



qsg.app

Vehicle Booking System

Fleet vehicle booking and management that is fast, transparent and automatic. Replacing the whiteboard with one real time system, right on your phone.

● Mobile first PWA

● Real time

● WhatsApp notifications

● Secure by design

What is qsg.app?

qsg.app (**Vehicle Booking System**) is a mobile web app (PWA) that lets government departments manage bookings for their entire vehicle fleet. Requesters request a vehicle, approvers approve, and drivers receive their assignments, all in one automated, auditable workflow straight from the phone. Request a vehicle, approvers approve, and drivers receive their assignments, all in one automated, auditable workflow straight from the phone.



One app, every role

Requester, approver, driver and supervisor in a single system.



Real time

Booking status and vehicle availability update instantly.



WhatsApp

Notifications go straight to WhatsApp. No new app to teach.

LIVE AT

didmukah.qsg.app

Product for staff, approvers and drivers.

PLATFORM

Web + mobile

Installable PWA. No app store, works on any phone.

STATUS

Pilot active

JPS Mukah, Sarawak. Full vehicle fleet, one system.

Government fleets are still run on a whiteboard.

Most district offices manage vehicle bookings by hand, with a whiteboard and a WhatsApp group. It is slow, error prone, and leaves no record behind.



Overlapping bookings

No conflict detection. Two people can book the same vehicle on the same day.



No record or accountability

Approvals happen verbally or over chat. Who approved, when, and why is never documented.



Drivers miss assignments

Instructions travel by word of mouth. Drivers turn up late for pickup, or never hear about the trip.



No visibility of fleet status

Officers cannot see which vehicles are broken down, in service, or which drivers are on leave.



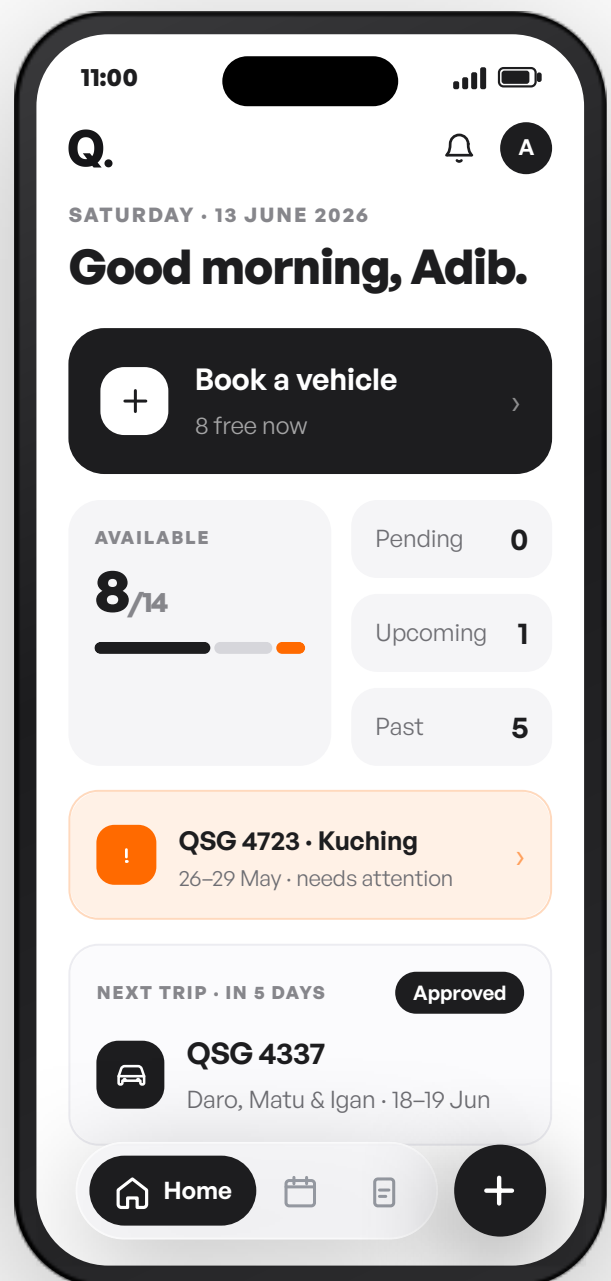
Not accessible remotely

The whiteboard lives in the office. Field staff in Sibul, Daro or Dalat cannot check it.

QSG: one workflow, from request to road.





QSG turns the manual process into one clean digital flow. The requester requests, the approver approves, the driver receives the job, with automatic conflict checking and instant notifications.

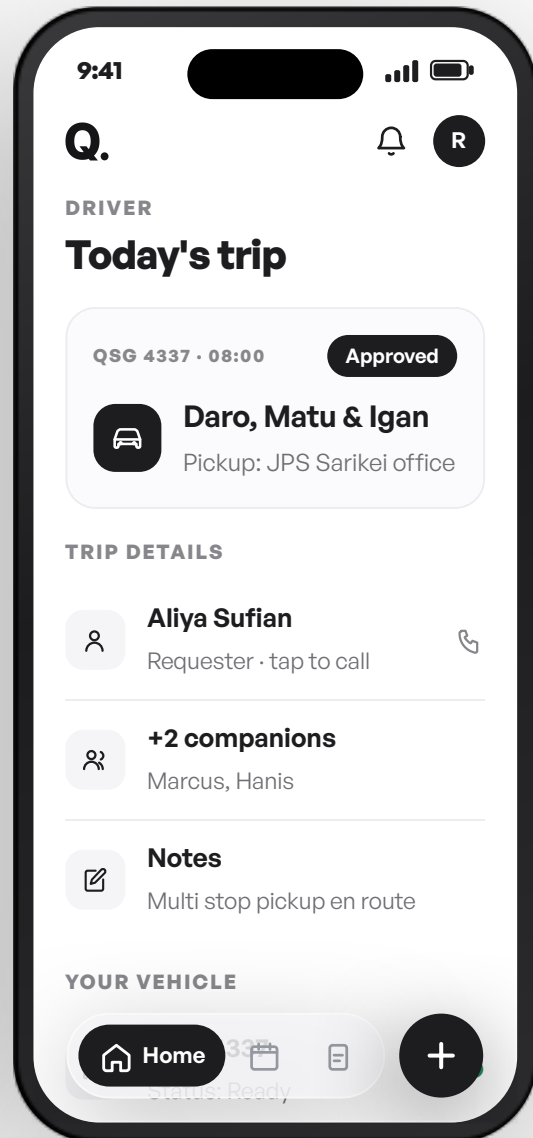
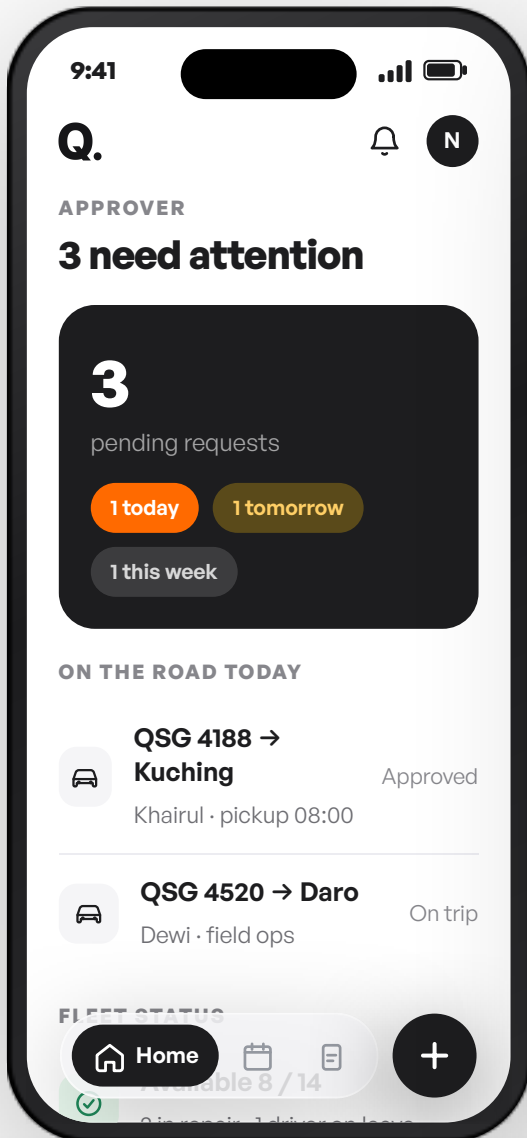
- 1 Requester requests a vehicle**
Pick a date and the form auto filters the vehicles that are free. Add destination, pickup point and companions.
- 2 Approver reviews and approves**
See the queue by priority. Swap vehicle or driver if needed, and the reason for every swap is recorded.
- 3 Driver receives the job**
WhatsApp plus in app notification. See pickup time, destination and the requester's phone number.
- 4 Transparent and auditable**
Every approval, swap and cancellation is stored with who, when and why.



Four roles, one system in sync.

Each role sees only what is relevant to them, enforced at the database level rather than just hidden in the interface.

 Requester (User) Request a vehicle, view availability, cancel own bookings.	 Driver Today's assignment, requester's phone number, manage leave dates.	 Approver Approve or reject, swap vehicles, lock dates, manage fleet and users.	 Supervisor Sees the full picture across the fleet and bookings, view only.
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Built for real operations in the field.



Conflict detection

The form auto disables vehicles that are booked, in repair, or whose driver is on leave. Double booking is impossible.



Approver swap with audit

Approvers can change vehicle or driver, while the system keeps what the requester originally asked for.



12 hour lead time

Enforced in the database to avoid last minute bookings that disrupt operations.



Date locking

Approvers can block a vehicle for service, training, or an HQ visit.



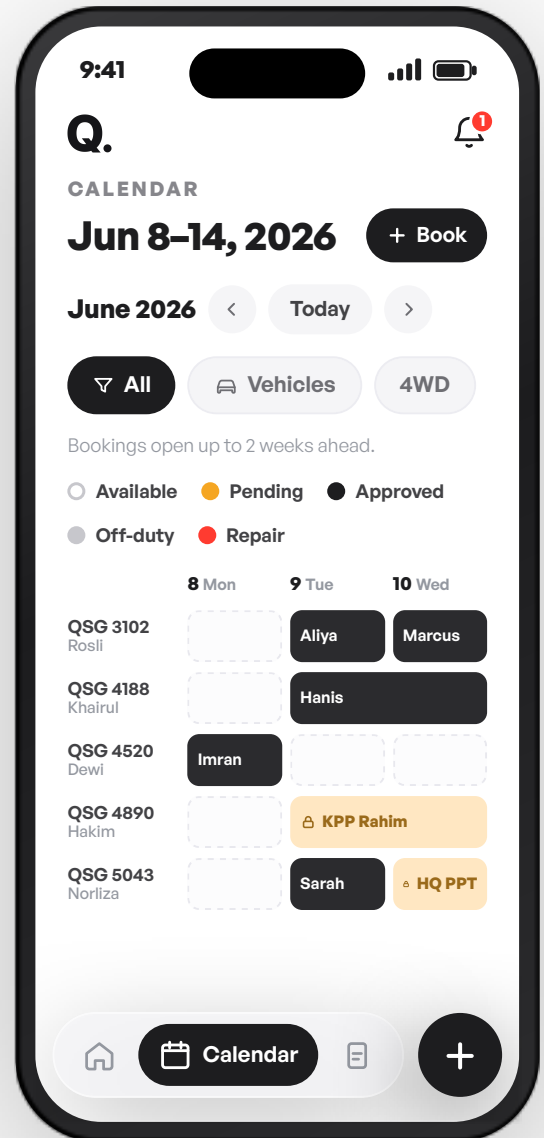
Two channel notifications

WhatsApp plus Web Push. Every message is logged and never sent twice (idempotent).



Reference & history


Every booking has a reference number (Q.NNNN) and full history for audit.



Built on a modern stack, ready to scale.

A serverless and edge architecture: fast across the whole country, with no servers to maintain and built to stay fast as you grow.


FRONTEND	Next.js 16 · React 19 · Tailwind v4 App Router, TypeScript, minimalist design
BACKEND	Supabase: PostgreSQL · Auth · Realtime Managed database with live updates
HOSTING	Cloudflare Workers (edge) Global, auto scaling, built in DDoS protection
NOTIFICATIONS	WhatsApp gateway + Web Push (PWA) Dedicated delivery engine, locked behind a private key
FORMAT	Progressive Web App (PWA) Installable on the phone, no app store needed



HOSTING

Global edge

Runs close to every user across the country, with DDoS protection built in.



SCALING

Automatic

Capacity grows with demand. No servers to provision or maintain.

Secure by foundation, not as an afterthought.

Security is enforced at every layer, and especially at the database. Even if the interface were compromised, the data stays protected.



Row Level Security on every table

Each row is filtered in the database by user role, not just hidden on screen. Requesters cannot reach anyone else's data, even if they try.



Protected admin layer

Administrative and management functions sit behind an extra authentication layer and middleware, separated from everyday user access.



Role based access control (RBAC)

Four distinct roles with precise permissions. Write actions (approve, cancel, manage assets) are limited to the roles allowed to perform them.



Full audit trail

Every approval, swap and cancellation is recorded: who, when and why. Essential for government compliance and governance.



Secure sessions and managed auth

Supabase Auth with SSR cookies. Supports email and password plus Google. The service role key stays on the server, never exposed to the browser.



Secret protected endpoints and gateway

Cron and the WhatsApp gateway are guarded by a shared secret. Notifications are idempotent, with no duplicate sends or replay.

RLS

on every table

4

roles, least privilege

TLS

edge plus Cloudflare DDoS

100%

of actions auditable

Win one district, then template it for hundreds.

Every district government department runs a vehicle fleet with the same problems. Once the JPS Mukah pilot is proven, the same system can be reused across departments.

PILOT

JPS Mukah

A live vehicle fleet running district operations across Sarawak. Trial active May to July 2026.

NEAR TERM EXPANSION

JPS · JKR · JBALB · District Offices

Departments running the same vehicle fleet operations across Sarawak.

FULL SCALE

Hospitals · Councils · Agencies

Any organisation that manages a shared vehicle fleet.

WHY IT SCALES

Every department faces the same workflow, so the product transfers with almost no rework. A free trial to onboarding funnel is already built into the app (days remaining shown in Settings), and the architecture is ready for multi tenancy the moment the second customer comes on board.

Improvement ideas, by phase.

Proposed priorities to strengthen the product and open up scale, organised by phase.

Near term · hardening

True offline mode

Field staff in weak coverage areas can check and queue bookings without internet.

Logsheet & odometer

Drivers close a trip and record distance and fuel for automatic usage reports.

Language toggle (BM/EN)

Bilingual UI for government users more comfortable in Malay.

Growth · operational value

Analytics dashboard

Vehicle utilisation, trips per month and reports. Export to PDF or Excel for management.

Maintenance schedule

Service reminders by distance or date, auto locking a vehicle during service.

Two way WhatsApp

Drivers and approvers confirm straight from WhatsApp, not just one way alerts.

Enterprise · scale

Multi tenancy

A tenants table plus data isolation to onboard many departments.

2FA & government SSO

Two factor auth for approvers and admins, plus government identity integration.

Data residency & PDPA

In country data hosting and PDPA compliance for government procurement.



From a whiteboard, to one system.

QSG makes government fleet operations fast, transparent and secure: mobile, real time and reliable. The pilot is proven.

Ready to scale.

qsg.app

didmukah.qsg.app

Pilot

JPS Mukah, Sarawak

Secure

RLS + full audit

Thank you. Let's talk.