Test Plan – RideNow

1) Scope

- **In**: FR1–FR6 (registration/login, driver KYC, ride request/assignment, accept/reject, complete + fare, payment cash/card, rating); core NFRs (performance, security, reliability, usability).
- **Out (this cycle)**: driver onboarding background checks, promo codes, surge pricing, receipts/invoices, in-app chat/call masking, multi-currency, multi-language (unless added below as gaps/assumptions).

2) Test Strategy

- **Levels**: Unit (dev-owned), API (Postman), Integration (end-to-end flows via mobile), UI (Android/iOS smoke + regression), Data (DB validations), NFR (perf/sec/usability).
- **Tech**:
    - API: Postman.
    - Mobile UI: manual exploratory + scripted; device matrix (Android 11–14; iOS 15–17; mid/high devices).
    - Perf: JMeter (Ride Request, Accept, Fare calc, Payment).
    - Sec: OWASP Mobile Top 10 checks, basic API auth/authorization tests.
    - DB: SQL asserts for rides/payments/ratings integrity.

3) Entry / Exit Criteria

- **Entry**: APIs stable (v1), build installable, test env + seed data ready, payment sandbox keys, critical and high priority defects from previous build ≤ 0.
- **Exit**: All P1/P2 closed/accepted; functional pass $\geq 95\%$; perf: p95 $\leq$ 2s for critical APIs under 10k concurrent; no Sev-1/2 security findings open; regression pass.

4) Environments & Data

- **Env**: Staging with production-like config, GPS mock enabled, payment sandbox.
- **Test Data**:
    - Customers: valid/invalid emails/phones; blocked accounts.
    - Drivers: KYC sets (valid, expired, mismatched), statuses (available/on_trip).
    - Geo: valid/invalid addresses, long distances, zero-distance, no-driver-nearby regions.
    - Payments: cash, valid card, declined, timeouts, retries.

5) Risks & Mitigations

- **Assignment race conditions** → simulate bursts; verify single-assignment lock.
- **Payment flakiness** → idempotency keys; retry logic tests.
- **GPS inaccuracies** → mock jitter; verify fare tolerance rules.

6) Test Sizing (Estimation)

6.1 Functional test case counts (design-level)

Area	Est. Cases
FR1 User Mgmt (register/login, dup email/phone, password rules, driver license upload)	35
FR2 Ride Request & Assignment (validation, no drivers, retries, geo edge cases)	40
FR3 Ride Accept/Reject (timeouts, conflicts, reassign)	25
FR4 Complete & Fare (distance/time/min fare/rounding/cancellations)	30
FR5 Payment (cash/card, pending/paid/failed, retry, idempotency)	35
FR6 Rating (bounds, one-per-ride, missing ride, permissions)	15
Functional subtotal	**180**

6.2 Non-functional scenarios

NFR	Scenarios
Performance (p95≤2s; 10k conc.) – load, stress, spike, soak, scalability	16
Security – auth/authorization, input validation, transport/storage encryption checks	10
Reliability – failover/retry/idempotency, DB constraints, job restarts	6
Usability – first-time flow, SUS quick survey, error messages, accessibility basics	8
NFR subtotal	**40**

Total estimated tests: **~220** (180 functional + 40 NFR)

6.3 Effort model (assumptions)

- Avg per functional case: **Design 0.5h + Exec 0.33h + Retest 0.17h ≈ 1.0h**
- Functional effort ≈ **180h**
- NFR scripting & runs ≈ **70h**
- Overheads (planning, environment, reporting, triage) **+30% ≈ 75h**
- **Total ≈ 325h ≈ 40 person-days (8h/day)**
- With **2 QA FTE**, **~10 working days** (2 weeks) for full cycle incl. regression.

If you want leaner: prioritize **FR2–FR5** + smoke on others → ~60% scope in ~1 week.

7) Test Schedule (high level)

Phase	Activities	Duration	Role	Allocated Resource(s)	Effort (Person-Days)
Analysis	Business understanding, Requirement study, PRD comments, risk analysis, test planning for API, Mobile, Performance, Security	2	Test analyst	1	5
Design	Test case design (API tests, Data base validation, mobile scenarios, performance scripts, regression suite)	3			
Execution	Run functional tests (UI + API), performance load tests, mobile device coverage & data base	4	Automation & Manual Testers	3	12
Retest	Fix verification & defect retesting across API, Mobile, and Functional	2	Automation & Manual Testers	2	4
Regression	Full regression suite execution across all platforms	2	Automation Testers	1	2
UAT	User acceptance testing with stakeholders	1	Mobile Tester	2	4
Closure Report	Test summary, defect density, coverage, lessons learned	1	Test Manager	1	1

8) Deliverables

- Test Plan, Test Cases (API/UI), Data sheet, Perf test scripts & report, Security checklist, Daily defect report, Final Test Summary Report.

9) Test Metrics

- Pass/fail per requirement, defect density (per feature), severity distribution, p95 latency per API, crash-free sessions, SUS score (target ≥ 75).