

# Vehicle Request Tracker — User Guide

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## Table of Contents

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1. [Getting Started](#)
  2. [User Roles & Permissions](#)
  3. [Registration & Login](#)
  4. [Dashboard](#)
  5. [Vehicle Bookings](#)
  6. [Trips](#)
  7. [Vehicles](#)
  8. [Maintenance](#)
  9. [Reports](#)
  10. [Calendar](#)
  11. [User Management \(Admin\)](#)
  12. [Audit Log \(Admin\)](#)
  13. [Profile & Password Management](#)
  14. [Validation Rules Reference](#)
  15. [Email Notifications](#)
  16. [Security Features](#)
  17. [Troubleshooting & FAQs](#)
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## 1. Getting Started

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The **Vehicle Request Tracker** is an internal web application for tracking vehicle bookings, trips, maintenance, and avoiding scheduling conflicts.

### Accessing the System

- Open the application URL in your web browser (Chrome, Edge, Firefox, or Safari recommended).

- You will be directed to the **Login** page.

## Default Admin Account

On first launch, a default administrator account is created: - **Username:** admin - **Password:** admin123 - You will be required to change this password on first login.

## 2. User Roles & Permissions

The system has three user roles:

Feature	Admin	Driver	Requester
View Dashboard, Bookings, Calendar, Reports	✓	✓	✓
Create a Booking	✓	✓	✓
Cancel a Booking (Pending/Approved)	✓	✓	✓
Start / End a Trip	✓	✓	✓
Approve Bookings	✓	x	x
Assign a Driver to a Booking	✓	x	x
Add / Edit / Delete Vehicles	✓	x	x
Add / Complete / Cancel / Delete Maintenance	✓	x	x
Manage Users (List, Edit, Delete, Reset Password)	✓	x	x
View Audit Log	✓	x	x
Edit Own Profile / Change Password	✓	✓	✓

**Note:** All new registrations default to the **Requester** role. An admin can change a user's role later.

## 3. Registration & Login

### 3.1 Registering a New Account

1. Click "**Register here**" on the login page.
2. Fill in the required fields:

Field	Requirement
Full Name	Required
Username	Required, minimum 3 characters, letters/numbers/dots/underscores only
Email	Required, must be a valid email address
Password	Required, minimum 6 characters
Confirm Password	Must match the password above

1. Click **Register**. You will be redirected to the login page.

#### ✓ Validation Checks

- Username must be unique (not already taken).
- Email must be unique (not already registered).
- Username allows only: a-z, A-Z, 0-9, ., \_
- Passwords must be at least 6 characters and must match.

### 3.2 Logging In

1. Enter your **Username** and **Password**.
2. Click **Login**.

#### ✓ Validation Checks

- Both fields are required.
- Deactivated accounts cannot log in (contact your admin).
- Login is rate-limited to **10 attempts per minute** for security.

### 3.3 Forgot Password

1. Click "**Forgot your password?**" on the login page.
2. Enter your registered email address.

3. A password reset link will be sent to your email (valid for **24 hours**).
4. Click the link, then set your new password (minimum 6 characters).

#### ✓ Validation Checks

- Rate-limited to 5 requests per minute.
- Reset tokens expire after 24 hours.
- New password must be at least 6 characters.

## 4. Dashboard

After logging in, you will see the **Dashboard** with summary statistics:

- **Total Vehicles** in the system
- **Active Bookings** (pending + approved)
- **Total Trips** completed
- **Upcoming Maintenance** records

The dashboard provides a quick overview of the system's current state.

## 5. Vehicle Bookings

### 5.1 Viewing Bookings

- Navigate to **Bookings** from the navbar.
- Bookings are displayed in a paginated table (20 per page).
- Use the **Status filter** to view bookings by status: Pending, Approved, Completed, or Cancelled.

### 5.2 Creating a New Booking

1. Click **"New Booking"**.
2. Fill in the booking form:

Field	Required	Validation
Vehicle	Yes	Must select a vehicle; vehicles under maintenance are disabled
Assigned Driver	No	Optional; select from available drivers

Planned Start Date/Time	Yes	Cannot be in the past
Planned End Date/Time	Yes	Must be after the start date/time
Route From	Yes	Text field
Route To	Yes	Text field
Purpose	Yes	Text area describing trip purpose
Activity Code	No	Optional reference code
Project Code	No	Optional project reference for budget tracking

1. Click **Submit**.

#### ✓ Validation Checks

- **Schedule Conflict Detection:** The system checks if the selected vehicle already has a pending or approved booking that overlaps with the requested time range. If a conflict exists, the booking is rejected.
- **Conflict Formula:** Two bookings overlap when  $\text{Booking A start} < \text{Booking B end}$  AND  $\text{Booking B start} < \text{Booking A end}$ .
- **Past Date Check:** Start date/time cannot be in the past.
- **Duration Check:** End date/time must be after start date/time.
- **Vehicle Availability:** Vehicles with status "Maintenance" cannot be booked.

## 5.3 Booking Status Flow

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Pending → Approved → Trip Started → Trip Ended → Completed
    ↓           ↓
Cancelled  Cancelled

```

## 5.4 Approving a Booking (Admin Only)

1. Open a booking with **Pending** status.
2. Click **Approve**.

#### ✓ Validation Checks

- Only **Pending** bookings can be approved.
- The system re-checks for scheduling conflicts at the time of approval.

## 5.5 Cancelling a Booking

1. Open the booking.
2. Click **Cancel**.

### ✓ Validation Checks

- Only **Pending** or **Approved** bookings can be cancelled.

## 5.6 Assigning a Driver (Admin Only)

1. Open the booking detail page.
2. Under "**Assign / Change Driver**", select a driver from the dropdown.
3. Click **Assign**.

## 5.7 Deleting a Booking (Admin Only)

- Click the **Delete** button on the booking detail page or the booking list.
- This also deletes any associated trip data.
- **This action cannot be undone.**

# 6. Trips

## 6.1 Starting a Trip

1. Open an **Approved** booking.
2. Click **Start Trip**.
3. Fill in:

Field	Required	Validation
Actual Start Date/Time	Yes	Valid date/time
Odometer Start (km)	Yes	Must be a non-negative integer

1. Click **Start Trip**.

### ✓ Validation Checks

- Only **Approved** bookings without an existing trip can start a trip.
- Odometer reading must be 0 or greater.
- Starting a trip sets the vehicle status to **In Use**.

## 6.2 Ending a Trip

1. Open the booking with an active trip.
2. Click **End Trip**.
3. Fill in:

Field	Required	Validation
Actual End Date/Time	Yes	Must be after the trip start time
Odometer End (km)	Yes	Must be $\geq$ Odometer Start reading
Fuel Used (Litres)	No	Must be non-negative if provided
Fuel Cost (KES)	No	Must be non-negative if provided
Remarks	No	Free text

1. Click **End Trip**.

### ✓ Validation Checks

- End date/time must be **after** the start date/time.
- Odometer End must be  $\geq$  **Odometer Start** (you can't drive negative distance).
- Fuel Used and Fuel Cost must be non-negative numbers (if provided).
- Distance is **automatically calculated** as: `Odometer End - Odometer Start`.
- Ending a trip sets the booking status to **Completed** and vehicle status back to **Available**.

## 7. Vehicles

### 7.1 Viewing Vehicles

- Navigate to **Vehicles** from the navbar.
- All authenticated users can view the vehicle list.

### 7.2 Adding a Vehicle (Admin Only)

1. Click **"Add Vehicle"**.
2. Fill in:

Field	Required	Validation
Registration Number	Yes	Minimum 3 characters, must be unique
Make	Yes	e.g., Toyota, Nissan
Model	Yes	e.g., Land Cruiser, Patrol
Status	—	Available (default) or Maintenance

1. Click **Add Vehicle**.

#### ✓ Validation Checks

- Registration number is **automatically converted to uppercase**.
- Registration number must be **unique across all vehicles**.
- All three fields (Registration, Make, Model) are required.

## 7.3 Editing a Vehicle (Admin Only)

1. Click **Edit** on the vehicle list.
2. Update the desired fields.
3. Click **Update Vehicle**.

#### ✓ Validation Checks

- Same as adding, plus uniqueness check excludes the current vehicle.

## 7.4 Deleting a Vehicle (Admin Only)

- Click **Delete** on a vehicle.
- **Warning:** This deletes ALL associated maintenance records, bookings, and trip data.
- **This action cannot be undone.**

## Vehicle Status Flow

Status	Meaning
Available	Vehicle can be booked
In Use	A trip is currently active for this vehicle
Maintenance	Vehicle is undergoing maintenance and cannot be booked



## 8. Maintenance

### 8.1 Viewing Maintenance Records

- Navigate to **Maintenance** from the navbar.
- Records are paginated and filterable by status.

### 8.2 Scheduling Maintenance (Admin Only)

1. Click "**Schedule Maintenance**".
2. Fill in:

Field	Required	Validation
Vehicle	Yes	Select from vehicle list
Maintenance Type	Yes	Routine / Repair / Inspection / Tyre / Other
Description	Yes	Describe the maintenance work
Scheduled Date	Yes	Valid date
Estimated Cost (KES)	No	Must be non-negative if provided
Set vehicle to "Maintenance" now	No	Checkbox: immediately sets vehicle status

1. Click **Schedule**.

#### ✓ Validation Checks

- Vehicle, type, description, and date are all required.
- Cost must be non-negative.
- If the checkbox is ticked, the vehicle status changes to **Maintenance** immediately (preventing new bookings).

### 8.3 Completing Maintenance (Admin Only)

- Click the ✓ Complete button on a maintenance record.
- Sets the completion date and returns the vehicle to **Available** status.

### 8.4 Cancelling Maintenance (Admin Only)

- Click the **X Cancel** button.
- If the vehicle was in "Maintenance" status, it is returned to **Available**.

## 8.5 Deleting Maintenance (Admin Only)

- Click the  Delete button.

- ~~This action cannot be undone.~~

## 9. Reports



### 9.1 Vehicle Trip Report

1. Navigate to **Reports > Vehicle Trip Report**.
2. Optionally filter by:
3. **Vehicle** (dropdown)
4. **Date Range** (From / To)
5. Click **Generate Report**.
6. View completed trip details: dates, routes, distance, fuel, cost.
7. Click **Export to Excel** to download an `.xlsx` file with formatted data and totals.

### 9.2 Budget & Fuel Cost Report

1. Navigate to **Reports > Budget Report**.
2. View fuel cost summary grouped by **Project Code**.
3. Table shows: Project Code, Number of Trips, Total Distance (km), Total Fuel (L), Total Fuel Cost (KES).

## 10. Calendar

- Navigate to **Calendar** from the navbar.
- View all bookings in an interactive calendar (powered by FullCalendar).
- **Colour coding:**
-  **Yellow** = Pending bookings
-  **Green** = Approved bookings

## 11. User Management (Admin Only)

## 11.1 Viewing Users

- Navigate to **Users** from the navbar.
- Users are listed with role, status, and registration date.
- Paginated at 20 users per page.

## 11.2 Editing a User

1. Click **Edit** on a user.
2. Update: Full Name, Email, Role, Active Status.
3. Click **Update User**.

### ✓ Validation Checks

- Full name and email are required.
- Email must be unique (excluding the user being edited).
- Admin cannot deactivate their own account.
- Admin cannot remove their own admin role.

## 11.3 Resetting a User's Password

1. On the user edit page, scroll to **"Reset User Password"**.
2. Enter a new temporary password (minimum 6 characters).
3. Click **Reset Password**.
4. The user will be **forced to change their password** on next login.

## 11.4 Deleting a User

- Click **Delete** on the user list.
- **Warning:** This deletes all bookings and trips requested by the user and unassigns them as a driver from other bookings.
- Admin cannot delete their own account.
- **This action cannot be undone.**

## 12. Audit Log (Admin Only)

- Navigate to **Audit Log** from the navbar.
- View a chronological log of all system actions.
- Filter by:
  - **Entity Type:** User, Vehicle, Booking, Trip, Maintenance Record
  - **Action Type:** Create, Edit, Delete, Approve, Cancel, Assign, Complete
- Each entry shows: timestamp, user, action, entity, and details.

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## 13. Profile & Password Management

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### 13.1 Editing Your Profile

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1. Click your name in the navbar, then **Profile**.

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2. Update your **First Name** or **Last Name**.

3. Click **Update Profile**.

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#### ✓ Validation Checks

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- Email must be unique (not used by another account).

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### 13.2 Changing Your Password

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1. Click your name in the navbar, then **Change Password**.

2. Fill in:

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Field	Requirement
Current Password	Must be correct
New Password	Minimum 6 characters, must differ from current
Confirm New Password	Must match new password

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1. Click **Change Password**.

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#### ✓ Validation Checks

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- Current password is verified before allowing the change.
- New password must be different from the current password.
- New password and confirmation must match.
- Minimum 6 characters.

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## 14. Validation Rules Reference

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### Quick Reference — All Validation Checks

Area	Rule	Type
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	Username ≥ 3 chars, alphanumeric + dots/underscores	Server + Client
Registration	Username must be unique	Server
Registration	Email must be valid and unique	Server + Client
Registration	Password ≥ 6 characters	Server + Client
Registration	Passwords must match	Server + Client
Login	Both fields required	Client
	Deactivated accounts blocked	Server
Login	Rate limited: 10/minute	Server
Password Reset	Token expires after 24 hours	Server
Password Reset	Rate limited: 5/minute	Server
Change Password	Current password must be correct	Server
Change Password	New ≠ Current password	Server
Change Password	New password ≥ 6 characters	Server + Client
Booking	Vehicle required, not under maintenance	Server
Booking	Start date cannot be in the past	Server
Booking	End date must be after start date	Server + Client
Booking	Route From, Route To, Purpose are required	Server + Client
Booking	No scheduling conflict with same vehicle	Server
Booking	Re-checked at approval time	Server
Trip Start	Odometer ≥ 0	Server + Client
Trip Start	Only for approved bookings without trip	Server

<b>Trip End</b>	End time > Start time	Server + Client
<b>Trip End</b>	Odometer End ≥ Odometer Start	Server + Client
<b>Trip End</b>	Fuel Used and Cost ≥ 0 (if provided)	Server + Client
<b>Vehicle</b>	Registration ≥ 3 chars, unique	Server + Client
<b>Vehicle</b>	Make and Model required	Server + Client
<b>Maintenance</b>	Vehicle, Type, Description, Date required	Server + Client
<b>Maintenance</b>	Cost ≥ 0 (if provided)	Server + Client
<b>User Edit</b>	Email must be unique (excluding self)	Server
<b>User Edit</b>	Cannot self-deactivate or self-demote	Server
<b>User Delete</b>	Cannot delete own account	Server
<b>All Forms</b>	CSRF token required	Server

## 15. Email Notifications

Email notifications are sent automatically when enabled:

Event	Who Gets Notified
New booking created	All active admins + the requester
Booking approved	The requester
Booking approved (with driver)	The assigned driver
Driver assigned or changed	The newly assigned driver
Booking cancelled	The requester + assigned driver (if any)
Password reset requested	The user who requested it

**Note:** Email notifications must be enabled by the administrator (environment variable `MAIL_ENABLED=1`).

## 16. Security Features

Feature	Details
<b>CSRF Protection</b>	All forms include a security token to prevent cross-site request forgery
<b>Password Hashing</b>	Passwords are securely hashed; never stored in plain text
<b>Rate Limiting</b>	Login (10/min), Registration (5/min), Forgot Password (5/min)
<b>Session Timeout</b>	Automatic logout after <b>15 minutes</b> of inactivity; a warning appears at 14 minutes
<b>Forced Password Change</b>	Admin-reset accounts must change their password on first login
<b>Open Redirect Prevention</b>	Login redirects are validated to prevent malicious redirects
<b>Audit Trail</b>	All actions are logged with user, timestamp, and details

## 17. Troubleshooting & FAQs

**Q: I get "The CSRF tokens do not match" error.** A: Refresh the page and try again. This can happen if your session expired or the page was open too long.

**Q: I can't book a vehicle.** A: Check that the vehicle is not under maintenance. Also, ensure your requested time does not conflict with an existing pending or approved booking.

**Q: I forgot my password.** A: Click "Forgot your password?" on the login page. Enter your registered email, and a reset link will be sent.

**Q: My account is deactivated.** A: Contact your administrator to reactivate your account.

**Q: I get "Rate limit exceeded" error.** A: Wait a minute and try again. This is a security measure to prevent brute-force attacks.

**Q: I was logged out unexpectedly.** A: The system automatically logs you out after 15 minutes of inactivity. Log in again to continue.

**Q: How do I export trip data?** A: Go to **Reports > Vehicle Trip Report**, set your filters, and click **Export to Excel**.


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