Commit Life

Created	@August 16, 2025 2:24 PM
Tags	

📘 Life Commit Tracker — Technical Documentation

1. Overview

Goal: A mobile app for habit tracking across personal "pillars" (e.g., Spiritual, Fitness, Career).

Concept: Each completed habit = a “commit,” visualized like GitHub contributions.

Deliverables:

- Track habits & actions.
- Generate monthly summaries.
- Organize habits into pillars.
- Provide insights (heatmaps, streaks, stats).

2. Architecture

📱 Client

- **Framework:** React Native (Expo for fast dev & cross-platform iOS/Android).
- **UI Kit:** Tailwind RN + custom components.
- **State Management:** Zustand or Redux Toolkit (lightweight, predictable).
- **Auth:** Supabase Auth SDK (social login optional).

☁️ Backend (Supabase)

- **Database:** Postgres (Supabase-hosted).
- **Auth:** Supabase Auth (JWT-based, built-in RLS).
- **APIs:** Supabase client SDK (auto-generated queries).
- **Functions:** Supabase Edge Functions (for summaries, scheduled jobs).
- **Storage:** Supabase Storage (for optional notes, uploads later).

🌍 Deployment

- **App:** Expo EAS for app stores.
- **Backend:** Supabase Cloud (Pro plan for scaling).

---

3. Data Model (Postgres)

Tables

User

- id (UUID, PK)
- name, email
- created_at, updated_at

Pillar

- id (PK)
- user_id (FK → User)
- name, icon

Habit

- id (PK)
- pillar_id (FK → Pillar)
- name
- frequency_type (enum: daily, weekly, monthly)
- target_per_period (int)

Action (Commit)

- id (PK)
- habit_id (FK → Habit)
- user_id (FK → User)
- date (timestamp)
- note (text)
- value (float, nullable)

Summary

- id (PK)
- user_id (FK → User)
- pillar_id (FK → Pillar, nullable)
- month (YYYY-MM)
- total_actions (int)
- streak_longest (int)
- completion_rate (%)
- highlights (JSON)

---

4. Key Features

✅ Core

- Add custom **Pillars** & **Habits**.
- Log **Actions (Commits)** daily.
- View heatmap of actions (like GitHub).
- Monthly **Summary Reports**.

🎖️ Gamification

- Streaks tracking.

- Badges (e.g., “7-day streak,” “100 commits”).
- Contribution calendar view.

📊 Insights

- Habit completion % per month.
- Compare across pillars (e.g., Fitness vs Career).
- Export data (CSV/JSON).

---

5. Technical Design

Auth

- Supabase Auth with JWT.
- Row-Level Security → each `user_id` only sees their own data.

API Access

- Direct Supabase SDK for most queries.
- Edge Functions for:
  - Monthly summary aggregation.
  - Scheduled reminders (via CRON jobs).

Scheduling

- Supabase CRON triggers (Edge Functions) to auto-generate summaries at end of each month.

---

6. Costs (Initial)

- Supabase Free → good for testing.
- Supabase Pro (~$25/month) → production-ready (up to ~5–10k users).
- Expo EAS → free for basic builds, $29/mo for advanced CI/CD.
- App Store fees:

    - iOS: $99/year
    - Google Play: $25 one-time

7. Scaling & Migration Path

- Scale up on Supabase → higher Pro plans.
- If user base >50k MAU or enterprise needs → migrate Postgres to **Aurora/Neon**, move Edge Functions to **AWS Lambda**, keep frontend unchanged.

8. Roadmap

Phase 1 (MVP)

- User auth
- Pillar/Habit CRUD
- Log actions (commits)
- Heatmap view
- Basic monthly summary

Phase 2 (Growth)

- Gamification (badges, streaks)
- Notifications & reminders
- Export/share progress
- Family/group view (social layer)

Phase 3 (Scale)

- Analytics dashboard
- Multi-device sync & offline-first
- Premium subscription model

Extra Document:

🚀 Product goal

“GitHub-style life commits” mobile app. Track actions across pillars → daily heatmap → monthly summary → streaks/badges.

🧱 Architecture (MVP → Scale)

Option A — **Fastest & Cheapest to ship (recommended MVP)**

- **App:** React Native (Expo), TypeScript
- **Backend & DB: Supabase** (Postgres + Auth + Row Level Security)
- **ORM:** Drizzle or Prisma (Drizzle is lighter)
- **Functions/Jobs:** Supabase Edge Functions + Scheduled jobs (cron) for monthly summaries
- **Push notifications:** Expo Notifications (FCM + APNs under the hood)
- **File storage (export PDFs/CSV):** Supabase Storage
- **Analytics:** PostHog (product analytics) + Sentry (crash)
- **Payments:** Stripe + RevenueCat (in-app subscriptions without crying)
- **Infra-as-code:** Supabase migrations (SQL), Drizzle migrations in repo

> Why: Zero server maintenance, generous free tier, Postgres fits your relational model, fastest dev loop.

Cost snapshot (ballpark, solo founder)

Option A (Supabase MVP)

- Supabase Pro: **$25/month** (often enough for early users)
- PostHog + Sentry: Free tiers (upgrade later)
- RevenueCat: Free until revenue threshold
- Expo EAS Build: Free/cheap hobby tier
- Domain/email: ~$2–10/month

  Total: ~$25–40/month to start

📱 App technicals

Client (Expo + TS)

- **State:** React Query (server cache) + Zustand (UI state)
- **Offline-first:** Expo SQLite (or WatermelonDB) to cache pillars, habits, today's actions
- **Sync strategy:**
  - Queue actions offline → background sync when online
  - Idempotent action POSTs (`client_action_id`)
- **UI kits:** Tamagui/NativeWind + phosphor icons
- **Testing:** Jest + React Native Testing Library
- **Build/CI:** GitHub Actions → EAS Build (iOS + Android)

API/DB (Supabase)

- **Tables:** `users`, `pillars`, `habits`, `actions`, `summaries` (from the ERD)
- **RLS (Row Level Security):**
  - Each table has `user_id`
  - Policies: `auth.uid() = user_id`

- **Computed views/materialized views:**
    - `daily_action_counts` (for heatmap)
    - `pillar_monthly_stats`
- **Edge Functions:**
    - `compute_monthly_summary(user_id, month)`
    - `nudge_neglected_pillars()` (if no actions in X days)
    - `export_report_pdf(user_id, month)` (generate + store link)
- **Cron:**
    - Nightly: recompute streaks, send reminders
    - 1st of month: finalize previous month summary + email report

---

🔌 API shape (simple & mobile-friendly)

```
POST  /v1/pillars             {name, icon}
GET   /v1/pillars             → list
POST  /v1/habits              {pillar_id, name, frequency, target_per_period}
GET   /v1/habits?pillar_id=...
POST  /v1/actions             {habit_id, date, note?, value?, client_action_id}
GET   /v1/actions?from&to&pillar_id?
GET   /v1/heatmap?from&to&pillar_id?     → [{date, count}]
GET   /v1/summary?month=YYYY-MM          → monthly stats
POST  /v1/export?month=YYYY-MM           → returns file URL
```

Notes

- All endpoints auth'd via Supabase JWT (no server session state).
- `client_action_id` prevents duplicates on replays.
- Return minimal JSON tailored to screens (heatmap buckets, not raw rows).

🪪 Data model niceties

- **`habits`**: add `metric_type` (`none | number | duration`) to log distance, minutes, RM, pages.
- **`actions`**: add `tags` (text[]) and `mood` (1–5) for future insights.
- **`summaries`**: cache JSON blob `{top_pillar, weakest_pillar, longest_streak, badges[]}` for fast loads.
- **Indexes**:
  - `actions (user_id, date)` (heatmap)
  - `actions (habit_id, date)` (habit history)
  - `habits (pillar_id)`; `pillars (user_id)`

🔔 Notifications

- Daily reminder window (user picks slot, respects prayer/bedtime).
- Smart nudge: “No Family commits in 3 days.”
- Streak saver: “You’re 1 action away from keeping your streak.”

(Expo Notifications is enough; later move to Firebase/OneSignal if needed.)

🔐 Privacy & Security

- RLS everywhere; never trust client `user_id`
- Encrypt at-rest (Postgres default) + at-transit (HTTPS)
- Audit log table: `audit_events (user_id, entity, action, ts)`
- Allow full account export & delete (GDPR-ish hygiene)

💰 Monetization (profitability plan)

Freemium

- Free: up to 3 pillars, 5 habits, last 3 months history, basic heatmap

- **Pro ($2.99–3.99/mo)**: unlimited pillars/habits, advanced analytics, custom reminders, PDF exports, themes
- **Early Supporter**: lifetime $29 one-time for first 1k users
- **Teams (later)**: shared pillar/habits (family, groups), $4/user/mo
- **Add-ons**: curated templates (Fitness Starter, Better Muslim Plan, Finance Habits)

Why this wins: predictable margin, low infra cost, strong habit loop → retention.

📈 Metrics to track (PostHog)

- Aha moment: first 7-day streak achieved
- DAU/WAU, retention D1/D7/D30
- Pillar balance score (variance across pillars)
- Activation funnel: create pillar → add habit → log 3 actions → view heatmap
- Conversion: Free → Pro (time to convert; features used before upgrade)

🛠️ Dev hygiene

- Repo: Turborepo (app + shared types + migrations)
- Types: `zod` for request/response contracts
- QA: Snapshot tests for heatmap bucketing; unit tests for streak logic / monthly rollovers
- Feature flags: `react-native-config` + environment variables
- Backups: Supabase automated backups; test restore quarterly

🔄 Migration path (if you outgrow Supabase)

- Lift Postgres to **Neon** or **Aurora v2**
- Replace auth with **Cognito**
- Move Edge Functions to **Lambda**
- Keep the same DB schema; rewrite only the auth + functions layer

---

If you want, I can:

1. generate the **SQL schema + RLS policies** for Supabase, or
2. scaffold an **Expo app** with the key screens + React Query wiring, or
3. outline the **streak & summary algorithms** (edge cases, month boundaries, skipped days).