CARPOOL-COLLEGE

PROJECT

GROUP MEMBERS

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#Deliverable 1

Section 1

1.1 Purpose: Identify the product whose software requirements are specified in this document, including the revision or release number. Describe the scope of the product that is covered by this SRS, particularly if this SRS describes only part of the system or a single subsystem.

Carpool-College v1.0.0" is a dynamic software system designed at encouraging carpooling services within college communities. For students, instructors, and staff, the goal of this software is to make daily journeys more effective, affordable, and environmentally friendly. Due to a variety of factors, including a shortage of personal vehicles, and high parking costs. Many students and faculty members struggle with everyday travel. The carpooling platform provided by "Carpool-College v1.0.0" addresses these problems. Users can sign up on this platform by providing all the necessary details, such as their names, contact information, preferred pick-up and drop-off locations, and their usual time of day to commute.

By pairing people with similar paths, the program will allow shared transportation. This not only reduces the expense of traveling but also decreases the number of cars on the road, helping to create a greener environment. Users have the chance to offer their cars for carpooling, creating a community that is cooperative and friendly. "Carpool-College v1.0.0" will be included in the college's current digital infrastructure to allow for seamless user-carpooling service interaction. The software intends to build a strong network of shared mobility within the campus community, improving accessibility and sustainability of daily commutes.

Carpool-College v1.0.0" will increase social connections: Carpooling provides an opportunity to meet new people and build connections with fellow students who may share similar interests or courses. It can enhance your college experience by fostering new friendships and networking opportunities.

Enhanced safety: Carpooling can contribute to safer roads by reducing the number of vehicles on the street. Fewer cars may decrease the risk of accidents and traffic incidents, promoting a safer commuting experience.

The creation and application of "Carpool-College v1.0.0" are in line with the college's strategic objective of establishing a campus community that is more sustainable and collaborative. The college exhibits its dedication to offering cutting-edge solutions for its community while simultaneously promoting sustainability and shared resources by adopting this carpooling software.

1.2 Document Conventions:

ACRONYMS	DESCRIPTION
GPS	Global Positioning System
API	Application Programming Interface
UI	User Interface
DB	Database

1.3 Intended Audience and Reading Suggestions:

Goals and Recommended Reading: Several parties are expected for this SRS. It will be used by designers of user interfaces, user experiences, and software developers to better understand the features that need to be implemented. This document will be used by project managers to organize and track the project's progress. It can be used by college administrators to understand the system's capabilities. This document can be used by marketing staff to match promotional efforts with the potential of the project. Finally, testers from QA will use this document as the foundation for their testing scenarios and plans.

1.4 Project Scope:

Project Scope: "Carpool-College" v1.0.0 is an application of software created to make it easy for college students as well as staff to carpool. The goal is to offer a reliable, user-friendly, and secure ride-sharing network that cuts travel expenses, minimizes environmental impact, and promotes a sense of community. Also, to provide security and reliability. The software will include operations like ride scheduling, route planning, ride matching based on customer preferences, and a rating system. It will support the college's efforts to encourage environmentally friendly habits and participation in the community.

Sustainability and Environmental Responsibility: Colleges and universities often have sustainability goals and strategies aimed at reducing their environmental impact. By promoting carpooling and reducing individual vehicle usage, "Carpool-College" aligns with these sustainability objectives. It helps colleges and universities demonstrate their commitment to environmentally responsible practices and contribute to a greener campus.

Cost Optimization: Educational institutions face budgetary challenges, and cost optimization is an important aspect of their strategies. "Carpool-College" helps reduce transportation costs for the college community by sharing fuel expenses and parking fees among carpooling participants. This aligns with the goal of cost reduction and helps colleges and universities allocate resources efficiently.

Student and Faculty Satisfaction: Colleges and universities prioritize student and faculty satisfaction as part of their strategic objectives. By implementing "Carpool-College" or a similar carpooling software, institutions can provide a convenient and cost-effective transportation solution for their community members. This improves commuting convenience, reduces financial burdens, and enhances overall satisfaction.

Campus Sustainability Initiatives: Many colleges and universities have specific initiatives focused on sustainability and reducing the institution's environmental footprint. "Carpool-College" contributes to these initiatives by reducing campus traffic congestion, minimizing parking space requirements, and promoting eco-friendly transportation practices. It aligns with the strategic goal of creating a sustainable campus environment.

Community Building and Collaboration: "Carpool-College" fosters a sense of community and collaboration within the college environment. By connecting students, faculty, and staff who share similar commuting routes, the software encourages social interaction and networking opportunities. It aligns with the strategic goal of creating a cohesive campus community and enhancing collaboration among members.

1.5 References:

- https://www.forbes.com/sites/jeffkart/2018/10/12/wheeli-carpooling-app-connects-college-students-cuts-traffic-saves-gas/?sh=771590916960
- https://www.mohawkcollege.ca/carpooling-resources#:~:text=What%20are%20the%20benefits%3F,where%20you're%20going%20faster
- https://www.liftango.com/resources/university-carpool-programs
- https://www.linkedin.com/pulse/benefits-carpool-poolitapp
- https://www.prnewswire.com/news-releases/carpooling-to-school-has-benefits-300044006.html
- https://en.wikipedia.org/wiki/Carpool
- https://www.liftango.com/resources/what-is-carpooling

Section 2

2.1 Product Perspective: Carpool-College v1.0.0 is a brand-new, standalone software application created especially for college campuses. It is not a new product in a family of products, nor is it a substitute for any current systems. To offer smooth user-carpooling service interaction, it might connect to the college's current digital infrastructure.

2.2 Product Functions (Features):

The primary attributes of Carpool-College v1.0.0 are as follows:

- User enrolment and profile development
- scheduling and controlling rides
- Planning and enhancing a route
- Based on user preferences, match rides
- User evaluation and feedback mechanism
- GPS and mapping services integration
- Users' interactions and notifications
- Administration-specific analytics and reporting

2.3 User Classes and Characteristics:

The following user groups may be included in Carpool-College v1.0.0:

i. Students: Students who desire to carpool for their regular trips to school.
ii. Faculty and staff: Who desires to take part in carpooling are referred to as instructors and staff.
iii. College executives: Will oversee and coordinate the carpooling program.

These user classes may differ in terms of traits and responsibilities within the software.

2.4 Operating Environment:

The following conditions will be present for the software to function:

Hardware Platform: It is compatible with a range of hardware, including tablets, laptops, smartphones, and desktop computers.

Operating system: It will work with Windows, macOS, Linux, iOS, and Android, among other operating systems.

Web browsers: It will be compatible with well-known web browsers like Edge, Chrome, Firefox, and Safari.

Database: To store and retrieve user data, the software will make use of a database management system like MongoDB.

2.7 Assumptions and Dependencies:

For Carpool-College version 1.0.0, some assumptions and dependencies might be:

- ✓ Internet access is required for users to access the software.
- ✓ integration of GPS and mapping APIs, among other third-party services, to deliver precise location and route data.
- ✓ adherence to applicable privacy and data protection laws.
- ✓ Having access to the college's current digital infrastructure will enable easy communication with the carpooling app.
- ✓ When developing and deploying the software, these presumptions and dependencies should be considered.

Section 3

3.1 User Interfaces:

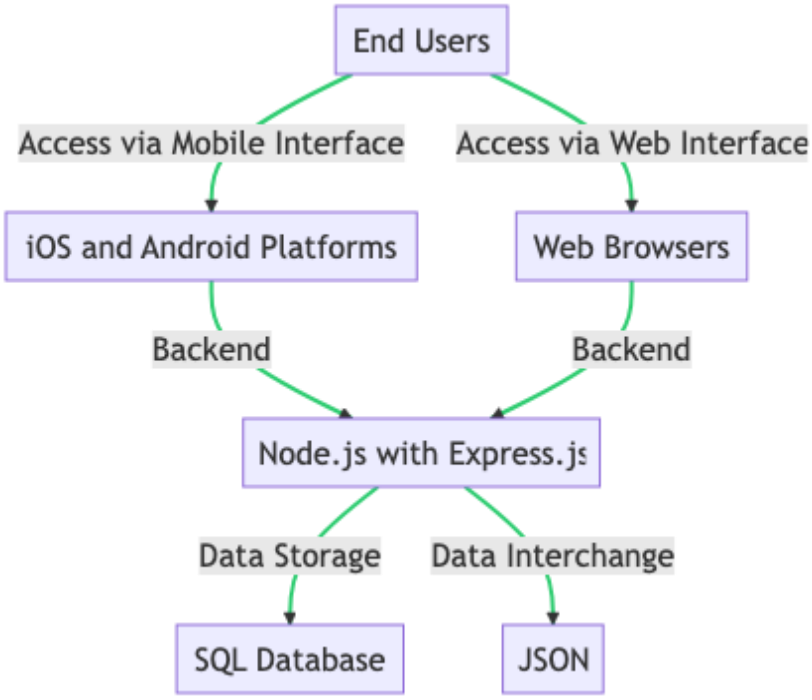
End users will access the Transportation system through 2 main interfaces:

Mobile Interface: The system will have a mobile interface that supports both iOS and Android platforms. This will allow users to access the system on their smartphones, which is convenient and user-friendly.

Web Interface: The system will also be accessible through a web interface. This interface will support major web browsers such as Google Chrome, Firefox, Safari, and Microsoft Edge.

The backend of the system will be developed using Node.js with Express.js. This backend will interact with a SQL database for data storage and will use JSON for data interchange between the front end and the back end.

System Context Diagram:



3.2 Hardware Interfaces:

The Transportation system will interface with the following hardware devices:

GPS Device: The system will interface with the GPS device on the user's smartphone or vehicle to track the location of the vehicle and provide real-time updates.

Smartphone: The system will interface with the user's smartphone to send notifications, reminders, and updates.

3.3 Software Interfaces:

The AKLAK Transportation system will need to interact with the following third-party software:

Google Maps API: The system will use the Google Maps API for route planning and navigation.

Payment Gateway: The system will interface with a payment gateway to handle transactions for transportation services.

SMS Gateway: The system will interface with an SMS gateway to send notifications and reminders to users via text message.

#Deliverable 2

Stakeholder Register

Stakeholder Name	Stakeholder Position	Stakeholder Type	Email	Role	Interest Level
Michael Brown	Customer	External	michael.brown@email.com	Operational	High
David Johnson	Driver	External	david.johnson@email.com	Operational	High
Jessica Taylor	IT Support	Internal	jessica.taylor@aklak.com	Operational	Medium
Olivia Martinez	AKLAK Management	Internal	olivia.martinez@aklak.com	Strategic	High
George Wilson	Local Government Representative	External	george.wilson@gov.com	Regulatory	Medium
Emily Clark	Marketing Manager	Internal	emily.clark@aklak.com	Operational	Medium

#Deliverable 3

Interview Questions	Stakeholder Position	Answer
What features would you find most useful in a transportation service app?	Customer	Real-time tracking of the vehicle, easy booking process, and secure payment options.

What kind of information would you like to access from a transportation service app?	Driver	Customer location, destination, and contact information. Also, the payment status of the ride.
What features would facilitate the process of providing transportation services?	AKLAK Management	A dashboard to monitor all active rides, driver performance, and customer feedback.

#Deliverable 4

Requirement ID	Requirement Type	Requirement Description	Priority	Stakeholder
FR01	Functional	The system should allow customers to create and update their profiles	High	Customer
FR02	Functional	The system should allow customers to book transportation services	High	Customer
FR03	Functional	The system should facilitate the arrangement of transportation services	High	Driver

FR04	Functional	The system should provide real-time tracking of transportation services	High	Customer
FR05	Functional	The system should facilitate payment for transportation services	High	Customer
NFR01	Non-functional	The system should handle 1000 concurrent users	High	IT Support
NFR02	Non-functional	The system should pass DDoS testing, penetration testing, and malicious script testing	High	IT Support
NFR03	Non-functional	The system should be compatible with iOS and Android	Medium	Customer
NFR04	Non-functional	The system should provide a user-friendly interface	Medium	Customer
NFR05	Non-functional	The system should comply with data privacy laws and transportation regulations	High	Local Government Representative