared expenses, including fuel and toll charges. Also, generate a bill.

8. Review and Rating System: - Implement a review and rating system for both drivers and passengers to build a trustworthy carpooling community.

9. User Dashboard: - Provide users with a dashboard displaying their upcoming rides, ride history, and overall expenses.

10. Security and Verification: - Implement a verification system for users to enhance trust within the carpooling community.

TOPICS OF C++ USED-:

- **File Handling:** Reading and writing data to files to store information about available cars, bookings, and expenses.
- **Object-Oriented Programming (OOP):** Designing classes and objects to represent entities such as cars, drivers, and users.
- Implementing encapsulation, inheritance, and polymorphism for code organization and reusability.
- **Functions:** Defining functions for specific tasks like booking a car, calculating expenses, etc.
- **Conditional Statements and Loops:** Using if statements and loops for decision-making and iterative processes in various parts of the program.
- **Dynamic Memory Allocation:** Allocating and deallocating memory dynamically as needed.
- **Exception Handling:** Implementing error handling mechanisms to manage unexpected situations or invalid inputs.
- **String Manipulation:** Performing operations on strings, such as concatenation or substring extraction, for handling textual data.
- **User Interface (Console-based):** Creating a user-friendly interface using cout and cin for displaying information, taking user input, and providing a smooth experience.
- **STL (Standard Template Library):** Using additional STL features and algorithms for enhanced efficiency and code readability in various parts of the project.