**Car Go Together**

* **IEEE Standard SRS Template :-**

1. **Introduction:-**

In today's fast-paced world, transportation is a crucial aspect of daily life. Commuters often face challenges such as traffic congestion, high fuel costs, and limited parking availability. Additionally, environmental concerns, like carbon emissions, have become increasingly important. Carpooling and ride-sharing platforms like BlaBlaCar offer a sustainable solution by connecting drivers with passengers traveling to similar destinations, thereby reducing the number of vehicles on the road, lowering travel costs, and minimizing environmental impact. This project aims to develop a ride-sharing platform that facilitates convenient, safe, and efficient carpooling services, encouraging shared travel and contributing to a greener environment.

This project aims to create a ride-sharing platform that builds upon the success of existing models like BlaBlaCar, while also introducing new features and capabilities that cater to the specific needs of modern commuters. The proposed platform will emphasize user convenience, safety, and environmental responsibility, making it easier for people to share rides, reduce travel costs, and minimize their impact on the environment.

In essence, this project is not just about creating a transportation service; it's about fostering a community of responsible travelers who prioritize sustainability, cost-efficiency, and the shared value of reducing traffic and pollution. By facilitating carpooling on a larger scale, this platform will contribute to a more sustainable future while meeting the practical needs of everyday commuters.

* 1. **Purpose :-**
* In today's fast-paced world, transportation is a crucial aspect of daily life. Commuters often face challenges such as traffic congestion, high fuel costs, and limited parking availability. Additionally, environmental concerns, like carbon emissions, have become increasingly important. Carpooling and ride-sharing platforms like BlaBlaCar offer a sustainable solution by connecting drivers with passengers traveling to similar destinations, thereby reducing the number of vehicles on the road, lowering travel costs, and minimizing environmental impact. This project aims to develop a ride-sharing platform that facilitates convenient, safe, and efficient carpooling services, encouraging shared travel and contributing to a greener environment.
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  1. **Scope :-**

1. User Management: Registration, authentication, and profile management.
2. Ride Listings: Creating, searching, and managing ride offers.
3. Booking System:- Allowing users to book seats in listed rides.
4. Payments:- Secure transactions between riders and drivers.
5. Geolocation Services:- Mapping and navigation integration for route planning.

The platform will focus on delivering essential features that make carpooling convenient and reliable for users. These include a straightforward ride-matching system that connects drivers with passengers heading in the same direction, ensuring minimal detours and efficient travel. Basic user preferences, such as preferred travel times, will be incorporated to enhance comfort. Additionally, the platform will provide secure booking and payment options, along with a simple rating and review system to build trust within the community. While the initial focus will be on core functionalities, the platform will be designed with future scalability in mind, allowing for the easy integration of new features as user demand grows.

* 1. **Definitions, acronyms & abbreviations :-**
  2. **References**
* [**www.google.com**](http://www.google.com)
* [**www.youtube.com**](http://www.youtube.com)
  1. **Overview :-**

The project aims to create a ride-sharing platform that connects drivers with passengers traveling to similar destinations, enabling efficient and cost-effective transportation. Inspired by existing carpooling services like BlaBlaCar, this platform will focus on providing users with a reliable, safe, and easy-to-use system for shared rides.

By encouraging carpooling, the platform addresses several key issues: reducing traffic congestion, lowering travel costs, and minimizing environmental impact through decreased fuel consumption and carbon emissions. The system will be accessible via a mobile app and web interface, offering core features such as ride listings, search options, secure payments, and real-time tracking.

The project is designed with a focus on scalability, safety, and user convenience, aiming to build a community of responsible travelers. With a strong emphasis on sustainability, the platform seeks to become a practical solution for everyday commuting challenges while contributing to the global effort to reduce the carbon footprint of personal transportation.

1. **Overall Description**

**2.1 Product perspective :-**

The ride-sharing platform is designed as an innovative solution within the broader landscape of modern transportation services. It will serve as a bridge between traditional public transit systems and private vehicle ownership, offering users the flexibility of personal travel without the associated costs and environmental impact.

From a **market perspective**, the platform is positioned alongside established ride-sharing services like BlaBlaCar, UberPOOL, and Lyft Line, but it differentiates itself by focusing primarily on carpooling for long and short distances, rather than on-demand ride-hailing. The platform aims to cater to commuters, students, professionals, and travelers seeking affordable and sustainable transportation options.

The platform's **technical architecture** is built on a mobile-first approach, but it also offers web accessibility to cater to a broader user base. It will integrate features such as GPS for real-time tracking, secure payment gateways for seamless transactions, and user profiles to build trust through ratings and reviews.

In the **user ecosystem**, the platform will serve two primary groups:

1. **Drivers**: Those who own a vehicle and are willing to offer empty seats to passengers heading in the same direction. Drivers can offset their travel costs by sharing the expenses with passengers.
2. **Passengers**: Individuals looking for an affordable and convenient way to reach their destinations. They can search for rides based on their schedules and locations, and choose the best option that suits their needs.

From an **operational perspective**, the platform will include an administrative panel for managing users, rides, and payments, as well as monitoring overall system performance. This ensures a smooth operation and allows administrators to handle user issues, disputes, and ride cancellations efficiently.

The platform fits into the **current trends of sustainable transportation** by encouraging shared mobility, reducing vehicle dependency, and fostering a sense of community among users. The product is built with scalability in mind, enabling future integration of additional features such as loyalty programs, route optimization algorithms, and corporate ride-sharing partnerships

**2.2 Product Functions :-**

* **User Registration and Authentication:**
* Allow users to sign up and log in using email, phone numbers, or social media accounts.
* Ensure secure authentication with options for two-factor verification.
* **Profile Management:**
* Users can create and edit their profiles, including adding personal information, vehicle details (for drivers), and preferences.
* Upload identification and vehicle-related documents for verification and safety purposes.
* **Ride Posting (for Drivers):**
* Drivers can list available rides by specifying their starting point, destination, departure time, number of available seats, and ride cost.
* Option to include additional preferences such as smoking/non-smoking, music preferences, or luggage capacity.
* **Ride Search and Filtering (for Passengers):**
* Passengers can search for available rides based on their preferred destination, travel date, and time.
* Filters available to narrow down search results (e.g., price range, number of seats, driver ratings, etc.).
* **Booking and Payment System:**
* Passengers can book a seat in a driver’s vehicle and make secure payments through integrated payment gateways (e.g., credit/debit cards, PayPal, etc.).
* Booking confirmation and payment receipts will be automatically generated and sent to users.
* **Real-Time Ride Tracking:**
* Integration with GPS allows both drivers and passengers to track the status of the ride in real time, ensuring timely pickups and route visibility.
* Passengers can monitor the driver’s location once a ride is booked.
* **Notification and Alerts:**
* Automated notifications for ride confirmations, cancellations, and upcoming ride reminders.
* Real-time alerts for any changes in ride details or delays.
* **Ratings and Reviews:**
* After completing a ride, both drivers and passengers can rate and review each other based on their experience.
* Ratings help build trust and reliability within the platform, influencing future booking decisions.

**UML Diagram**

**Class Diagram :-**

**Sequence Diagram :-**

**Use Case Diagram :-**

**Activity Diagram :-**