

Vehicle Maintenance: Keeping Your Fleet Running Smoothly

1. Executive Summary

This report introduces the **Vehicle Maintenance** system, a powerful tool designed to help you efficiently manage and track your fleet's service needs. It's built to simplify the complex task of vehicle upkeep, helping you minimize unexpected breakdowns, extend the life of your assets, and control maintenance costs. By providing clear insights into past, current, and upcoming service requirements, this system empowers you to make informed decisions and ensure your vehicles are always ready for the road.

2. Introduction

Managing a fleet of vehicles can be challenging. You need to know when each vehicle needs service, how much it costs, and what work has already been done. Missing maintenance can lead to costly breakdowns, unexpected downtime, and safety risks. The **Vehicle Maintenance** system addresses these pain points by offering a centralized, user-friendly platform.

Its purpose is to **streamline your vehicle maintenance process**, making it easier to schedule, track, and analyze all service activities. This helps you:

- **Prevent costly repairs** by addressing issues proactively.
- **Reduce vehicle downtime**, keeping your fleet operational.
- **Extend the lifespan of your vehicles**, maximizing your investment.
- **Improve safety and compliance** by ensuring regular inspections.
- **Gain clear visibility** into maintenance costs and trends.

In simple terms, this system acts as your personal fleet mechanic, always reminding you what's due, showing you what's been done, and helping you plan for the future.

3. Main Content

What This Means for You

The Vehicle Maintenance system offers practical benefits that directly impact your daily operations and long-term planning:

- **Proactive Maintenance:** Get timely alerts for upcoming services based on mileage or time, so you can schedule maintenance before issues arise.
- **Reduced Unexpected Breakdowns:** By tracking diagnostics and scheduling preventative care, the system minimizes the risk of sudden vehicle failures.
- **Better Cost Management:** Easily compare repair costs across vehicles and track overall expenses to identify trends and optimize your budget.
- **Clear Overview of Vehicle Health:** Access comprehensive service history, upcoming maintenance, and overdue tasks at a glance.
- **Efficient Resource Allocation:** Know which vehicles are available and which need service, preventing unmaintained vehicles from being dispatched.
- **Simplified Reporting:** Generate detailed reports (PDF, Excel) on maintenance history, upcoming dues, and overdue inspections with ease.

How It Works

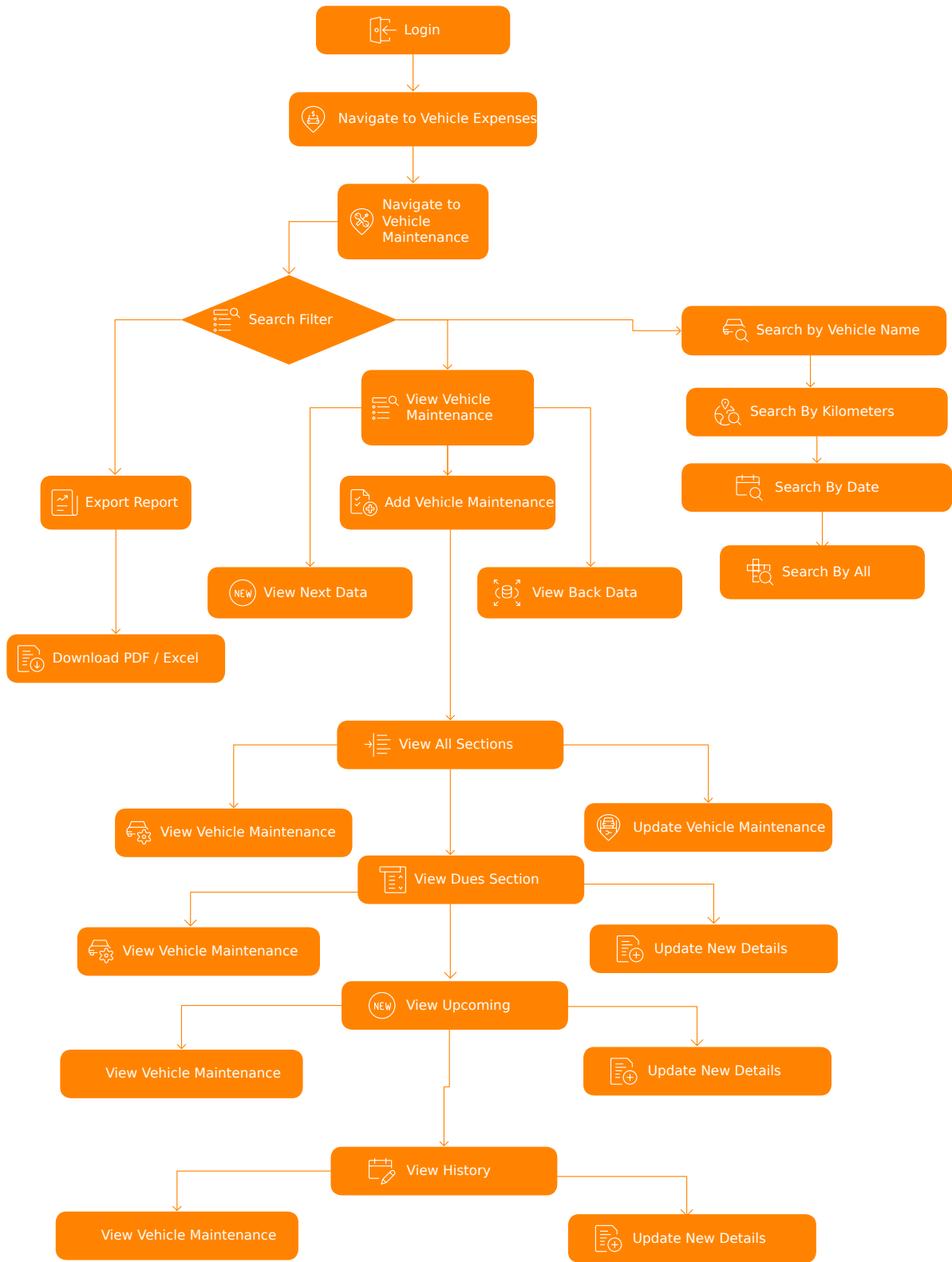
The Vehicle Maintenance system is organized into several user-friendly sections:

1. **General Info:** Your central hub to view an overview of your entire fleet's maintenance status.
2. **History:** A detailed log of all past maintenance services performed on each vehicle.
3. **Upcoming:** A list of scheduled or anticipated maintenance tasks.
4. **Dues:** Highlights maintenance tasks that are overdue or nearing their due date.
5. **Add New:** Allows you to log new maintenance records.
6. **Update:** Enables editing of existing maintenance records.
7. **Check Maintenance:** A section for comprehensive reports and filters.

The process typically involves adding new maintenance records, which then populate the history, upcoming, and dues sections based on their status and schedule. You can easily view details, edit information, and generate reports. The system also uses filters and search functions to help you quickly find the information you need.

For a visual overview of the workflow, refer to the flowchart below:

Vehicle Maintenance Flowchart



Getting Started

Follow these simple steps to begin managing your vehicle maintenance:

1. **Log in** to the system using your credentials.
2. Navigate to the **Vehicle Expenses** module, then select the **Vehicle Maintenance** submodule. You will typically see a list of vehicles and their maintenance status.
3. To add a new maintenance record:
 - Click the **+Add New** button.
 - Fill in all the required details on the "Add New Details" page, such as the vehicle name, service type, date, odometer reading, and cost.
 - Click **Save** to record the new entry.
4. To view details of an existing record (History, Upcoming, Dues):
 - Navigate to the respective tab (e.g., **History** or **Upcoming**).
 - Locate the record you wish to view.
 - Click the **View (Eye) icon** in the "Action" column.
5. To update an existing maintenance record:
 - Locate the record you wish to modify in the appropriate section (e.g., "All" or "History").
 - Click the **Edit (Pencil) icon** in the "Action" column.
 - Make the necessary changes (e.g., service date, cost, status).
 - Click **Save** to apply your updates.

Key Features You'll Use

- **Comprehensive Overview:** See all your vehicle maintenance records in one place, categorized into "All," "History," "Upcoming," and "Dues" sections.
- **Add & Update Maintenance:** Easily log new services and edit existing records for accuracy (e.g., service type, date, cost, odometer reading).
- **Smart Search & Filtering:** Quickly find specific maintenance records by applying filters like vehicle name, date range, maintenance status, engine type, or even specific kilometer ranges.
- **Cost Analysis:** Compare repair and maintenance costs across different vehicles in your fleet to identify trends and make data-driven decisions.
- **Automated Alerts & Reminders:** Receive real-time notifications (email, SMS, in-app) for upcoming service needs based on mileage, engine hours, or fixed schedules.
- **Downtime Management:** Track maintenance schedules to minimize vehicle downtime and get alerts for extended downtime, ensuring optimal vehicle performance.
- **Inventory Tracking (Future Ready):** The system is designed to support integrated inventory management for spare parts, alerting you when stock is low.
- **Exportable Reports:** Generate and download detailed reports in **PDF** and **Excel** formats for easy sharing and further analysis (e.g., Maintenance Overdue, Maintenance Dues Soon, Inspection Due, Insurance Expiry).

Common Scenarios

Here are some real-world examples of how you can use the Vehicle Maintenance system:

- **"My truck, 'Eagle 1', just hit 10,000 km. Is it due for an oil change?"** You can quickly filter maintenance records by "Kilometers Driven" to see which vehicles are approaching or have passed specific mileage thresholds for routine services like oil changes, tire rotations, and brake inspections.
- **"I need to know the complete service history for 'Voyager X' before I assign it to a new route."** Simply navigate to the "History" tab, find "Voyager X," and click the "View" icon. You'll see a comprehensive log of all past repairs, parts replaced, and service dates, helping you ensure the vehicle is in top condition.
- **"We're planning next quarter's budget. How much should we allocate for vehicle maintenance, especially for overdue tasks?"** Review the "Dues" section to identify vehicles with outstanding or urgent maintenance. This information directly influences your budget, allowing you to allocate funds for anticipated expenses. You can also export this data to Excel for detailed financial planning.
- **"I want to make sure no vehicle with pending maintenance is accidentally dispatched."** The system helps prevent this by restricting vehicles with pending maintenance from being assigned for dispatch until their service is completed, ensuring operational safety and reliability.
- **"I need a report of all vehicles whose insurance is expiring next month."** Go to the "Maintenance Dues Soon Report," apply a filter for upcoming insurance expiry dates, and the report will display only those vehicles, allowing you to manage renewals proactively.
- **"How can I tell if 'Road Runner' is costing us more in repairs than other similar vehicles?"** Utilize the system's comparison feature (often available in the General Info or Check Maintenance reports) to analyze repair and maintenance costs across various vehicles. This helps you identify trends and make informed decisions about vehicle management or replacement.

What to Expect

When you use the Vehicle Maintenance system, you can expect:

- **Accurate and Real-time Information:** Service records will be saved correctly and appear immediately in the relevant logs ("All", "History", "Upcoming", "Dues").
- **Timely Notifications:** You will receive alerts for upcoming maintenance tasks, high repair costs, or extended downtime, helping you stay ahead.
- **Validated Data Entry:** The system will highlight any incomplete or incorrect mandatory fields when adding or updating records, preventing data loss and ensuring accuracy.
- **Organized Reports:** Exported reports (PDF, Excel) will be accurately formatted and contain all the data you see on screen, including inspection dates, registration expiry, and odometer readings.
- **Consistent Experience:** The system is designed to work consistently across different browsers (Chrome, Firefox, Edge) and adjust for mobile screens, providing a responsive and user-friendly interface.
- **Seamless Navigation:** Clicking action buttons will reliably take you to the correct detail pages (e.g., from a report to a vehicle's General Information page).

Business Rules & Constraints

The Vehicle Maintenance system operates with several built-in rules to ensure efficient and reliable fleet management:

- **Automated Service Reminders:** You can configure the system to send automated service reminders based on specific mileage thresholds (e.g., every 5,000 km for an oil change) or engine hours, ensuring maintenance aligns with actual vehicle usage.
- **High Cost & Downtime Alerts:** The system allows you to set predefined thresholds for repair costs or vehicle downtime. If a vehicle exceeds these limits, you will receive an alert, enabling timely intervention.

- **Dispatch Restriction for Pending Maintenance:** For safety and operational reliability, vehicles flagged with pending or overdue maintenance tasks will be restricted from being dispatched. This prevents unmaintained vehicles from being used for active routes.
- **Mandatory Information:** When adding new vehicle maintenance records, certain fields (e.g., Vehicle Name, Service Type, Date of Service, Odometer Reading, Service Cost) are required. The system will prompt you if any mandatory information is missing, highlighting the incomplete fields before you can save the record.
- **Spare Parts Inventory Alerts:** The system includes an integrated inventory management tool that monitors spare parts. It will alert you when inventory levels for critical parts are low, ensuring availability for necessary repairs.
- **Date Formats:** All dates within the system and in exported reports will adhere to a consistent and standard format (e.g., DD/MM/YYYY) for clarity and ease of understanding.

4. Visual Elements & Supporting Information

Vehicle Maintenance General Information

This page provides an overall view of your vehicle maintenance details. You can see a summary of all records and apply filters to quickly find specific information.

100 Vehicles Online

Vehicle Name

10/22/2025

Kilometers

10/22/2025

+ Add New

Export

AllDuesUpcomingHistory

Sr.noVehicle NameService DateKilometers DrivenDue DateService CostAction

1Toyota Innova01-01-202350001-02-20233000 /-👁️📝

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1Maruti01-01-202350001-02-20233000 /-👁️📝

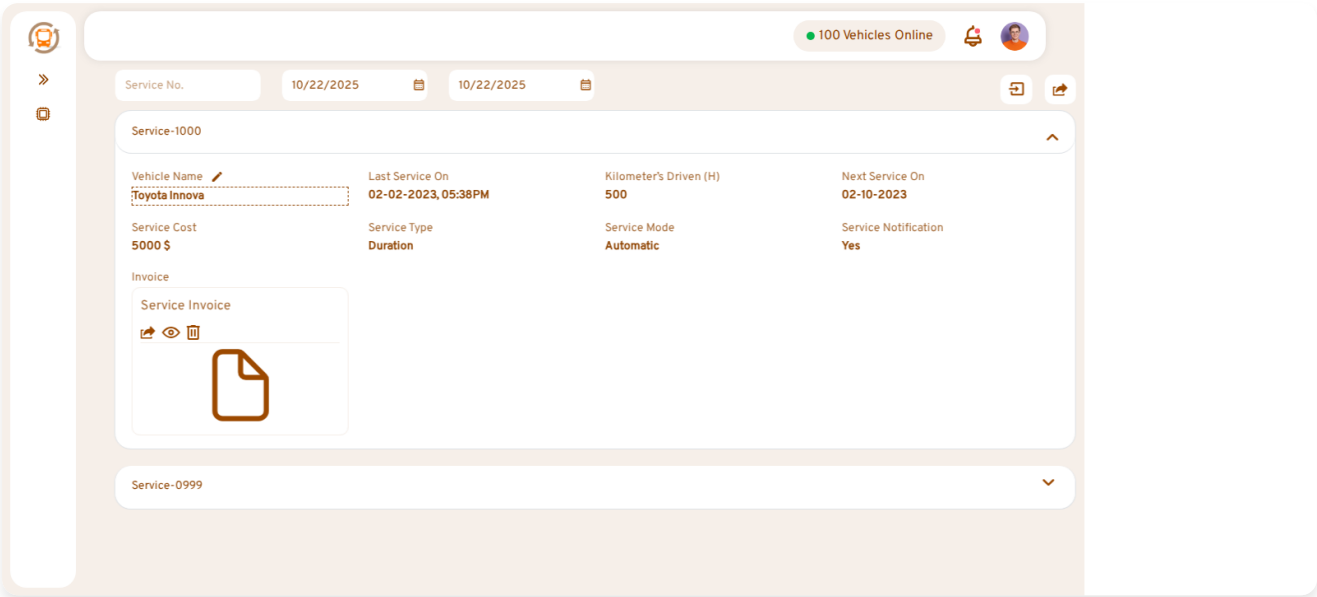
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Field Validation Table (Filter/Search Fields)

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	No	Dropdown	String	N/A	Yes	Select a specific vehicle to view its maintenance records.
Date Range	No	Date Picker	Date	N/A	Yes	Choose a start and end date to filter maintenance records within that period.
Maintenance Status	No	Dropdown	String	N/A	Yes	Filter by status (e.g., Upcoming, Overdue, Completed).
Kilometers Driven	No	Number	Number	N/A	Yes	Search for maintenance records based on odometer readings or mileage intervals.

History Vehicle Maintenance View

This section allows you to view the detailed history of all past maintenance performed on your vehicles. You can access individual records to see what services were done, when, and by whom.



Field Validation Table (Filter/Search Fields)

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	No	Dropdown	String	N/A	Yes	Select a specific vehicle to view its past maintenance history.
Date Range	No	Date Picker	Date	N/A	Yes	Choose a start and end date to filter historical records within that period.

Vehicle Maintenance Upcoming View

This page shows all your upcoming scheduled maintenance tasks. It helps you anticipate future service needs and plan accordingly to avoid last-minute rush or delays.

100 Vehicles Online

Service No.

10/22/2025

10/22/2025

Service-1000

Vehicle Name

Toyota Innova

Last Service On

02-02-2023, 05:38PM

Kilometer's Driven (H)

500

Next Service On

02-10-2023

Service Cost

5000 \$

Service Type

Duration

Service Mode

Automatic

Service Notification

Yes

Invoice

Service Invoice

Service-0999

Field Validation Table (Filter/Search Fields)

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	No	Dropdown	String	N/A	Yes	Select a specific vehicle to view its upcoming maintenance schedule.
Date Range	No	Date Picker	Date	N/A	Yes	Choose a start and end date to filter upcoming tasks within that period.

Vehicle Maintenance Dues View

The "Dues" section highlights maintenance tasks that are currently overdue or are due very soon. This is a critical area for prioritizing urgent tasks and ensuring compliance.

100 Vehicles Online

Service No.

10/22/2025

10/22/2025

Service-1000

Vehicle Name

Toyota Innova

Last Service On

02-02-2023, 05:38PM

Kilometer's Driven (H)

500

Next Service On

02-10-2023

Service Cost

5000 \$

Service Type

Duration

Service Mode

Automatic

Service Notification

Yes

Invoice

Service Invoice

Service-0999

Field Validation Table (Filter/Search Fields)

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	No	Dropdown	String	N/A	Yes	Select a specific vehicle to view its overdue or soon-due maintenance.
Date Range	No	Date Picker	Date	N/A	Yes	Choose a start and end date to filter due tasks within that period.

Add New Vehicle Maintenance

Use this form to add a new maintenance record for any of your vehicles. Filling out this form completely ensures accurate tracking and timely reminders.

100 Vehicles Online

Add New Details

Vehicle Name *

Enter Your vehicle Name

Service Task *

Enter Your Service Task

Service Date *

10/22/2025

Kilometers Driven *

Enter Your Kilometers Driven

Next Service Date *

Select Date

Next Service Kilometers *

Enter Next Service Kilometers

Next Service Duration *

Enter Next Service Duration

Cancel

Submit

Service Settings

Field Validation Table

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	Yes	Dropdown	String	N/A	Yes	Select the specific vehicle for which you are logging maintenance.
Service Type	Yes	Dropdown	String	N/A	Yes	Choose the type of service performed (e.g., Oil Change, Tire Rotation, Repair, Inspection).
Date of Service	Yes	Date	Date	N/A	Yes	The exact date when the maintenance work was completed.
Odometer Reading	Yes	Text	Number	Max 10 digits	Yes	The vehicle's odometer reading at the time of this service.
Service Cost	Yes	Text	Number	N/A	Yes	The total cost incurred for this maintenance service.
Next Due Date	No	Date	Date	N/A	Yes	The recommended date for the next scheduled service or inspection.
Next Due Mileage	No	Text	Number	Max 10 digits	Yes	The recommended odometer reading for the next scheduled service.
Notes / Description	No	Text Area	String	Long text	Yes	Add any additional relevant details about the maintenance.

Update Vehicle Maintenance

This page allows you to edit and update existing maintenance records. This is useful for correcting errors or adding more details to a previously logged service.



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100 Vehicles Online

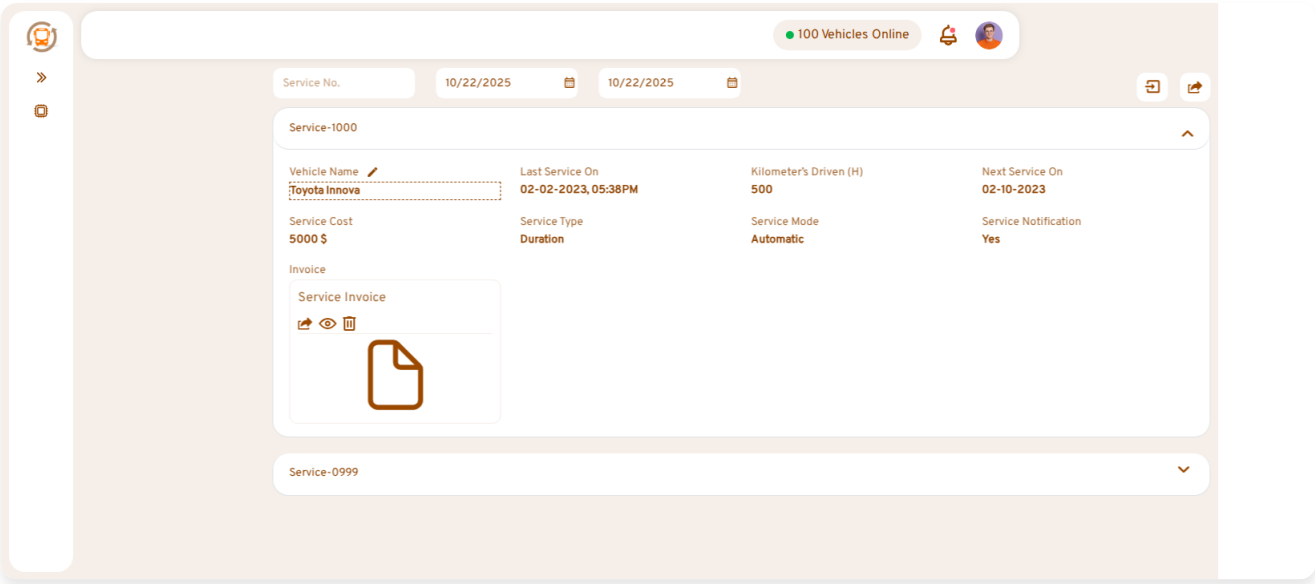


Field Validation Table

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	Yes	Dropdown	String	N/A	No	The vehicle currently selected for updating maintenance details (usually pre-filled).
Service Type	Yes	Dropdown	String	N/A	Yes	The type of service performed.
Date of Service	Yes	Date	Date	N/A	Yes	The date when the maintenance was completed.
Odometer Reading	Yes	Text	Number	Max 10 digits	Yes	The vehicle's odometer reading at the time of service.
Service Cost	Yes	Text	Number	N/A	Yes	The total cost incurred for this maintenance service.
Next Due Date	No	Date	Date	N/A	Yes	The recommended date for the next scheduled service.
Next Due Mileage	No	Text	Number	Max 10 digits	Yes	The recommended odometer reading for the next scheduled service.
Notes / Description	No	Text Area	String	Long text	Yes	Any additional relevant details about the maintenance.

Check Maintenance View

This section provides an advanced view for checking maintenance status, generating reports, and applying various filters to get specific insights into your fleet's maintenance needs.



Field Validation Table (Filter/Search Fields)

Field Name	Mandatory	Field Type	Data Type	Field Size	Is Editable	Description
Vehicle Name	No	Dropdown	String	N/A	Yes	Select a specific vehicle to access its complete maintenance log.
Due Date Range	No	Date Picker	Date	N/A	Yes	Filter maintenance records by a specific due date or range.
Odometer Reading	No	Number	Number	N/A	Yes	Search for maintenance records tied to specific mileage thresholds.
Service Cost Range	No	Number	Number	N/A	Yes	Filter by a range of service costs to analyze expenses.
Maintenance Type	No	Dropdown	String	N/A	Yes	Filter by type of service (e.g., routine, repair, inspection).

5. Summary & Benefits

The **Vehicle Maintenance** system is your essential partner for managing the health and longevity of your vehicle fleet. By centralizing all maintenance information, offering smart scheduling, and providing powerful reporting capabilities, it delivers immense value:

- **Effortless Management:** Say goodbye to manual spreadsheets and guesswork. All your maintenance needs are organized and accessible.

- **Significant Cost Savings:** Proactive maintenance and cost analysis help you reduce unexpected repairs and identify areas for efficiency.
- **Enhanced Compliance & Safety:** Timely reminders for inspections and services ensure your vehicles meet regulatory standards and operate safely.
- **Maximized Vehicle Uptime:** Minimize breakdowns and unplanned downtime, keeping your fleet productive and reliable.
- **Peace of Mind:** With comprehensive tracking and smart alerts, you can be confident that your vehicles are well-maintained and ready for any task.

By harnessing the capabilities of this system, you're not just tracking maintenance; you're actively safeguarding your assets, optimizing operations, and making smarter decisions for the future of your fleet.