

## 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