

Vehicle Request Tracker — User Guide

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1. Getting Started

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 | ✓ | ✗ | ✗ |
| Assign a Driver to a Booking | ✓ | ✗ | ✗ |
| Add / Edit / Delete Vehicles | ✓ | ✗ | ✗ |
| Add / Complete / Cancel / Delete Maintenance | ✓ | ✗ | ✗ |
| Manage Users (List, Edit, Delete, Reset Password) | ✓ | ✗ | ✗ |
| View Audit Log | ✓ | ✗ | ✗ |
| 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 **Booking**.

✓ 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 `Booking A start < Booking B end AND Booking B start < 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

```

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 |
|--------------------|--|
| | 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 **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.

13. Profile & Password Management

13.1 Editing Your Profile

1. Click your name in the navbar, then **Profile**.
2. Update your **Name** or **Email**.
3. Click **Update Profile**.

✓ Validation Checks

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

13.2 Changing Your Password

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

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

1. Click **Change Password**.

✓ Validation Checks

- 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.

14. Validation Rules Reference

Quick Reference — All Validation Checks

| Area | Rule | Type |
|------|------|------|
| | | |

| | | |
|------------------------|--|-----------------|
| | Username \geq 3 chars, alphanumeric + dots/underscores | Server + Client |
| Registration | Username must be unique | Server |
| Registration | Email must be valid and unique | Server + Client |
| Registration | Password \geq 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 \neq Current password | Server |
| Change Password | New password \geq 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 \geq 0 | Server + Client |
| Trip Start | Only for approved bookings without trip | Server |

| | | |
|--------------------|---|-----------------|
| Trip End | End time > Start time | Server + Client |
| Trip End | Odometer End \geq Odometer Start | Server + Client |
| Trip End | Fuel Used and Cost ≥ 0 (if provided) | Server + Client |
| Vehicle | Registration ≥ 3 chars, unique | Server + Client |
| Vehicle | Make and Model required | Server + Client |
| Maintenance | Vehicle, Type, Description, Date required | Server + Client |
| Maintenance | Cost ≥ 0 (if provided) | Server + Client |
| User Edit | Email must be unique (excluding self) | Server |
| User Edit | Cannot self-deactivate or self-demote | Server |
| User Delete | Cannot delete own account | Server |
| All Forms | 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 |
|---------------------------------|---|
| CSRF Protection | All forms include a security token to prevent cross-site request forgery |
| Password Hashing | Passwords are securely hashed; never stored in plain text |
| Rate Limiting | Login (10/min), Registration (5/min), Forgot Password (5/min) |
| Session Timeout | Automatic logout after 15 minutes of inactivity; a warning appears at 14 minutes |
| Forced Password Change | Admin-reset accounts must change their password on first login |
| Open Redirect Prevention | Login redirects are validated to prevent malicious redirects |
| Audit Trail | 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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