BHARATHI WOMEN'S COLLEGE (AUTONOMOUS)

CHENNAI-600 108

VEHICLE MANAGEMENT SYSTEM USING SALESFORCE

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OBJECTIVE :

The main objectives of vehicle management system using Salesforce are to:

Vehicle and Driver Management: This system can help organizations keep track of their vehicles and drivers, including details such as maintenance history, driver records, and license renewals. By centralizing this information, organizations can make more informed decisions about their fleet operations, such as which vehicles to retire, which drivers need additional training, and which vehicles require.

Route Optimization: By using GPS and other real-time data, a vehicle management system can help organizations optimize their vehicle routes and schedules, reducing fuel consumption, improving delivery times, and reducing wear and tear on vehicles.

Compliance: A vehicle management system can help organizations comply with various regulations related to their fleet operations, such as hours-of-service rules for drivers and emissions standards for vehicles. By automating compliance processes, organizations can reduce the risk of costly fines and penalties.

Real-Time Visibility: By providing real-time visibility into the location and status of vehicles, a vehicle management system can help organizations make more informed decisions about their operations. This can be especially important for organizations that need to respond quickly to changing conditions, such as emergency services or transportation providers.

1.INTRODUCTION

1.1 Overview

Salesforce's vehicle management system offers a range of features, including real-time tracking of vehicle locations, monitoring of driver behaviour, automated maintenance scheduling, fuel usage tracking, and the ability to generate detailed reports on fleet performance. The system can also integrate with other Salesforce products, such as Service Cloud, to provide a comprehensive view of a customer's entire experience with an organization, from initial contact to post-sale service and support. In addition to providing operational benefits, such as improved efficiency and cost savings, Salesforce's vehicle management system can also help organizations meet regulatory compliance requirements, such as those related to vehicle safety and emissions.

1.2 Purpose

Fleet Optimization: By tracking key metrics such as fuel consumption, driver behaviour, and maintenance schedules, vehicle management systems can help organizations optimize their fleet of vehicles, reducing costs and improving efficiency.

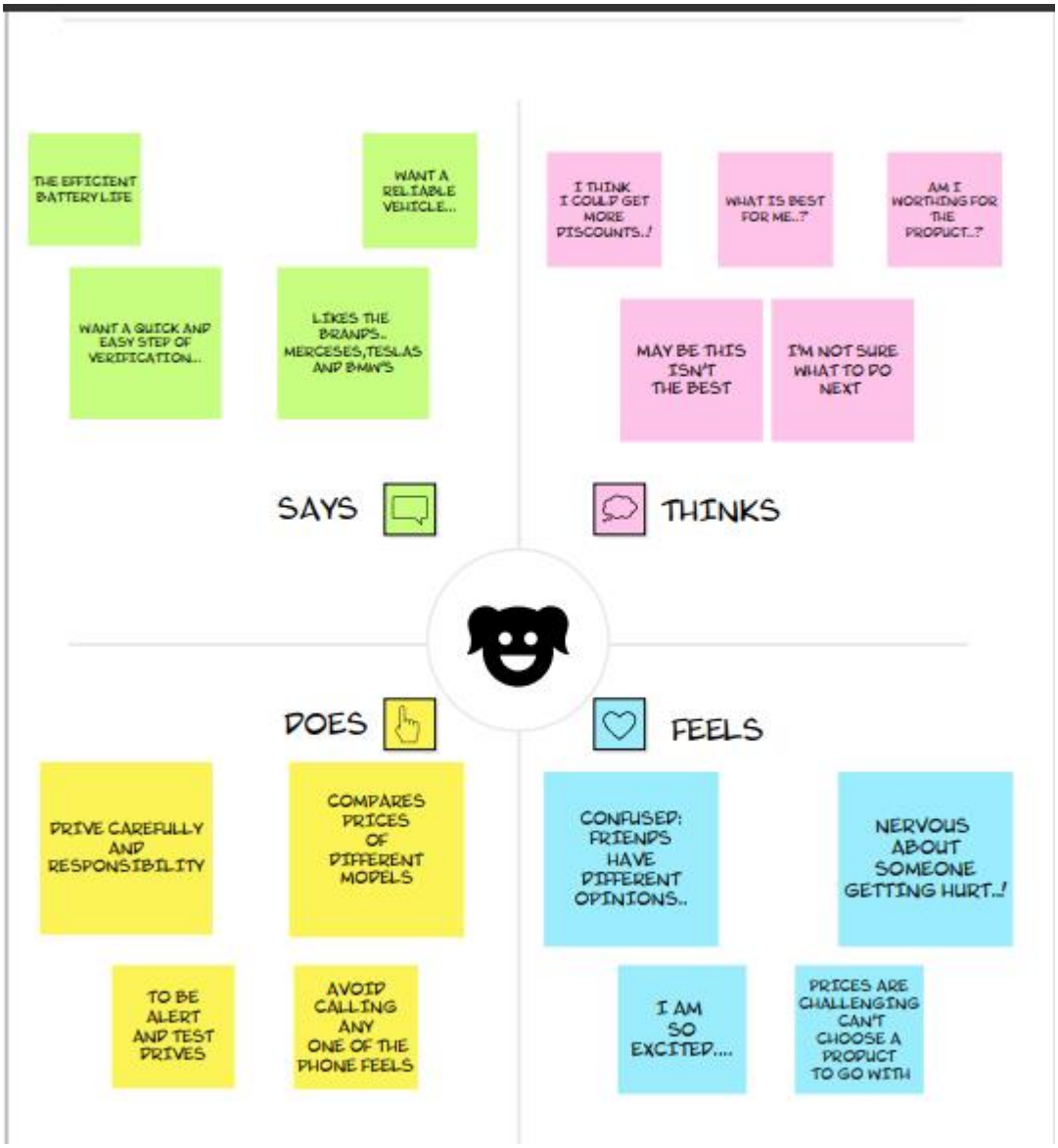
Regulatory Compliance: With increasing regulations related to vehicle safety and emissions, vehicle management systems can help organizations ensure compliance and avoid costly fines and penalties.

Improved Safety: Vehicle management systems can monitor driver behaviour and provide alerts for unsafe driving practices, helping to improve safety on the road and reduce the risk of accidents.

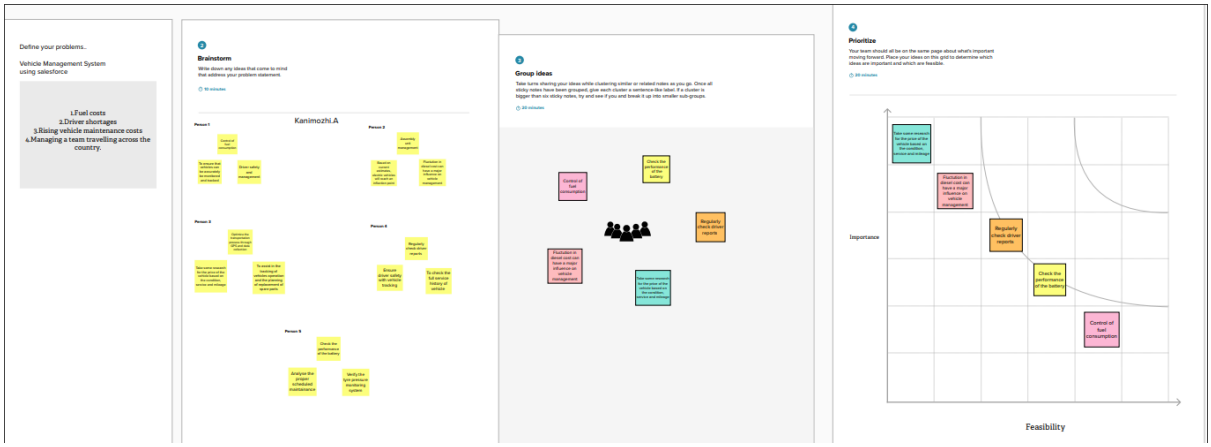
Customer Experience: By integrating with other Salesforce products such as Service Cloud, vehicle management systems can provide a comprehensive view of a customer's entire experience with an organization, from initial contact to post-sale service and support.

2. Problem Definition & Design Thinking

2.1 Empathy Map



2.2 Ideation & Brainstorming Map



3.Result

3.1 Data Model:

Object Name	Fields in the Object	
Object 1 Vehicles	**Field Labels**	**Data Types**
	1.Customer Name	Text
	2.Customer Mobile No	Number
	3.Vehicle Type i)2 wheeler ii)4 wheeler	Picklist
	4. 2 Wheelers i)Hero ii)Honda iii)Bajaj iv)Royal Enfield v)TVS vi)Kinetic vii)Ola viii)Jawa ix)SD x)Battery	Picklist

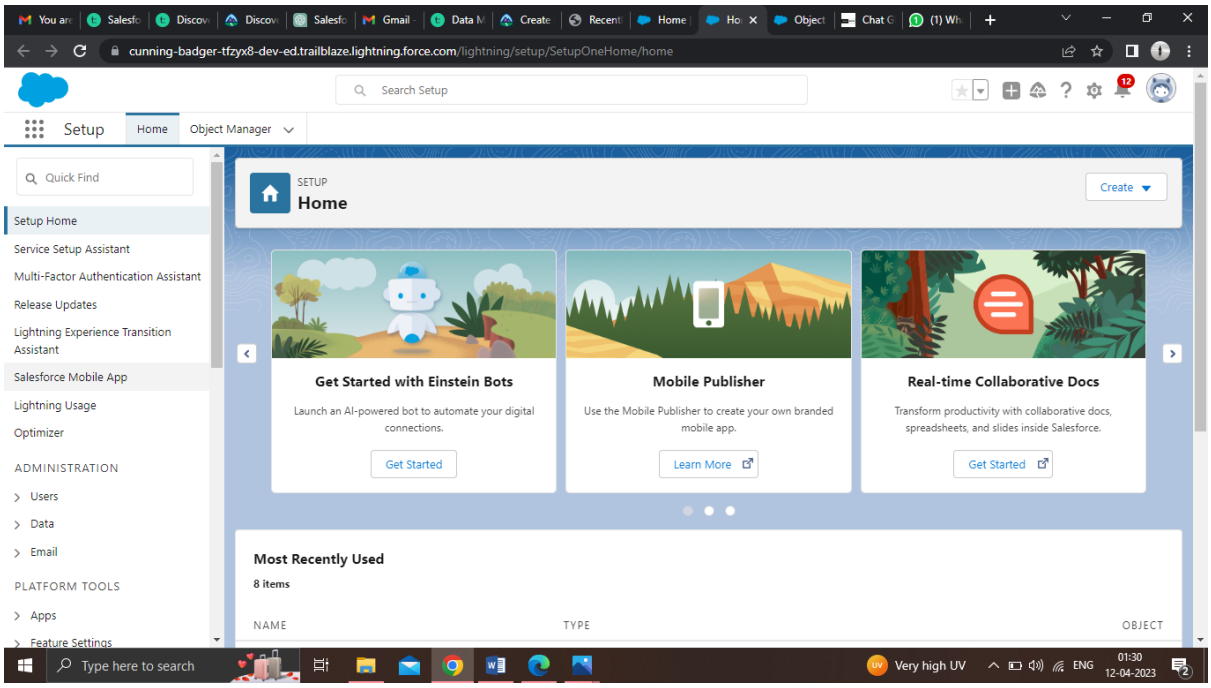
	5. 4 Wheelers i)Renault ii)Skoda iii)Honda iv)Hyundai v)Suzuki vi)Mahindra vii)Volkswagen viii)Benz ix)Audi x)Volvo	Picklist
	6.Vehicle Name	Text
	7.Vehicle No	Text
	8.Chassic No	Text
	9.Colour	Text
	10.Body Type	Text
	11.Vehicle Includes i)Fire Extenuation ii)First Aid Kit iii)Multi Charger Kit iv)Stepney v)Stereo vi)Tool Kit vii)Tracking Device viii)Tyre Jack	Multi Picklist
	12.Condition i)Good ii)Medium iii)Least	Picklist
	13.Mileage	Text
	14.Seats	Number
	15.Start Date	Date/Time
	16.End Date	Date/Time
	17.Opportunity	Lookup (Opportunities)
Object 2 Drivers	**Field Labels**	**Data Types**
	1.Driver Name	Text
	2.Licence No	Text
	3.Mobile No	Number
	4.Fair Per Hour	Text
	5.Vehicle	Lookup (Vehicle)

3.2 ACTIVITY

Milestone -1: Creation Salesforce Org

ACTIVITY 1: Creating a Developer Account

Creating a developer org in salesforce.



DESCRIPTION:

- Go to **developers.salesforce.com/**
- Click the sign up.
- On the sign up form, enter the following details:

a. First name & Last name

b. Email

c. Role : Developer

d. Company : College Name

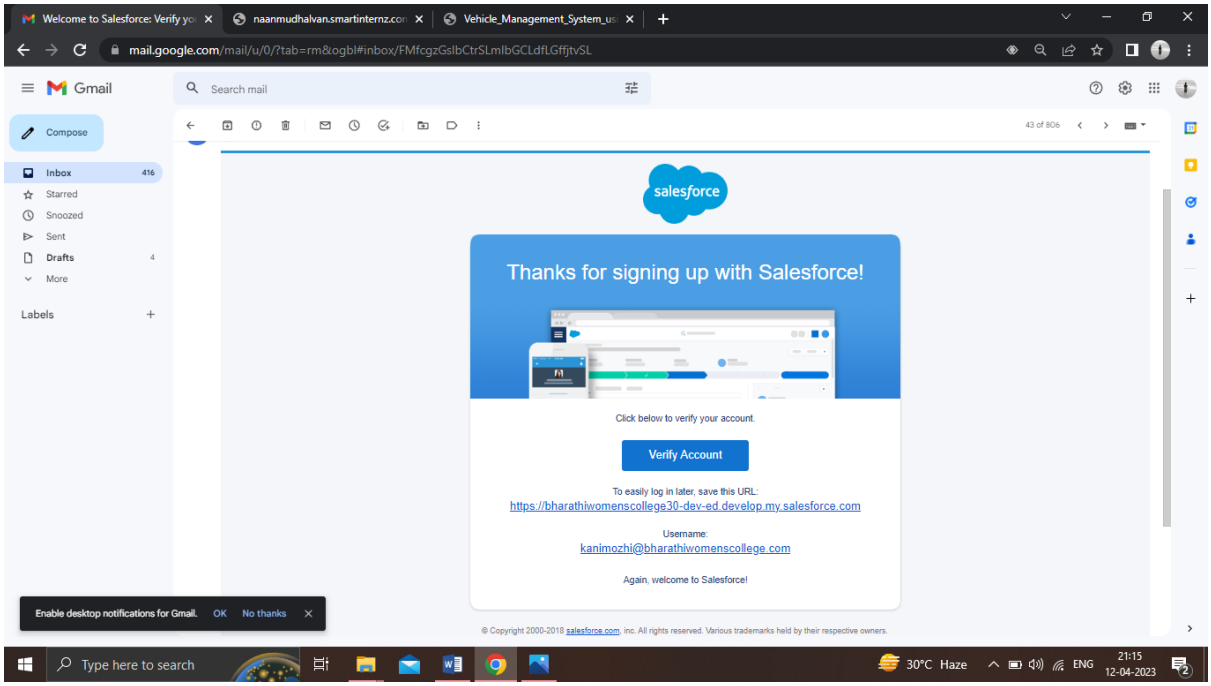
e. County : India

f. Postal Code : pin code

g. Username : should be a combination of your name and company.

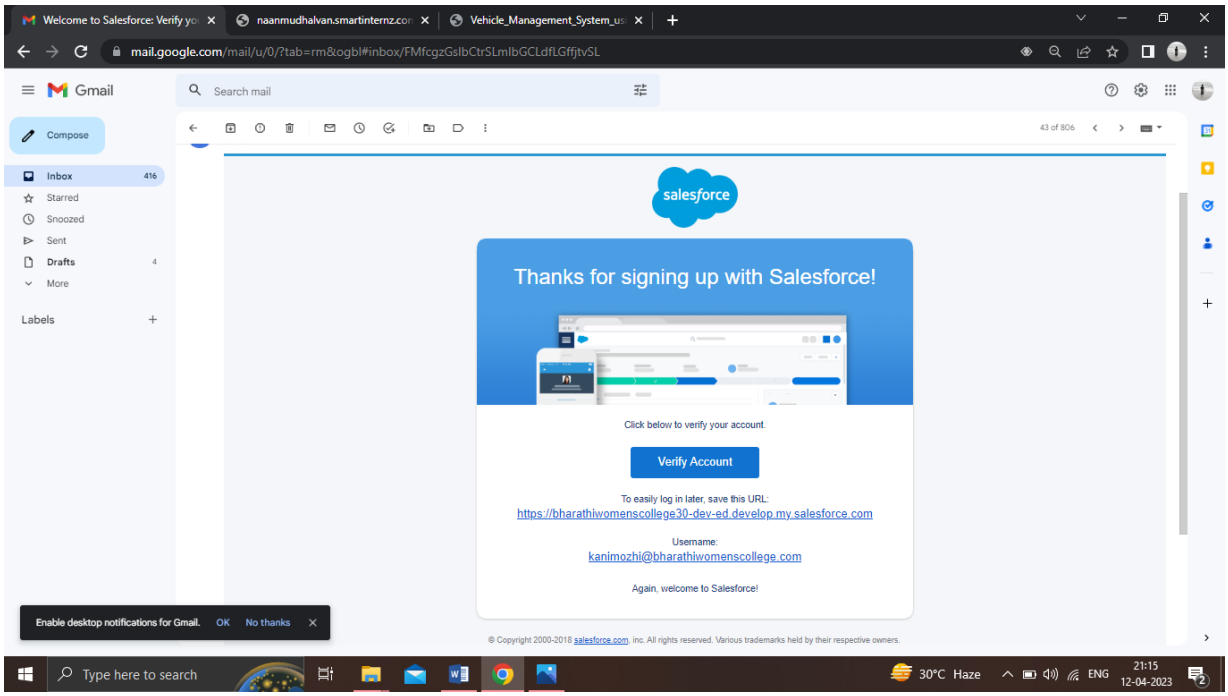
This need not be an actual email id, you can give anything in the format: **username@organization.com**

Account Activation



Salesforce Login

htttps://login.salesforce.com



Milestone-2: Object

Activity 1:

To Create an object:

Creation of Objects for Vehicle Management, For this Vehicle Management we need to create 2 objects i.e. Vehicles, Driver.

The below steps will assist you in creating those objects.

● Click on the gear icon and then select Setup.

● Click on the object manager tab just beside the home tab.

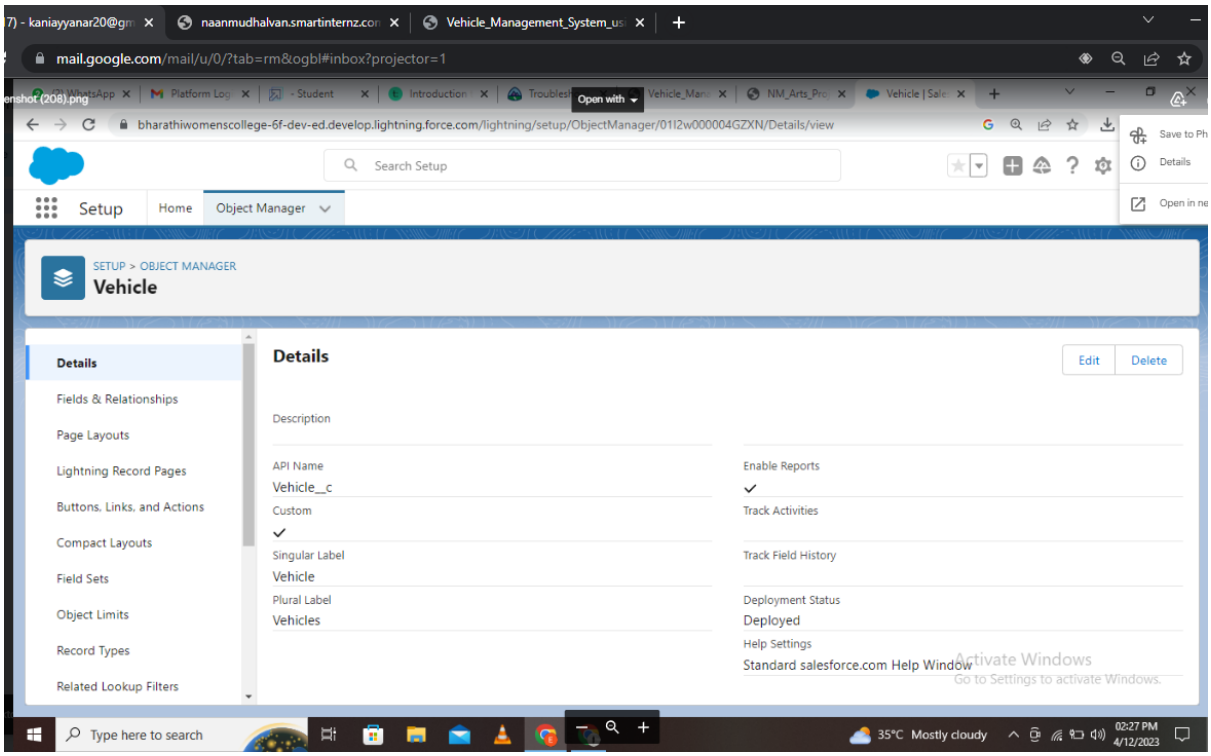
● After the above steps, have a look on the extreme right you will find a Create Dropdown click on that and select Custom Object.

● Creation of Vehicle Object On the Custom Object Definition page, create the object as follows:

●Label: Vehicle

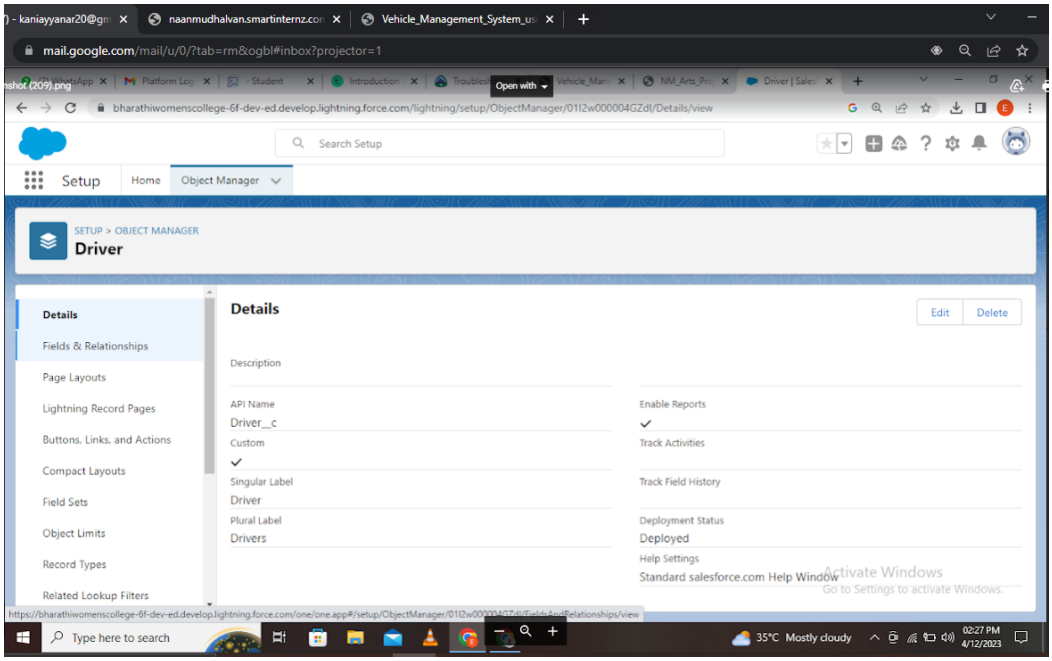
● Plural Label: Vehicles

- Record Name: Vehicle Name
- Check the Allow Reports checkbox
- Check the Allow Search checkbox
- Click Save.
- Now create a custom tab. Click the Home tab, enter Tabs in Quick Find and select Tabs.
- Under Custom Object Tabs, click New.
- For Object, select Vehicle.
- For Tab Style, select any icon.
- Leave all defaults as is. Click Next, Next, and Save.



Activity 2:

To Create a driver object continue the same steps Which is followed for the above object.



Milestone -3: Fields and Relationship

Activity-1:

Creation of fields:

Fields in Vehicles objects follow below data types:

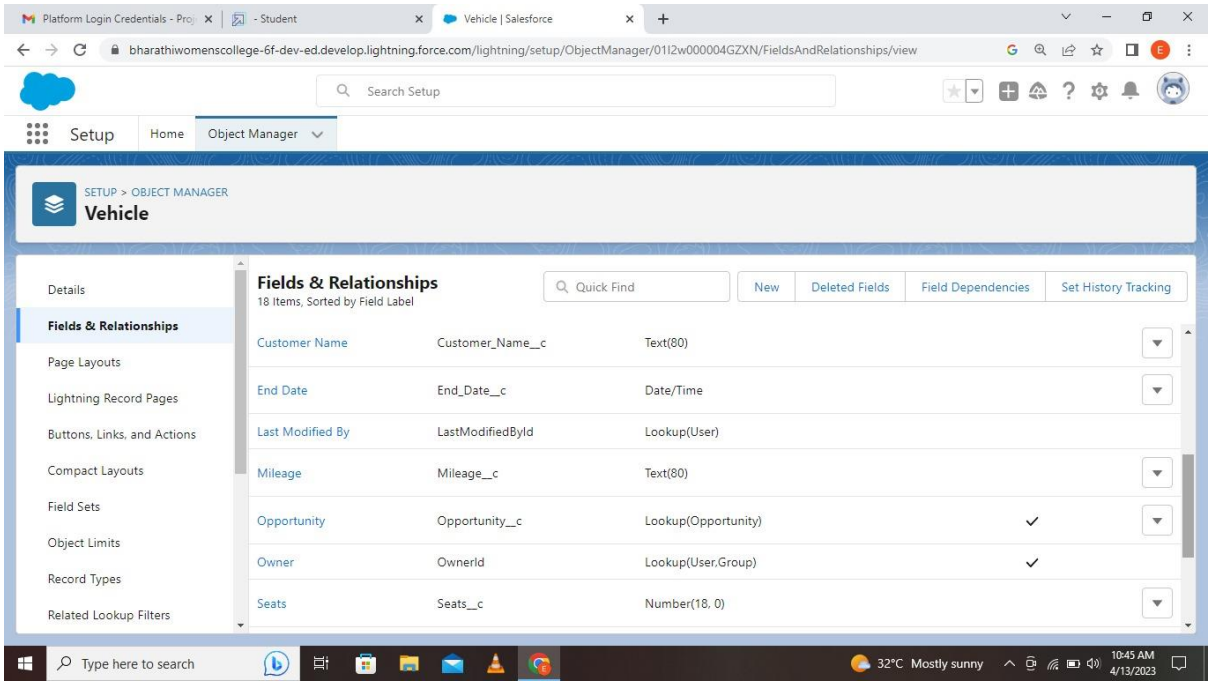
Click on the gear icon and then select Setup.

- Click on the object manager tab just beside the home tab.
- After the above steps, Select Vehicles Object

Now Select Fields and relationships from setup menu of the vehicle object

Now click on “Fields & Relationships” → New

Fill the field label name → Next → Next → Save.



Activity-2:

Fields in Driver objects follow given data types:

Click on the gear icon and then select Setup.

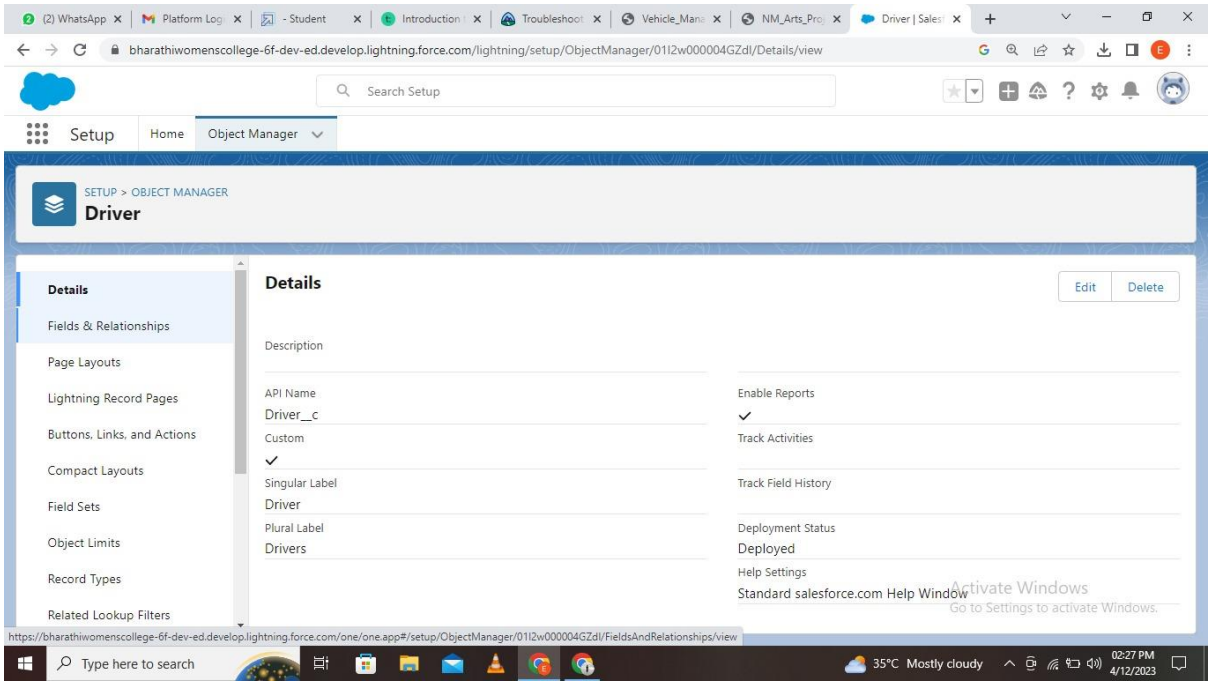
● Click on the object manager tab just beside the home tab.

● After the above steps, Select Driver Object

Now Select Fields and relationships from setup menu of the driver object

Now click on “Fields & Relationships” → New

Fill the field label name → Next → Next → Save.



Activity-3:

Fields in Driver Object:

Create a dependency between these two Picklists, so that when a Vehicle type is selected, only respective 2Wheeler Brands are available in the 2Wheeler field, Similarly for 4 wheelers.

The below steps will assist you in creating Field Dependencies.

- Click on the gear icon and then select Setup.
- Click on the object manager tab just beside the home tab.
- After the above steps, Select Vehicles Object
- Now Select Fields and relationships from setup menu of the vehicle object.
- Click Field Dependencies.
- Click New.
- Select Vehicle Type as the Controlling Field and select 2wheelers as the Dependent Field.
- Click Continue.
- Select the appropriate 2 wheelers Brands in each column by double-clicking them.
- 2WHEELERS :

i) HERO

ii) HONDA

iii) BAJAJ

iv) ROYAL ENFIELD

v) TVS

vi) KINETIC

vii) OLA

viii) JAWA

ix) SD

x) BATTERY

● Click Include Values.

● Click Preview, then test the dependency by selecting different Vehicle Type and viewing the different Vehicles available for Vehicle Type.

● Click Close to close the preview window.

● Click Save.

Follow same steps for 4wheelers also

● Vehicle Type as the Controlling Field and select 4wheelers as the Dependent Field.

● Click Continue.

● Select the appropriate 4wheelers Brands in each column by double-clicking them

● 4WHEELERS :

i) RENAULT

ii)SKODA

iii) HONDA

iv)HYUNDAI

v)SUZUKI

vi)MAHINDRA

vii)VOLKSWAGEN

viii)BENZ

ix)AUDI

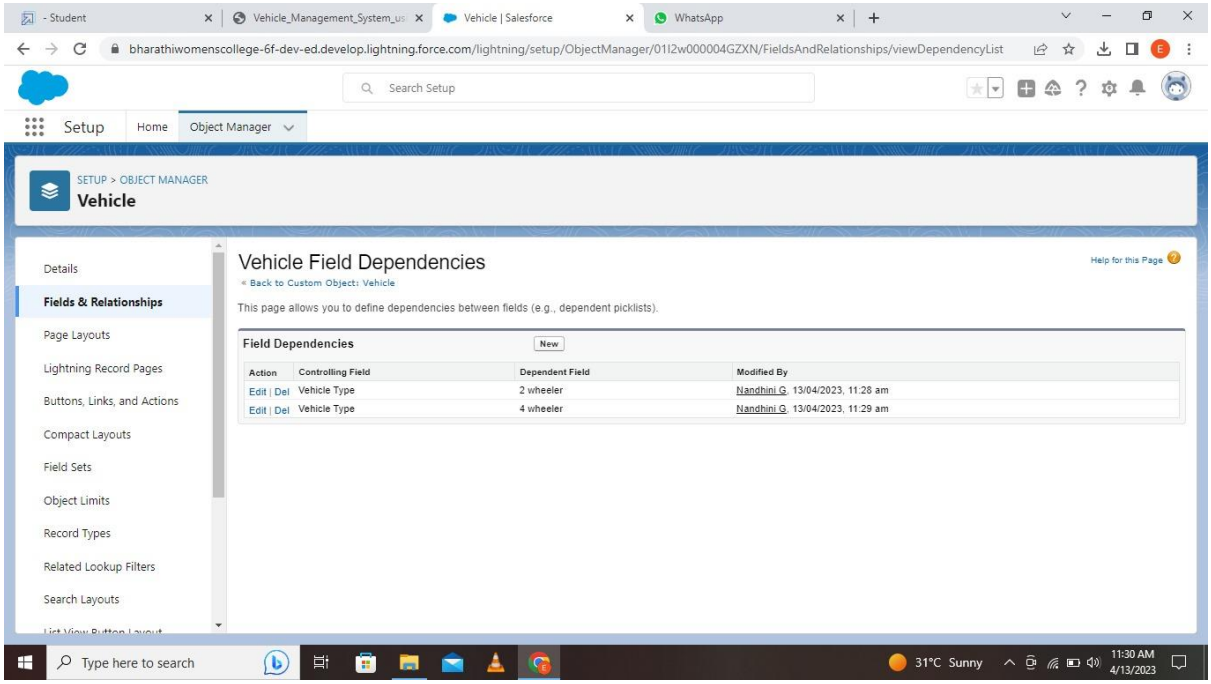
x)VOLVO

● Click Include Values.

● Click Preview, then test the dependency by selecting different Vehicle Type and viewing the different Vehicles available for Vehicle Type.

● Click Close to close the preview window.

● Click Save.



Milestone-4: Lightning App

Activity-1:

Create the Vehicle Management Construction app

● From Setup, enter App Manager in the Quick Find and select App Manager.

● Click New Lightning App. Enter Vehicle Management as the App Name, then click Next

● Under App Options, leave the default selections and click Next.

● Under Utility Items, leave as is and click Next

● From Available Items, select Accounts, Contacts, Opportunities, Vehicle, Driver, Reports, and Dashboards and move them to Selected Items. Click Next.

● From Available Profiles, select System Administrator and move it to Selected Profiles. Click Save & Finish.

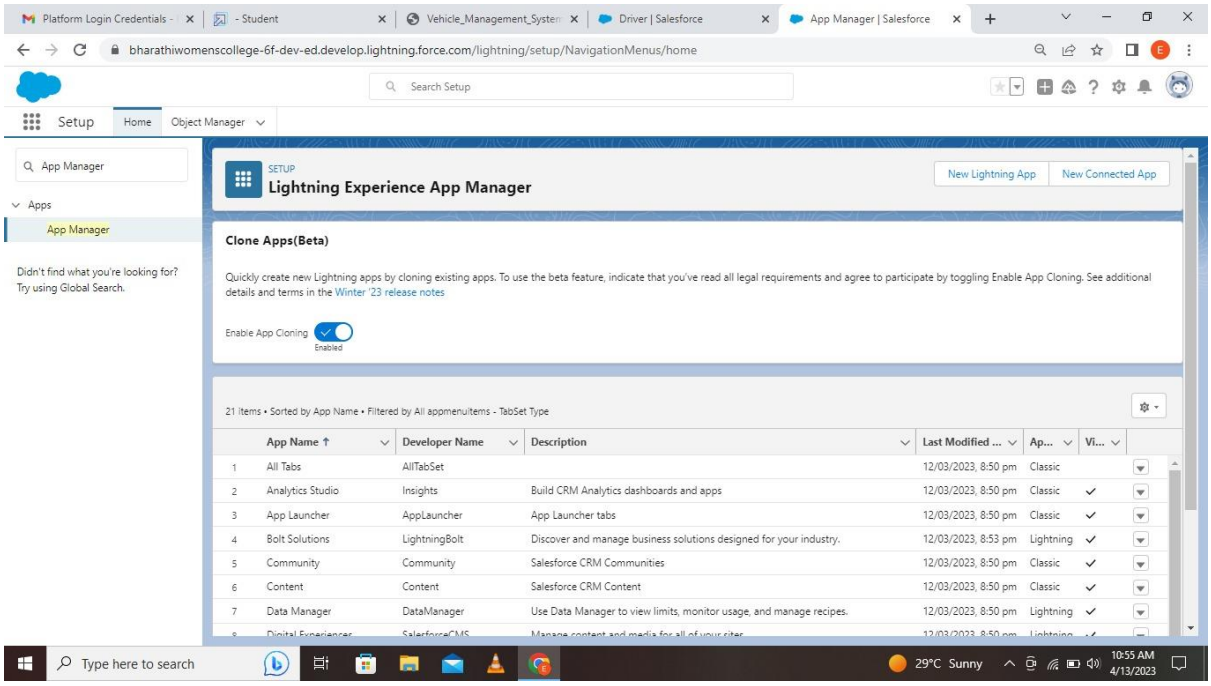
● To verify your changes, click the App Launcher, type Vehicle Management and select the Vehicle Management app.

To Add Navigation Items:

Select the items from the search bar and move it using the arrow button → Next

To Add User Profiles:

Search profiles in search bar → click on the arrow button → save & finish.



Milestone-5: Profile

Activity 1:

Creating a Profiles:

Now create a Vehicle Manager profile and set its object permissions.

Creating a Profiles: Now create a Vehicle Manager profile and set its object permissions.

● From Setup enter Profiles in the Quick Find box, and select Profiles.

● From the list of profiles, find Standard User.

● Click Clone.

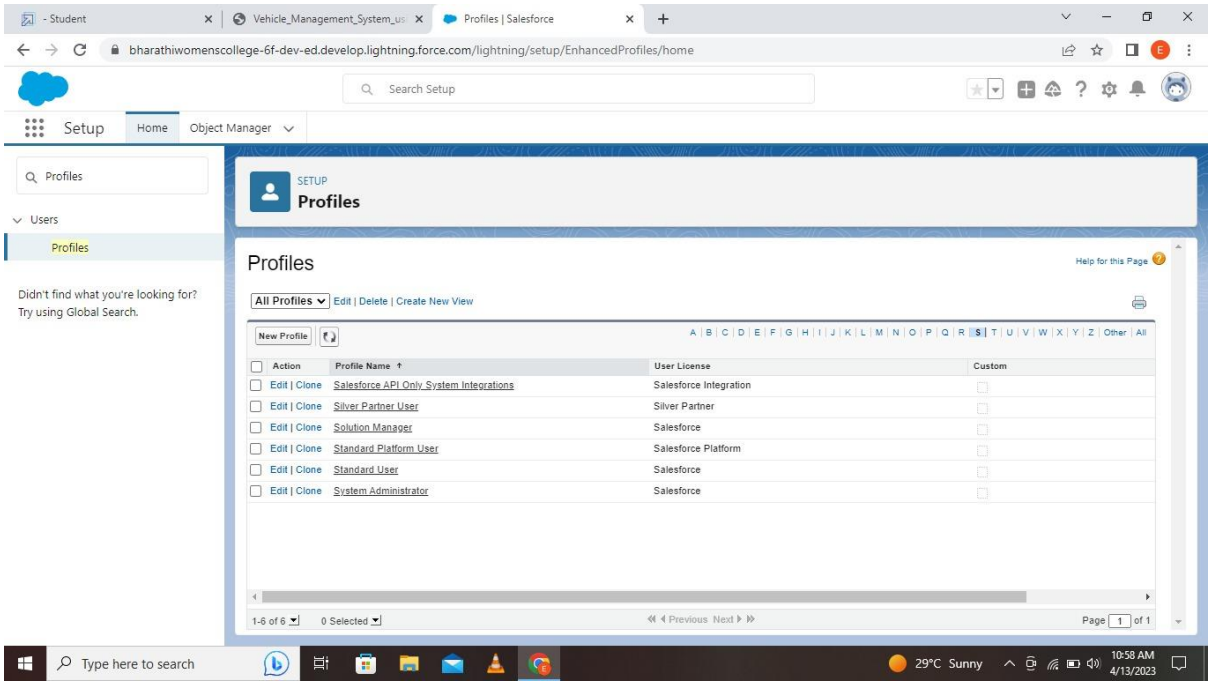
● For Profile Name, enter Vehicle Manager.

● Click Save.

● While still on the Vehicle Manager profile page, then click Edit.

● Scroll down to Custom Object Permissions and give access for Create, Read, Edit ,Delete, View all and modify all for Vehicle object and Drivers object.

To create a new profile: Go to setup → type profiles in quick find box → click on profiles → clone the desired profile (standard user is preferable) → enter profile name → save



Setup Roles:

1. Click on the Gear Icon
2. Click "Setup"
3. In the Quick Find box, enter "Roles"
4. Click "Roles"
5. Click on "Set up Roles"
6. Click "Expand All"
7. Under the CEO, click on "Add Role"
8. Fill up the Label as Vehicle Manager, Role Name Vehicle_Manager.
9. Enter a Role name that will be displayed on Reports
10. Click on save .

Similarly create Two Roles under Vehicle Manager as Operator 1 and Operator 2 Roles which will report to the Vehicle manager.

Milestone-6: Users

Activity 1:

Creating a Users:

1. From Setup, in the Quick Find box, enter Users, and then select Users.

2. Click New User.

3. Enter the user's name John Teddy and (Your) email address and a unique username in the form of an email address. By default, the username is the same as the email address.

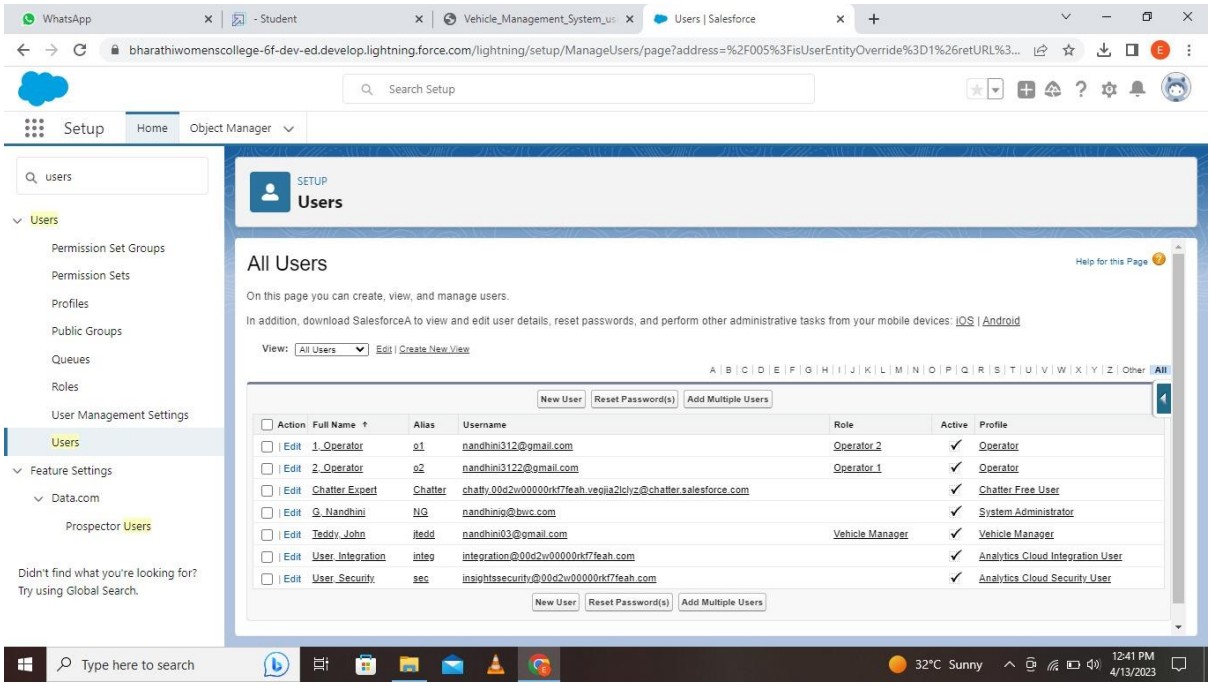
4. Select a Role (Vehicle Manager)

5. Select a User Licence As sales force.

6. Select a profile as Vehicle Manager

7. Check Generate new password and notify the user immediately to have the user's login name and a temporary password emailed to your email.

Fill in the fields (first name, last name, alias, email id, username, nick name, role, user license, profiles) → save



Milestone-7: Reports

Activity 1:

Reports and Dashboards.

- Go to Reports and click New Report.
- Select the Accounts, Contacts and Vehicle report type and click Start Report.
- To begin filtering, click Filters.
- Click the Show Me standard filter and select My Contacts. Click Apply.

● Click on add columns add Vehicle: Vehicle name, Vehicle: Customer id, Vehicle: Customer name, Vehicle: Customer Number, Vehicle: Chassis Number.

● Click Save.

● Save your report as Vehicle and Customer Details and accept the auto-generated unique name.

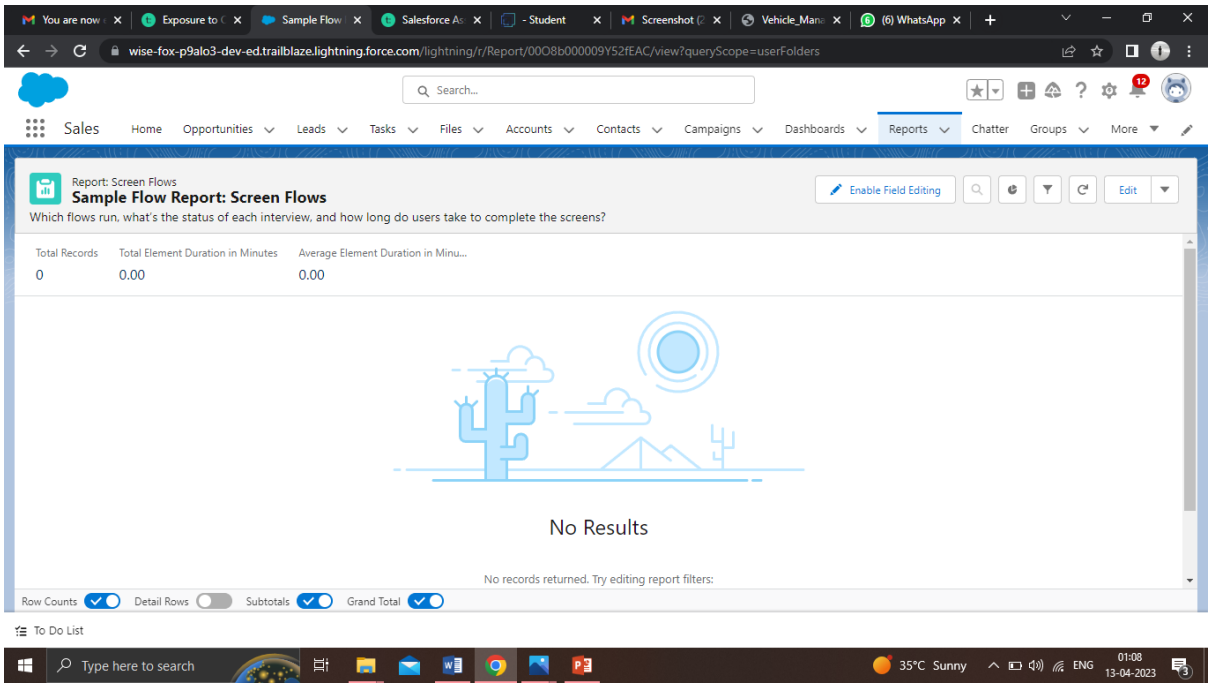
Activity 2:

Dashboard:

1. Click the Dashboards tab.
2. Click New Dashboard.
3. Name the dashboard Vehicle and Customer Details and click Create.
4. Click +Component.
5. Select the Supplies report and click Select.
6. Select the Vertical Bar Chart component and click Add.
7. Click Save and then Done.

To create a report:

Go to the app → click on the reports tab



4. Trailhead Profile Public URL

Team Lead- https://trailblazer.me/id/kania7

Team Member 1- https://trailblazer.me/id/mahab48

Team Member 2- https://trailblazer.me/id/monik485

Team Member 3- https://trailblazer.me/id/nandhu03

Team Member 4- https://trailblazer.me/id/reshs15

5. ADVANTAGES & DISADVANTAGES

Increased Efficiency: A vehicle management system can help organizations improve the efficiency of their fleet operations, reducing costs associated with idle time, fuel consumption, and maintenance.

Improved Safety: By providing real-time data on driver behaviour, vehicle performance, and compliance with regulations, a vehicle management system can help organizations improve safety and reduce the risk of accidents and fines.

Better Resource Utilization: By providing real-time visibility into the location and status of vehicles, a vehicle management system can help organizations make better use of their resources, reducing the need for excess vehicles and improving utilization.

Implementation Costs: Implementing a vehicle management system can be expensive, requiring hardware, software, and training costs.

Complexity: A vehicle management system can be complex to set up and use, requiring specialized skills and knowledge.

Potential for Data Security Issues: A vehicle management system involves the collection and storage of sensitive data, making it vulnerable to data security breaches and cyber-attacks.

Resistance to Change: Introducing a vehicle management system can be met with resistance from employees who may be accustomed to traditional methods of fleet management.

Maintenance and Upkeep: A vehicle management system requires ongoing maintenance and upkeep to ensure that it continues to function effectively.

6. APPLICATIONS

Fleet Management: A vehicle management system can be used to manage an organization's fleet of vehicles, including tracking vehicle location, maintenance schedules, fuel consumption, and driver behaviour.

Logistics and Delivery: A vehicle management system can be used to optimize delivery routes, monitor delivery progress, and ensure that deliveries are made on time and to the correct location.

Public Transportation: A vehicle management system can be used to manage public transportation systems, including tracking vehicle locations, monitoring passenger usage, and optimizing routes and schedules.

Construction and Heavy Equipment: A vehicle management system can be used to track the location and usage of construction and heavy equipment, ensuring that equipment is properly maintained and utilized efficiently.

Emergency Services: A vehicle management system can be used by emergency services, such as police and ambulance services, to track the location of emergency vehicles, optimize response times, and monitor vehicle performance.

7. CONCLUSION

As emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), and machine learning (ML) continue to evolve, vehicle management systems will become even more powerful, providing organizations with predictive maintenance capabilities, advanced safety features, and the ability to optimize routes and reduce fuel consumption.

8. FUTURE SCOPE

Predictive Maintenance: As Iot sensors become more prevalent in vehicles, they will be able to collect data on a wide range of vehicle metrics, such as engine performance, tire wear, and battery life. This data can be analysed using AI and ML algorithms to predict when maintenance will be required, allowing fleet managers to proactively schedule maintenance and avoid costly breakdowns.

Autonomous Vehicles: The rise of autonomous vehicles presents new opportunities for vehicle management systems, as fleets of self-driving cars and trucks will require new systems for tracking and monitoring their performance.

Environmental Sustainability: With the increasing focus on sustainability and reducing carbon emissions, vehicle management systems will need to adapt to new regulations and requirements. For example, fleets may need to transition to electric vehicles or implement new strategies for reducing fuel consumption.

Integration with Other Technologies: Vehicle management systems will need to continue to evolve and integrate with other technologies, such as telematics, GPS, and mobile devices, to provide a comprehensive view of fleet operations and customer interactions.