H.H THE RAJAH'S COLLEGE
PUDUKKOTTAI – 622 001

DEPARTMENT OF MATHEMATICS

NAAN MUDHALVAN – SMART BRIDGE PROJECT

PROJECT TITLE

VEHICLE MANAGEMENT SYSTEM USING SALESFORCE

SUBMITTED BY

TEAM LEADER	**:**	**AJAY S (20MT 2252)**
TEAM MEMBER 1	**:**	**AZHAGARSAMY (20MT 2257)**
TEAM MEMBER 2	**:**	**KALAIVANAN M (20MT 2264)**
TEAM MEMBER 3	**:**	**KARAN R (20MT 2288)**

Faculty Mentor

Dr. K. L. MURUGANANTHA PRASAD
Assistant Professor of Mathematics
H. H. The Rajah's College, Pudukkottai – 622 001.

INDEX

1. INTRODUCTION

Vehicle management refers to the process of organizing and controlling the use, maintenance, and repair of a fleet of vehicles, such as cars, trucks, buses, or any other type of vehicle used for business or personal purposes. The primary goal of vehicle management is to ensure that vehicles are operating efficiently, safely, and cost-effectively, and that they are utilized to their full potential.

Vehicle management involves various tasks such as acquiring new vehicles, scheduling and tracking vehicle maintenance, managing fuel consumption, ensuring compliance with safety and environmental regulations, managing driver behavior, optimizing routes and reducing vehicle downtime, among others. Effective vehicle management can lead to improved productivity, reduced operating costs, increased safety, and a better overall performance of the fleet

1.1 OVERVIEW

1. Vehicle management refers to the process of overseeing and controlling a fleet of vehicles, including cars, trucks, buses, and other types of vehicles. It involves various activities such as acquisition, maintenance, operation, and disposal of vehicles. The main goal of vehicle management is to ensure that vehicles are utilized effectively, efficiently, and safely to meet the transportation needs of an organization or a community.

2. Vehicle management encompasses several tasks, such as vehicle procurement, maintenance scheduling, fuel management, and driver management. It also involves ensuring compliance with local, state, and federal regulations related to vehicle use and safety. Effective vehicle

management helps to reduce costs associated with vehicle operation, improve fleet safety, and enhance overall productivity.

3. Some of the key components of vehicle management include fleet tracking and telematics systems, which provide real-time information about vehicle location, speed, and fuel consumption. This information can help managers make informed decisions about vehicle utilization, maintenance, and driver behaviour.

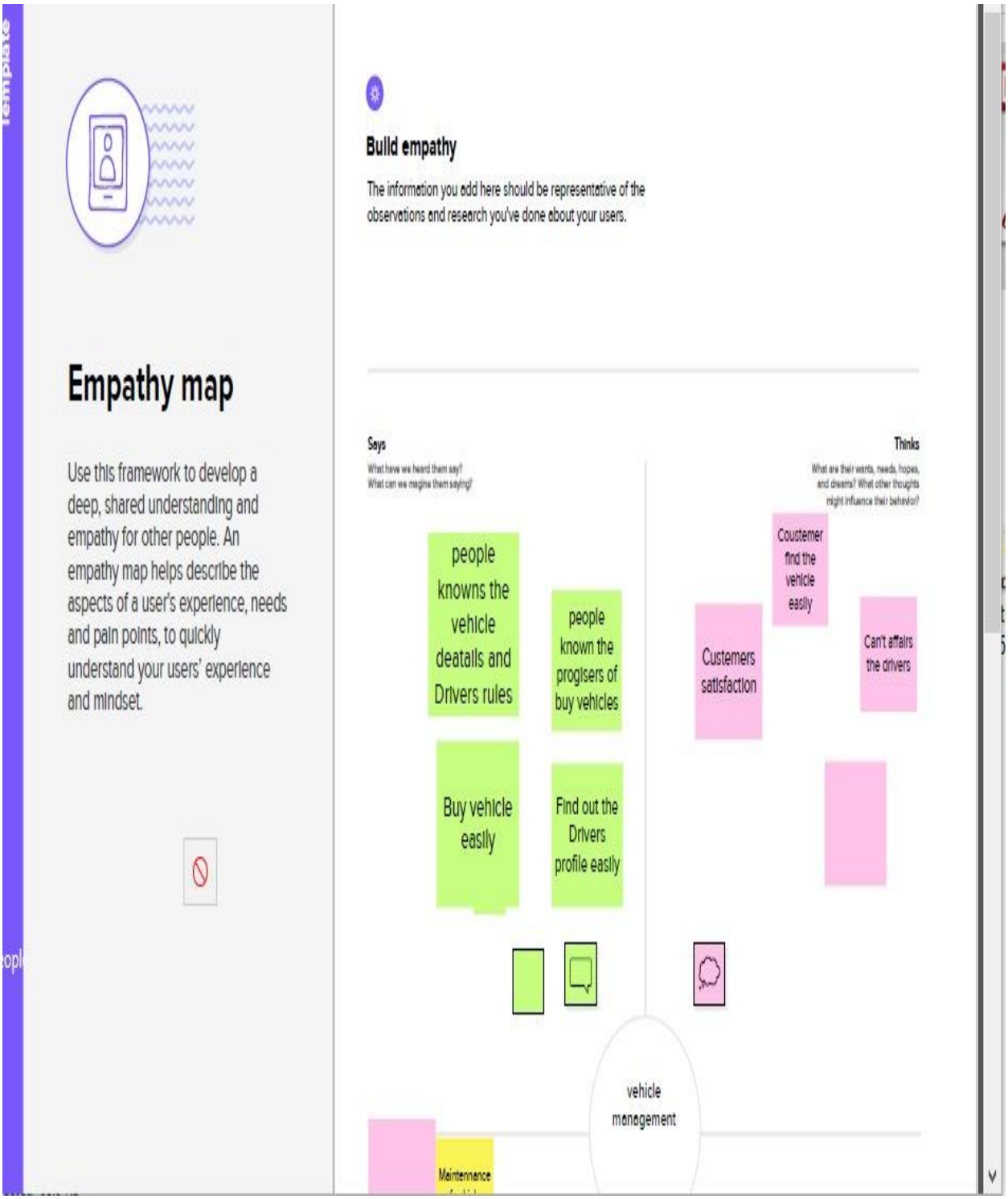
4. Overall, vehicle management plays a crucial role in ensuring the efficient and safe operation of a fleet of vehicles. It requires careful planning, implementation, and monitoring of various processes and technologies to achieve optimal results.

1.2 PURPOSE

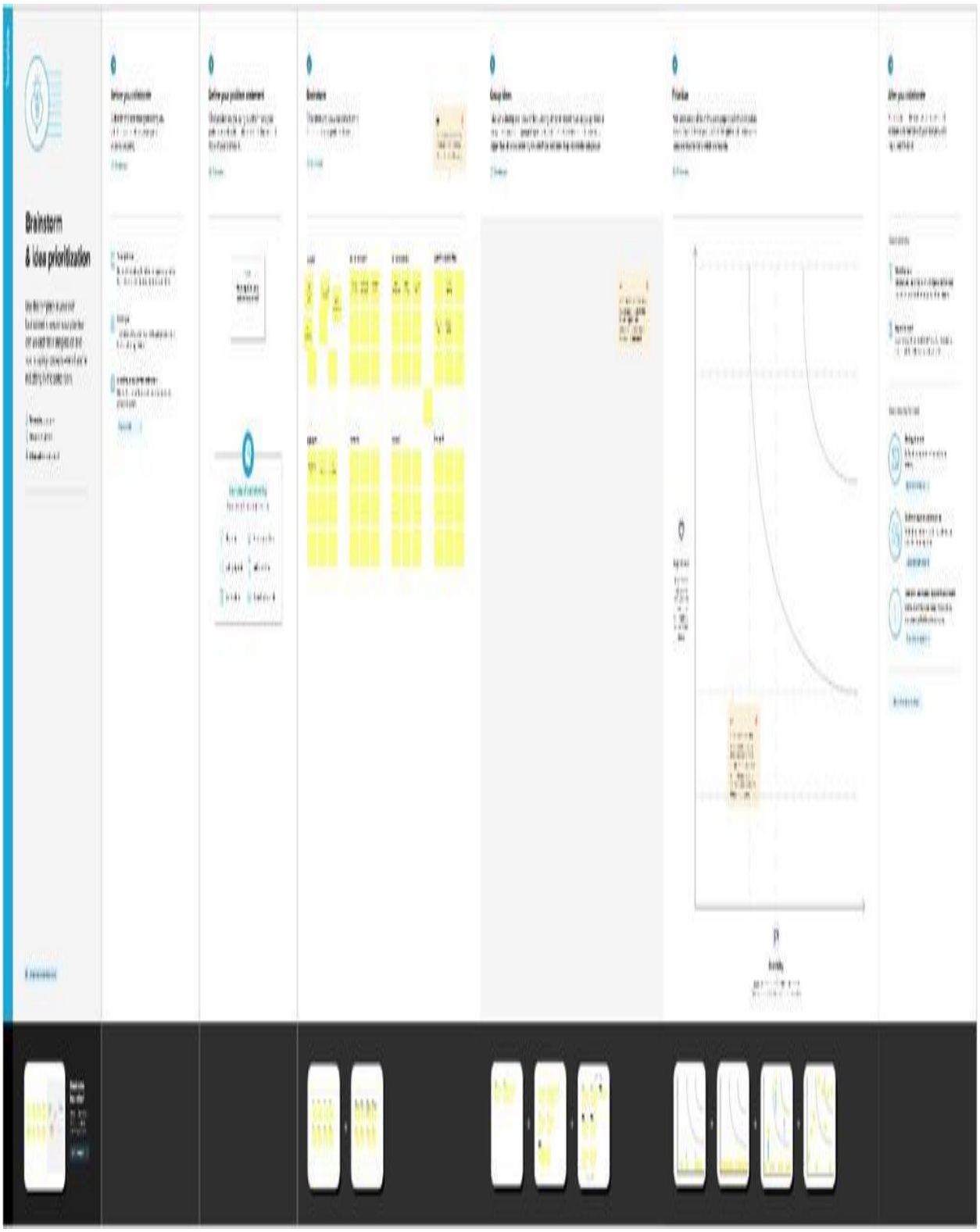
1. Fleet management: Vehicle management can be used to manage a fleet of vehicles, including monitoring vehicle performance, scheduling maintenance, and tracking vehicle usage.
2. Fuel management: Vehicle management can be used to track fuel and identify ways to reduce fuel costs, such as by optimizing routes or encouraging more efficient driving.

PROBLEM DEFINITION & DESIGN THINKING :

2.1 EMPATHY MAP :



2.2 IDEATION & BRAIN STORMING MAP :



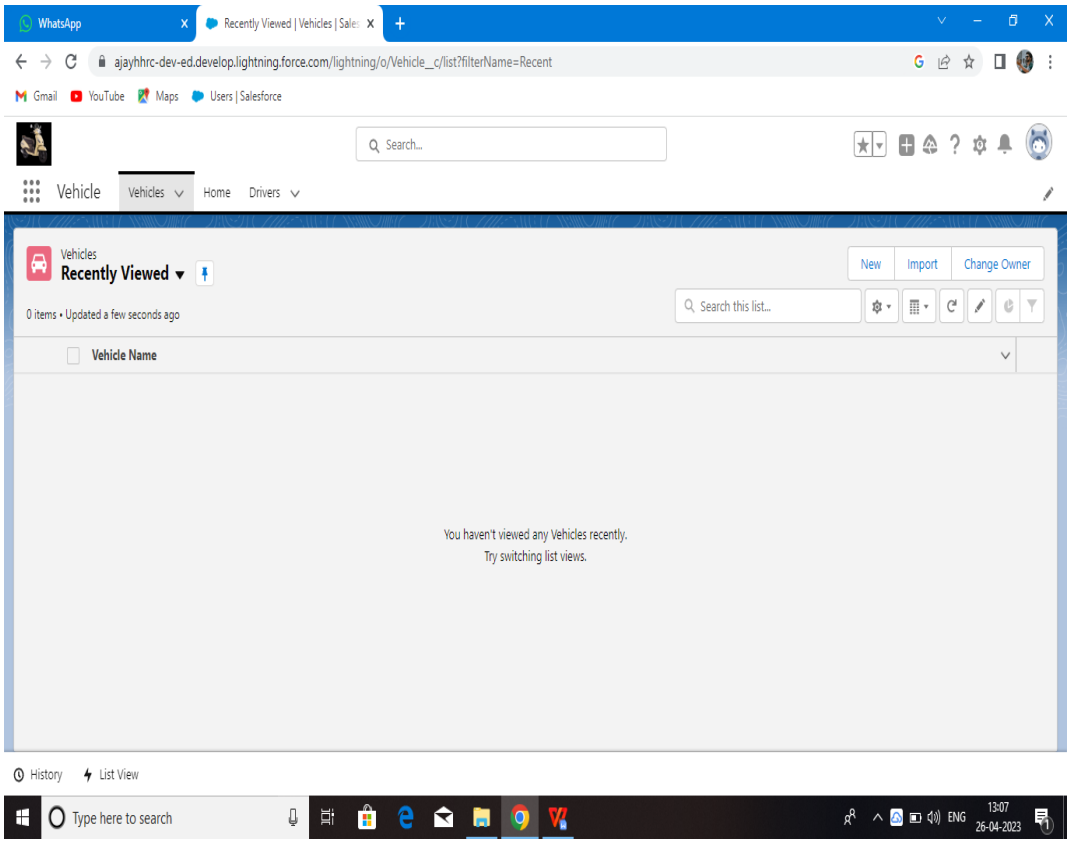
3. RESULT :

DATA MODEL :

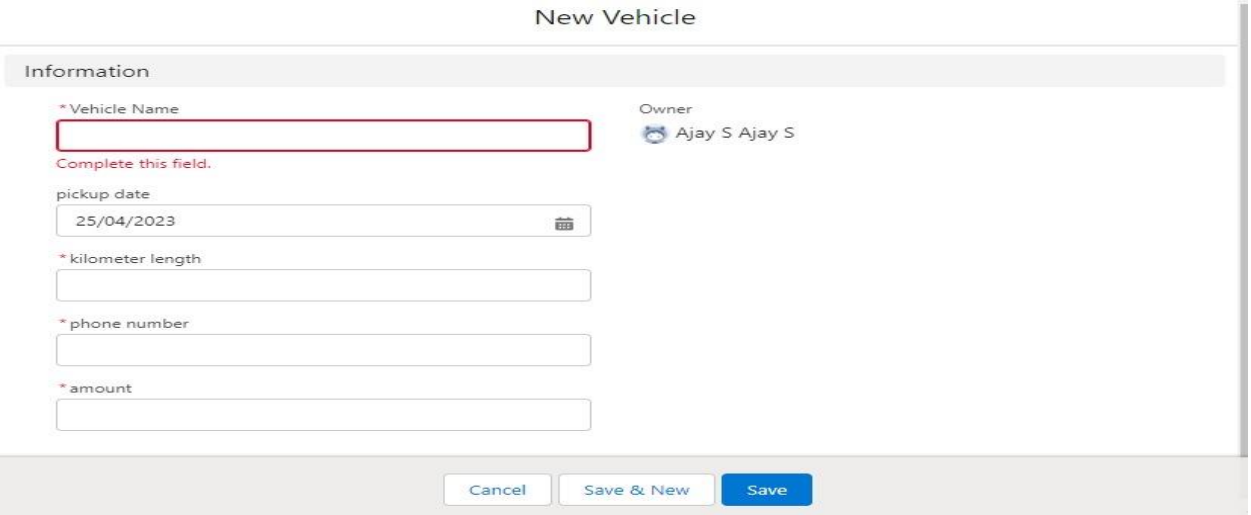
<table>
<tr><th>Object Name</th><th>Fields in the object</th></tr>
<tr><td>Object 1: VEHICLE</td><td>
<table>
<tr><th>Field Label</th><th>Data Type</th></tr>
<tr><td>Vehicle</td><td>Vehicle name</td></tr>
<tr><td></td><td>Pickup date</td></tr>
<tr><td></td><td>Kilometer length</td></tr>
<tr><td></td><td>Phone number</td></tr>
<tr><td></td><td>amount</td></tr>
</table>
</td></tr>
<tr><td>Object 2: DRIVER</td><td>
<table>
<tr><th>Field Label</th><th>Data Type</th></tr>
<tr><td>Driver</td><td>Driver name</td></tr>
<tr><td></td><td>Latitude</td></tr>
<tr><td></td><td>Longitude</td></tr>
<tr><td></td><td>Time</td></tr>
<tr><td></td><td>Phone number</td></tr>
</table>
</td></tr>
</table>

3.2 Activity & Screenshot

Vehicle Management APP

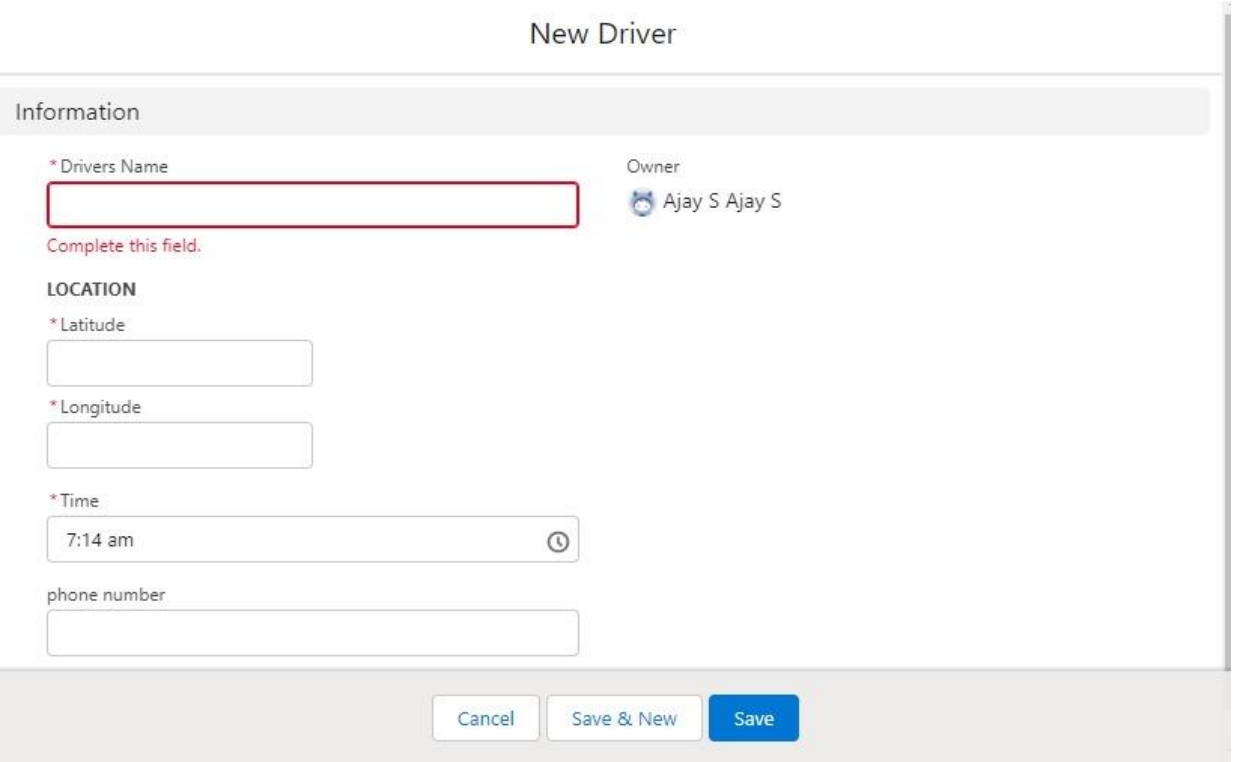


Object 1 : VEHICLE



To know the availability and maintenance about the vehicle.

Object 2 : DRIVER



Availability of Drivers and drivers on duty particulars will be known.

4 Trailhead Profile Public URL

Team Lead : https://trailblazer.me/id/aajays2

Team Member 1 : https://trailblazer.me/id/aazhagarsamyr

Team Member 2 : https://trailblazer.me/id/kvanan9

Team Member 3 : https://trailblazer.me/id/aamuthukkaruppan

Team Member 4 : https://trailblazer.me/id/kkaran74

5 ADVANTAGE & DISADVANTAGE

Advantages:

1. Improved Efficiency: Vehicle management can help to optimize the use of vehicles, reducing downtime and improving overall efficiency.
2. Cost Savings: By effectively managing vehicles, organizations can reduce fuel costs, maintenance costs, and other expenses associated with vehicle ownership and operation.
3. Increased Safety: Proper vehicle management can help to improve safety by ensuring that vehicles are properly maintained, drivers are properly trained, and vehicles are operated safely.
4. Compliance: Effective vehicle management can help organizations to comply with regulations related to vehicle operation, such as those related to emissions and safety

Disadvantages:

1. Initial Investment: Implementing a vehicle management system can require a significant upfront investment, including the cost of purchasing software, hardware, and other equipment.
2. Training: Ensuring that all employees are properly trained to use the vehicle management system can require additional time and resources.
3. Data Security: Vehicle management systems store sensitive data related to vehicles, drivers, and operations, which can be vulnerable to cyber-attacks or other security breaches.
4. Privacy Concerns: Employees may have concerns about their privacy when a vehicle management system tracks their location and driving habits.

6 APPLICATIONS

1. Commercial fleet management: Businesses with a fleet of vehicles, such as delivery companies or transportation services, use vehicle management systems to optimize routes, track driver behavior, and monitor fuel consumption to reduce operating costs and improve efficiency.
2. Rental car management: Rental car companies use vehicle management systems to track their fleet's location, mileage, and maintenance schedule to ensure their vehicles are in good condition and available for rent.
3. Personal vehicle management: Individuals can use vehicle management apps to keep track of their car's maintenance schedule, fuel economy, and other data to ensure their vehicle is running smoothly and avoid unexpected repairs.

4. Public transportation management: Public transportation agencies use vehicle management systems to track their buses and trains, optimize routes, and manage schedules to ensure timely service and improve passenger experience.
5. Emergency vehicle management: Emergency services such as police, fire, and ambulance services use vehicle management systems to track their vehicles' location, speed, and fuel consumption to respond to emergencies more efficiently.

7 CONCLUSION

Vehicle management is an important process for organizations with large vehicle fleets. While there are some disadvantages, such as the initial investment required and privacy concerns for employees, the benefits of vehicle management outweigh the drawbacks. Proper vehicle management can improve efficiency, reduce costs, increase safety, and ensure compliance with regulations. Organizations that implement an effective vehicle management system can optimize the use of their vehicles, reduce downtime, and improve overall operations. It is important to consider the potential downsides and take steps to mitigate any risks associated with implementing a vehicle management system. Ultimately, the success of a vehicle management system depends on proper planning, implementation, and ongoing management.

Autonomous Vehicles: As autonomous vehicle technology continues to advance, the role of human drivers in vehicle management may diminish. Automated vehicle management systems could potentially optimize routing, reduce fuel consumption, and improve safety.

8 FUTURE SCOPE

1. Autonomous Vehicles: As autonomous vehicle technology continues to advance, the role of human drivers in vehicle management may diminish. Automated vehicle management systems could potentially optimize routing, reduce fuel consumption, and improve safety.
2. Internet of Things (IoT): The IoT involves connecting devices to the internet to enable data sharing and remote monitoring. In the context of vehicle management, IoT technology could enable real-time tracking of vehicles, as well as monitoring of vehicle performance and maintenance needs.
3. Predictive Maintenance: By analyzing data from sensors and other sources, vehicle management systems may be able to predict when maintenance is needed and proactively address issues before they become major problems.
4. Vehicle-to-Vehicle (V2V) Communication: V2V communication involves vehicles exchanging data with each other to enable real-time routing and other optimizations. This technology could potentially improve traffic flow and reduce accidents.
5. Telematics: Telematics involves using sensors and GPS technology to track vehicle location, performance, and other data. This information can be used to optimize routing and improve driver behavior