VEHICLE MANAGEMENT SYSTEM USING SALESFORCE

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1.PROJECT OVERVIEW

A comprehensive Vehicle Management System (VMS) built on Salesforce to streamline the management of vehicles within an organization. This system will help in tracking vehicle inventory, maintenance, servicing schedules, and leasing details.

2. Objectives

- To provide a centralized system for managing vehicle details.
- To automate vehicle maintenance tracking and alerts.
- To track driver assignments and trip history.
- To generate reports and dashboards for insights.

3.Salesforce Key Features and concepts utilized

- *Vehicle Inventory Management*: Store details such as VIN, model, type, and status.
- *Driver Assignment*: Assign and manage drivers linked to vehicles.
- *Trip Logging*: Record start and end locations, mileage, and fuel usage.
- *Maintenance Scheduling*: Track and schedule vehicle maintenance activities.
- *Reports & Dashboards*: Generate performance reports for vehicles and drivers.
- *User Roles & Security*: Implement access control based on roles (Admin, Fleet Manager, Driver, Maintenance Staff).
  - ❖ Creating a developer Account
  - ❖ Object
  - ❖ Fields and Relationship
  - ❖ Page Layout Setup
  - ❖ Lightning App
  - ❖ Profile
  - ❖ Users
  - ❖ User Adoption
  - ❖ Report & Dashboards

4.Detailed Steps to Solution Design

1.Introduction

- ➔ Creating a Developer Account*
- ➔ sign up for a *Salesforce Developer Edition* to access all platform features.
- ➔ -Enter First Name, Last Name, Email, Company, Country, Postal Code, and Username (must be in email format).
- ➔ Verify Email:
- ➔ Check your email and click on the verification link.
- ➔ Login to Salesforce:
- ➔ Go to Salesforce Login and log in with your credentials.

2. Objects

Salesforce objects are database tables that permit you to store data that is specific to an organization. Salesforce objects are of two types: Standard Objects: Standard objects are the kind of objects that are provided by salesforce.com such as users, contracts, reports, dashboards, etc.

Custom objects: Vehicle, Driver, Traveler

Search Setup

SETUP > OBJECT MANAGER
vehicle

Edit Custom Object
vehicle

Help for this Page

Custom Object Definition Edit   Save   Save & New   Cancel

Custom Object Information

▮ = Required Information

The singular and plural labels are used in tabs, page layouts, and reports.
Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label	vehicle	Example: Account
Plural Label	vehicle name	Example: Accounts
Starts with vowel sound	☐	

The Object Name is used when referencing the object via the API.

Object Name	vehicle	Example: Account

Description

Context-Sensitive Help Setting   ● Open the standard Salesforce.com Help & Training window
                                 ○ Open a window using a Visualforce page
Content Name   --None-- ⌄

Enter Record Name Label and Format

Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout
Restriction Rules
Scoping Rules

Edit Custom Object
Driver

Custom Object Definition Edit   Save   Save & New   Cancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports.
Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label	Driver	Example: Account
Plural Label	Drivers	Example: Accounts
Starts with vowel sound	☐	

The Object Name is used when referencing the object via the API.

Object Name	Driver	Example: Account

Description

Context-Sensitive Help Setting   ● Open the standard Salesforce.com Help & Training window
                                 ○ Open a window using a Visualforce page

3.FIELDS AND RELATIONSHIP

2)WHEELERS

HERO,HONDA,BAJA,ROYAL ENFIELD,TVS,KINETIC,OLA,JAWA,SD, BATTERY.

4.WHEELERS:

RENAULT,SKODA,HONDA,HYUNDAI,SUZUKI,MAHINDRA,VOLKSWAGEN,BENZ,AUDI,VOLVO.

.4WHEELERS :

Search Setup

SETUP > OBJECT MANAGER
vehicle

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Scoping Rules

Edit vehicle Custom Field
4WHEELERS

Help for this Page

Custom Field Definition Edit   Change Field Type | Promote to Global Value Set | Save | Cancel

Field Information   I *= Required Information

Field Label | 4WHEELERS   Data Type   Picklist
Field Name | X4WHEELERS
Description |
Help Text |
Data Owner | User ▾
Field Usage | --None-- ▾
Data Sensitivity Level | --None-- ▾
Compliance Categorization

Available   Chosen
PII
HIPAA
GDPR
PCI

General Options

Required   ☐ Always require a value in this field in order to save a record

SETUP > OBJECT MANAGER
Traveler

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Fields & Relationships
6 Items, Sorted by Field Label

Quick Find   New | Deleted Fields | Field Dependencies | Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Traveler Contact No	Traveler_Contact_No__c	Phone		
Traveler Email	Traveler_Email__c	Email		
Traveler Name	Name	Text(80)		✓

SETUP > OBJECT MANAGER
Opportunity

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Opportunity Custom Field
vehicle
Back to Opportunity Fields

Validation Rules [0]

Custom Field Definition Detail   Edit | Set Field-Level Security | View Field Accessibility | Where is this used?

Field Information

Field Label | vehicle   Object Name | Opportunity
Field Name | vehicle   Data Type | Lookup
API Name | vehicle__c
Description
Help Text
Data Owner
Field Usage
Data Sensitivity Level
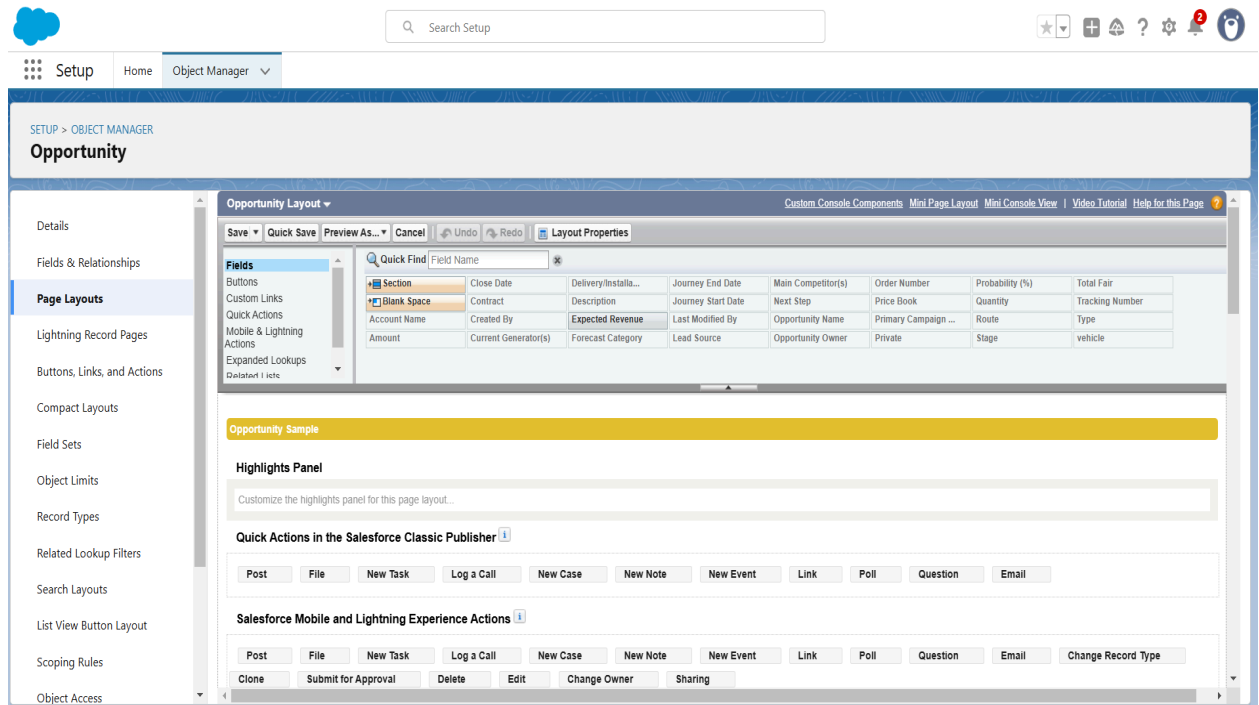Compliance Categorization

4. Page Layout Setup

- Customize *record pages* to display relevant vehicle details.
- Organize Opportunity layout

★ The object manager tab just beside the home tab.
★ Search in quick find (Opportunity) & select Opportunity.Click on page layout and you can add or remove fields by drag & drop

5.LIGHTNING APP

  creating custom objects to store vehicle details, driver information, maintenance records, fuel logs, and other relevant data, then designing a user interface using Lightning components to easily view.Key Components of a Vehicle Management Lightning App:

Custom Objects:

Vehicle: Store core vehicle details like VIN, make, model, license plate, registration date, mileage, current status (available, in service, maintenance), and assigned driver.

Driver: Track driver information including license details, contact information, driving history, and assigned vehicles similar to the traveller custom object.

App Settings

App Details & Branding
App Options
Utility Items (Desktop Only)
Navigation Items
User Profiles

App Details & Branding
Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.

App Details

* App Name
vehicle Management

* Developer Name
vehicle_Management

Description
Enter a description...

App Branding

Image   Primary Color Hex Value
                               #0070D2

Upload

Org Theme Options
☐ Use the app's image and color instead of the org's custom theme

App Launcher Preview

vM   vehicle Management

Implies the development or customization of a lightening application for a experience

6. Profile*

- Define *roles and profiles* (Admin, Vehicle,driver,traveler).
- Control *object permissions* (e.g., only managers can edit vehicle records).

❖ PROFILES
❖ ROLES
   1)VEHICLE MANAGER
   SIMILARLY PROCESS CREATE THE
   1)OPERATOR 1
   2)OPERATOR 2

Profiles

SETUP
Profiles

Profile Edit
vehicle Manager
Set the permissions and page layouts for this profile.

Help for this Page ❓

| Profile Edit | Save | Save & New | Cancel |

Name: vehicle Manager
User License: Salesforce
Description:

Custom Profile ✓

Custom App Settings

❗ *= Required Information*

	Visible	Default		Visible	Default
All Tabs (standard__AllTabSet)	☑	○	Queue Management (standard__QueueManagement)	☑	○
Analytics Studio (standard__Insights)	☑	○	Sales (standard__LightningSales)	☑	○
App Launcher (standard__AppLauncher)	☑	○	Sales (standard__Sales)	☑	●
Approvals (standard__Approvals)	☑	○	Sales Console (standard__LightningSalesConsole)	☑	○
Automation (standard__FlowsApp)	☑	○	Salesforce Chatter (standard__Chatter)	☑	○
Bolt Solutions (standard__LightningBolt)	☑	○	Salesforce Scheduler Setup (standard__LightningScheduler)	☐	○
				☐	○

SETUP
Roles

Add Role
⊟ **SVP, Sales & Marketing** Edit | Del | Assign
　Add Role
　⊟ **VP, International Sales** Edit | Del | Assign
　　Add Role
　⊟ **VP, Marketing** Edit | Del | Assign
　　Add Role
　　⊟ **Marketing Team** Edit | Del | Assign
　　　Add Role
　⊟ **VP, North American Sales** Edit | Del | Assign
　　Add Role
　　⊟ **Director, Channel Sales** Edit | Del | Assign
　　　Add Role
　　　⊟ **Channel Sales Team** Edit | Del | Assign
　　　　Add Role
　　⊟ **Director, Direct Sales** Edit | Del | Assign
　　　Add Role
　　　⊟ **Eastern Sales Team** Edit | Del | Assign
　　　　Add Role
　　　⊟ **Western Sales Team** Edit | Del | Assign
　　　　Add Role
⊟ **vehicle manager** Edit | Del | Assign
　Add Role
　⊟ **operator 1** Edit | Del | Assign
　　Add Role
　⊟ **operator 2** Edit | Del | Assign
　　Add Role

7.USERS
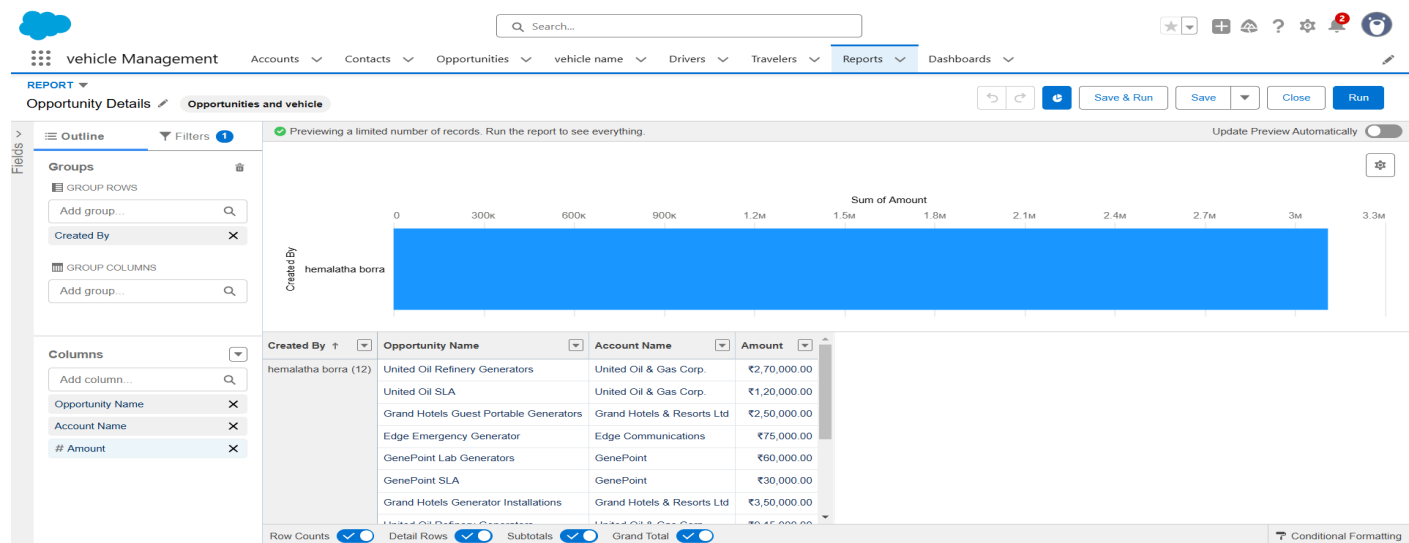

users in Salesforce (Setup -> Users -> New User).

.Specify the required fields (First Name, Last Name, Email, Username, Profile, Role).

Provide an example with "Teddy John" as the user.

9. REPORTS AND DASHBOARDS

.1. Go to Reports and click New Report.

2. Select the Opportunity and Traveller Name report type and click Start Report. (Under all categories)

3. To begin filtering, click Filters.

4. Click the Show Me standard filter and select All Travellers. Click Apply
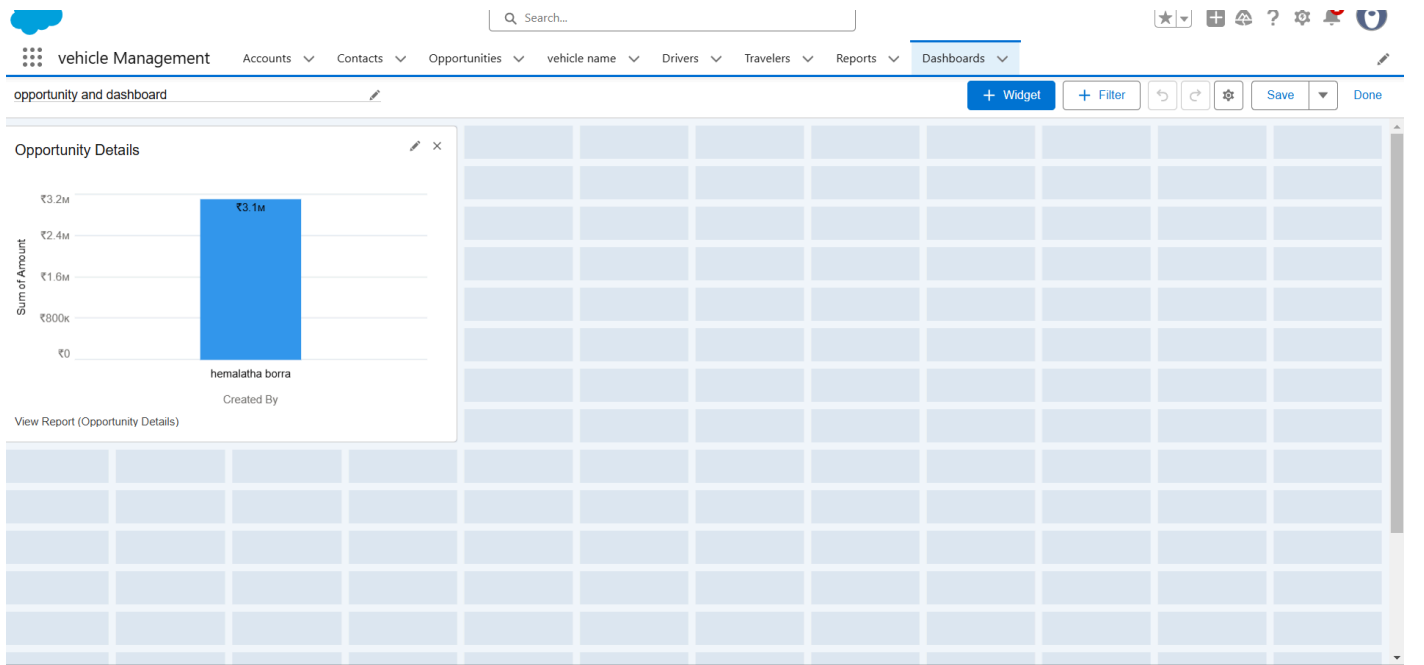
5. Testing and Validation

Describe the approach to testing:

- Unit Testing (Apex Classes, Triggers).
- - Achieve at least *75% code coverage* (Salesforce requirement).
- - Test *positive* (valid inputs) and *negative* (invalid inputs) scenarios.
- - Use *Test Data Factory* to create consistent, reusable test data
- (Vehicles, Driver,Traveler etc.).
- User Interface Testing
- .1. *Lightning Pages & Components*
- - Confirm fields, related lists, and quick actions appear correctly for each user role

SETUP > OBJECT MANAGER
Traveler

Details	**Fields & Relationships** 6 Items, Sorted by Field Label		Quick Find	New Deleted Fields Field Dependencies Set History Tracking
Fields & Relationships				
Page Layouts	FIELD LABEL ▲	FIELD NAME	DATA TYPE	CONTROLLING FIELD INDEXED
Lightning Record Pages	Created By	CreatedById	Lookup(User)	
Buttons, Links, and Actions	Last Modified By	LastModifiedById	Lookup(User)	
Compact Layouts	Owner	OwnerId	Lookup(User,Group)	✓
Field Sets	Traveler Contact No	Traveler_Contact_No__c	Phone	▼
Object Limits	Traveler Email	Traveler_Email__c	Email	▼
Record Types	Traveler Name	Name	Text(80)	✓ ▼
Related Lookup Filters				

(vehicle management,operator 1,operator 2

SETUP > OBJECT MANAGER
Driver

Details	**Fields & Relationships** 8 Items, Sorted by Field Label		Quick Find	New Deleted Fields Field Dependencies Set History Tracking
Fields & Relationships				
Page Layouts	FIELD LABEL ▲	FIELD NAME	DATA TYPE	CONTROLLING FIELD INDEXED
Lightning Record Pages	Created By	CreatedById	Lookup(User)	
Buttons, Links, and Actions	Driver Name	Name	Text(80)	✓ ▼
Compact Layouts	Fair Per Hour	Fair_Per_Hour__c	Text(10)	▼
Field Sets	Last Modified By	LastModifiedById	Lookup(User)	
Object Limits	license no	license_no__c	Text(30)	▼
Record Types	Mobile No	Mobile_No__c	Phone	▼
Related Lookup Filters	Owner	OwnerId	Lookup(User,Group)	✓
Search Layouts	vehicle	vehicle__c	Lookup(vehicle)	✓ ▼
List View Button Layout				

Role
vehicle manager

Below is the list of users assigned to this role. Click Edit to modify the role name. Click Assign Users to Role to assign existing users to this role. Click New User to create a user for this role.

Hierarchy: sri vasavi degree college » CEO » vehicle manager
Siblings: SVP, Sales & Marketing, SVP, Customer Service & Support, CFO, SVP, Human Resources, COO

Users in vehicle manager Role [1]

Role Detail   Edit   Delete

Label	vehicle manager	Role Name	vehicle_manager
This role reports to	CEO	Role Name as displayed on reports	
Modified By	hemalatha borra, 21/02/2025, 4:53 pm	Sharing Groups	Role, Role and Internal Subordinates
Opportunity Access	Users in this role can **edit** all opportunities associated with accounts that they own, regardless of who owns the opportunities		
Case Access	Users in this role can **edit** all cases associated with accounts that they own, regardless of who owns the cases		

6. Key Scenarios Addressed by Salesforce in the Implementation Project

- ❖ 1.Creating a developer Account: Essential for any Salesforce development project, this shows the project required setting up a developer environment.
- ❖ 2.Object: Highlights the use of custom or standard Salesforce objects to store data.
- ❖ 3.Fields and Relationship: Indicates data modeling and the creation of relationships between objects.
- ❖ 4.Page Layout Setup: Shows customization of the user interface for data entry and display.
- ❖ 5.Lightning App: Implies the development or customization of a Lightning application for a modern user experience.
- ❖ 6.Profile: Demonstrates the use of profiles for managing user permissions and access.
- ❖ 7.Users: Confirms the project involves user management and administration.
- ❖ 8.User Adoption: Suggests a focus on ensuring users effectively utilize the Salesforce solution.
- ❖ 9.Report & Dashboards: Shows the implementation of reporting and analytics

7. Conclusion

Summary of Achievements:

   The *Vehicle Management System (VMS) using Salesforce* successfully streamlines vehicle tracking, traveler management, driver management, and reporting. Key accomplishments include:

   - *Custom Data Model:* Implemented *custom objects* for vehicles, drivers, travelers, and assignments.
- *Automation & Workflows:* Utilized *Flows, Process Builder, and Validation Rules* to automate vehicle status updates, traveler notifications, and compliance checks. - *User Interface & Experience:* Designed intuitive *Lightning pages, dashboards, and reports* for real-time monitoring and decision-making. - *Security & Access Control:* Configured *profiles,permissions*to ensure secure data access. - *Integration & Scalability:* Integrated withThis solution enhances *operational efficiency, reduces manual work, improves compliance, and provides data-driven insights* for better decision-making.