

Technical Rules + Free Tech Stack (Hackathon-Ready)

1) Core Tech Stack (Free Only)

Frontend (Web App)

- Next.js (TypeScript)
- Tailwind CSS
- Map: Leaflet + OpenStreetMap (free)

Backend

- Next.js API Routes (same repo, simple)

Database + Auth + Storage (Free Tier)

- Supabase
 - Postgres database
 - Authentication (optional)
 - File storage for photos

Hosting (Free)

- Vercel for Next.js deployment
- Supabase for DB + storage

AI Chatbot (Free Option)

- Optional for MVP
- Hackathon chatbot can be pre-written FAQ responses (fully free)

2) Technical Rules (Must Follow)

Repo Rules

- Single repo
- Single Next.js app

Folder layout:

/app (pages + UI)
/lib (db, helpers)
/components (reusable UI)
/types (TypeScript types)

Coding Rules

- TypeScript everywhere
- ESLint + Prettier
- Avoid 'any' unless needed
- Keep functions small and readable

Database Rules (Supabase Postgres)

Required tables:

- reports
- votes
- users (optional if using Supabase Auth)

Use timestamps on all tables: created_at, updated_at

Prevent double voting: unique(user_id, report_id)

Photo Upload Rules

- Upload photos to Supabase Storage
- Store photo_url in DB
- Max size: 5MB
- Formats: JPG/PNG

Map Rules

- Must use OpenStreetMap
- Must use Leaflet
- Store coordinates as lat + lng

Security + Abuse Prevention (Lightweight)

- Rate limit: max 5 reports per user per day
- Require login for voting (optional)
- Block obvious invalid coordinates

API Rules (Next.js API Routes)

Validate input for every request

Minimum endpoints:

- POST /api/reports
- GET /api/reports
- POST /api/reports/:id/upvote
- GET /api/leaderboard

3) Deployment Rules (No Docker)

- Deploy on Vercel
- Use Supabase env vars:
NEXT_PUBLIC_SUPABASE_URL
NEXT_PUBLIC_SUPABASE_ANON_KEY

4) Hackathon Simplicity Constraints

- No background jobs
- No websockets / realtime
- No complex roles
- No payments
- No paid map APIs