ChatGPT

Overview

This project delivers **MBYC's cross-platform membership app** as a PWA-first React/React Native application, fully hosted on Replit [1] [2]. We will use React Native (with react-native-web) so the same codebase powers both web and mobile. Tailwind CSS will provide a high-end dark theme with purple/blue gradients and smooth animations (glow, hover, swoop). The UI will evoke the luxury yacht lifestyle – reflecting MBYC's "premier membership" offering unlimited yacht access [3] – with Apple-grade polish. Key services (bookings, services, experiences) are laid out in a bottom 3-tab navigation (like Airbnb) for intuitive access. The app is developed in a monorepo (e.g. using Nx) with shared code for web and native. All data is stored in Replit's built-in key-value database (no setup required) [4], and we'll set up a GitHub Actions CI/CD pipeline to build, test, and deploy automatically on changes.

Platform & Tech Architecture

- **Monorepo:** Use a tool like **Nx** or Turborepo to manage a single repo containing the web (PWA) and mobile (React Native) apps. For example, Nx's React Native plugin can generate apps/libs (`npx nx add @nx/react-native; npx nx g @nx/react-native:app mobile`) [5], sharing UI components and utilities. This ensures consistent code and styling across platforms.
- **React Native Web:** We will leverage [react-native-web] so React Native components render on the web, enabling PWA support. Adding `react-native-web` and a service worker lets us deploy the app as a PWA [6]. We may use Expo as a framework to simplify multi-platform builds (Expo supports web output), automatically generating a web manifest and service worker [7].
- **Tailwind CSS:** Configure Tailwind for a dark theme; define custom colors (deep purple, blue gradients) and animations. Use Tailwind's dark mode support and custom keyframes for glows/hover transitions to achieve the "Apple-level" UI polish.
- **Replit Environment:** The entire app will be developed and deployed on Replit. Replit provides instant cloud deployment, database hosting, and Git integration [1] [2]. We will include a `.replit` file to define the run commands and a `replit.nix` for any OS dependencies. The Replit DB (K-V store) will hold all persistent data [4]. Environment variables (API keys, secrets) will use Replit's secure **Secrets**.
- **Authentication & Roles:** Implement a custom auth system (e.g. email/password or OAuth) that tags each user with one of four roles (Member, Yacht Owner, Service Provider, Admin). Role-based routing/components will show different portals. For instance, using React Navigation (mobile) or React Router (web), we'll enforce routes like `/member/*`, `/owner/*`, etc., that only allow the corresponding user role.

UI Design & Theme

The app's look-and-feel will match MBYC's luxury brand. MBYC markets "a premier membership" with "unlimited access to a fleet of luxury yachts" [3], so the UI should feel **sleek and upscale**. We'll use a pitch-black background with rich purple/blue gradient accents and subtle glow/blur effects on buttons and cards. Fonts will be clean and modern. In dark mode, text and icons use high contrast (white/silver) for readability. Tailwind CSS will handle responsive layouts: on desktop it shows multi-column yacht galleries, on mobile it's

a smooth scrollable list. Transitions (fade, slide, scale) will animate page changes and button hovers for a polished experience.

In keeping with the brand, each tab/screen will display large, inviting images (e.g. yachts on the water). The example (above) shows an elegant yacht scene that matches the club's vibe. All imagery in the app (e.g. yacht photos, event banners) will be high-quality. We'll use Tailwind's animation utilities (or custom CSS keyframes) to add **glow** on focused elements and smooth **swooping transitions** when dialogs or pages appear. This creates that "Apple-like" interactive feel.

Navigation Tabs

The app uses a **3-tab bottom navigation** (Airbnb style). Each tab's content adapts to the user's role, but primary definitions are:

- **Bookings (Free for Members):** The core booking interface. Members browse and reserve yachts (no charge) here. Yacht Owners manage their yacht listings and view reservations on this tab. Admins see an overview of all bookings.
- **Services (Paid):** A marketplace of paid amenities. Members can browse and book add-on services; Providers manage their service listings and bookings on this tab; Admins oversee service categories and payments.
- **Experiences/Events (Paid):** Club events and experiences (e.g. sunset cruises, parties). Members view upcoming events and register (paid tickets). Owners or providers may also be event hosts. Admins manage event creation and attendee lists.

Bookings Tab

In the **Bookings** tab, members search the yacht fleet and make reservations (free as per membership). The UI will present a gallery or map of yachts; each item shows the yacht name, size, description, image, and availability. Members filter by date and yacht size. We'll honor membership tier limits (e.g. a Gold member sees yachts up to 70ft only [8]). For example, if a Gold user taps *Bookings*, the app only shows yachts $\leq$70ft. Each listing has a "Book Now" button; tapping it opens a date picker and booking confirmation.

For **Yacht Owners**, the Bookings tab transforms into a dashboard: it lists all their yachts with current schedule blocks. Owners can click a yacht to see detailed reservations, approve or manage them, and mark availability. Data comes from Replit DB (`bookings:{bookingId}` records linking yacht IDs and dates).

Example Flow (Member): Member opens Bookings tab, selects dates, sees available boats (grey-out ones outside tier), taps *Reserve* on a 4-hour slot, confirms. The app writes a `booking:{id}` entry in DB. No payment is needed here (members pay via their dues), but an auth check ensures the user is a valid MBYC member.

Services Tab

The **Services** tab lists all paid amenities (e.g. chefs, massage, photography). Items are grouped by category (Hair, Catering, etc.). Each service provider has a card with photo, name, price per hour/session, and rating. Members can browse or search (e.g. "chefs") and tap a service to book. The booking flow collects date/time and initiates Stripe payment (see Payments below).

Providers see a portal here to **manage offerings**: they can add/edit their services (description, pricing, available hours) and view bookings from members. For example, a chef provider logs in and in the Services tab sees "My Services: Chef John's Catering" with an edit button and an upcoming bookings calendar.

Admin role can use this tab to **add or remove service categories** and review top providers. Admins also monitor payments coming through Stripe for these services.

Experiences/Events Tab

The **Experiences** tab shows MBYC events (paid parties, cruises). Members see a list of upcoming events with images, dates, and prices, and can tap to register. Registration requires authentication and Stripe payment. For instance, "Sunset Cocktail Cruise – Jan 15" with a "Buy Ticket" button.

Yacht Owners or **Service Providers** could see events where they're involved (e.g. a yacht owner hosting a cruise). However, in this MVP we focus on member experience: Owners simply see events as attendees.

Admin users manage all events here: they can create/edit events (venue, date, capacity, price) and view ticket sales. We will integrate Stripe so that event ticket purchases (and other services) are handled seamlessly. Event attendees' data (user ID, order) will be stored in Replit DB as `eventReg:{id}`.

User Roles & Features

- **MBYC Member:**
- **Yacht Booking:** Browse and reserve yachts free of charge (within membership tier limits [8]). View booking history and upcoming trips. Each booking uses a "token" system (as in MBYC terms) and replenishes per membership rules.
- **Service Booking:** Browse/pay for amenities: hair stylists, chefs, massage therapists, etc. Members make instant bookings via Stripe (secure card entry).
- **Event Registration:** View and pay for exclusive events and cruises. The app tracks event credits and ensures capacity limits.
- **Concierge Support:** Contact the MBYC concierge via in-app chat or call (Twilio integration). The site advertises a "direct line to concierge" [9], so our app provides a chat UI and a "Call Concierge" button using Twilio's Voice SDK [10].
- **Profile & Account:** View membership details (level, expiration, tokens). Manage payment methods (stored via Stripe Customer).

- **Example perks:** According to MBYC, membership includes **unlimited yacht usage (fuel and crew included)** and **private events** [11]. We'll reflect this by not charging members extra and by highlighting "Fuel & Crew Included" badges on yacht pages.

- **Yacht Owner:**

- **My Yachts Dashboard:** Add/edit yacht listings (name, size, photo, location). Set availability windows. View calendar of bookings made by members.
- **Booking Management:** Approve or cancel reservations if needed, communicate with members (via chat) about scheduling. For example, if two bookings conflict, the owner gets a notification to reschedule.

- **Analytics:** See summary statistics for each yacht: total hours booked, days available, and (if applicable) revenue sharing. Display charts (hours used per month).
- **Notifications:** Owners get alerts (push or email) when a new booking is made.
- **Service/Amenity Provider:**
- **Service Listings:** Register as a provider and list services (category, description, price, photos). Choose service types (Hair, Chef, Photography, Massage, Makeup, Spa, Catering, Nail, Training, etc.).
- **Booking Schedule:** View and manage bookings from members. Accept or decline requests (especially for one-on-one services like massage or training).
- **Profile Page:** Showcase experience/credentials and reviews. Manage availability calendar (working hours).
- **Payments:** Connect their payout account (managed by Admin) – members pay via Stripe, and providers see confirmed orders in their portal.
- **Owner Admin (MBYC Management):**
- **Fleet Management:** Add/remove yachts from the club's fleet. Assign yachts to Owner accounts.
- **Service/Events Management:** Add or remove service categories; onboard new Service Providers; create/edit club events and experiences.
- **User Management:** View all users and their roles; upgrade/downgrade membership tiers; suspend or reassign roles.
- **Dashboard / BI:** View aggregate statistics: total bookings per period, most-booked yachts, service revenue, event attendance. Provide charts for quick insights.
- **Payments Oversight:** Integrate Stripe on the backend: Admin configures Stripe API keys (in Replit secrets) and monitors transactions. For example, the app's backend will create Stripe payment intents for services/events, and Webhooks can notify Admin of successful payments. Admin can also trigger payouts to Providers if revenue-sharing is set up.

Each role's portal is part of the same app but gated by login. Upon login, the user is redirected to the appropriate home screen for their role, with the same 3-tab navigation bar (except some tabs may show different content or Admin-only options).

Database Schema (Replit DB)

Replit's Key-Value store acts like a giant JSON map [4]. We'll define keys using prefixes to simulate tables:

- `users:<userId>` – Object with `{ id, name, email, role, membershipLevel, ... }`.
- `yachts:<yachtId>` – Object with `{ id, ownerId, name, size, capacity, imageUrl, description, availability: {...} }`.
- `services:<serviceId>` – Object `{ id, providerId, name, type, price, description, imageUrl, availability }`.
- `bookings:<bookingId>` – Object `{ id, yachtId, userId, startTime, endTime, status }`. (Members' yacht bookings.)
- `serviceBookings:<bookingId>` – `{ id, serviceId, userId, datetime, status }`.

- `events:<eventId>` – `{ id, title, date, price, capacity, description, imageUrl }`.
- `eventRegistrations:<regId>` – `{ id, eventId, userId, timestamp }`.
- `tokens:<userId>` – e.g. an array or number tracking how many booking slots remain (for token-based scheduling).

We can also store lists: e.g. `user:${userId}:bookings` could be an array of booking IDs for that user. The Replit DB lets us store arrays and objects directly [12]. All data reads/writes happen via a Replit DB client (`import { db } from '@replit/database'`).

For simple lookup, we may also use prefix queries (keys starting with `yachts:`) to list all yachts. Replit DB supports prefix filtering (e.g. `db.list('yachts:')` to get all yacht keys) [13]. Our app logic will wrap these into services or data-access functions.

Payments Integration (Stripe)

All paid transactions (services and event tickets) use **Stripe** for security and compliance. We will use Stripe's React Native SDK on mobile and Stripe.js on web [14]. Key features:
- **Mobile:** Install Stripe React Native SDK, wrap the checkout screen in a `<StripeProvider>` and use `CardField` or PaymentSheet for collecting card details. The SDK provides pre-built UI components.
- **Web (PWA):** Use Stripe.js with Elements or the PaymentSheet. For example, a React component on the web can use `<Elements>` from `@stripe/react-stripe-js` and the `<CardElement>` for card input.
- **Flow:** When a member books a paid service or event, we call our backend (hosted on Replit Functions or a separate serverless function) to create a Stripe PaymentIntent for the total amount. We then confirm the payment in-app. On success, we update Replit DB (e.g. create a `serviceBookings` or `eventRegistrations` entry) and email receipts.
- **Charges & Subscriptions:** Currently, membership booking itself is "free" for members, but if the club ever offers subscriptions, we could use Stripe Billing. For now, we only charge per service/event.
- **Citations:** The official Stripe docs state: *"The Stripe React Native SDK allows you to build payments into your native Android and iOS apps"* [14], and similar components exist for web.

Chat & Concierge (Twilio)

To implement the **concierge call/chat**, we integrate Twilio:
- **Voice Calls:** Use Twilio Programmable Voice SDK for React Native. This SDK "allows you to add voice-over-IP (VoIP) calling into your React Native apps" [10]. We will provide a "Call Concierge" button which, when tapped, establishes a Twilio call to the club's concierge number. This uses Access Tokens for authentication (the backend will generate a Twilio capability token).
- **Chat:** Use Twilio's Programmable Chat or Conversations. The app will have a chat interface (like an in-app Messenger) where members can type messages and the concierge can respond. Twilio's JS Chat SDK can be used on both web and mobile (or we can embed a web chat widget).
- **Workflow:** Whenever a user needs help, they tap **Help/Concierge**. The screen shows two options: **Call** (launch Twilio call) or **Chat** (open chat window). On the backend, incoming chat messages are routed to the MBYC staff. We may also log chats in DB (`conversations:<convId>`).
- **Background:** MBYC's site advertises *"a private concierge service… allowing you to book trips effortlessly over the phone"* [9]. Our app replicates this digitally.

CI/CD Pipeline (GitHub Actions)

We will set up automated CI/CD with GitHub Actions:
1. **Continuous Integration (CI):** On each push or PR to the `main` branch, run tests and linting for both web and mobile code. (We can use Jest/React Testing Library for component tests, and ESLint/Tailwind CSS linting.)
2. **Deployment (CD):** After merging to `main`, trigger a deploy job. This job can build the web (production build) and call the Replit Deployments API (or use the `replit` CLI) to push updates. Similarly, we may publish updates to the mobile app (if using Expo, run `eas submit` to app stores). The Replit docs explain using GitHub integration and the CLI for deployment [15] [16]. Environment secrets (Replit API key, Stripe secret key, Twilio keys) are configured in GitHub.
3. **GitHub Actions configuration:** Example `.github/workflows/ci.yml` will include steps like `checkout`, `setup-node`, `npm install`, `npm run lint`, `npm test`. A separate `deploy.yml` can build (`npm run build`) and then use an action or curl to trigger deployment. See Replit's documentation for guidance on GitHub import and syncing (they provide quickstarts) [15]. We'll also use caching for node_modules and Nx's build cache to speed up CI.

Monorepo Structure

A suggested file layout (using Nx or Yarn workspaces) could be:

```
/apps
  /web      (React code for PWA)
  /mobile   (React Native code for Android/iOS)
/libs
  /ui       (shared UI components, styled with Tailwind)
  /data     (database-access utilities, auth helpers)
/functions (optional serverless functions for Stripe, Twilio backend)
/. github/workflows/  (CI/CD YAML files)
/.replit              (Replit run/deploy config)
/replit.nix           (Replit environment config)
/package.json
/tailwind.config.js   (theme and plugins)
/etc.
```

Each sub-app has its own entry and can import shared libs. We'll ensure the Nx/Turbo config links React Native (mobile) and React (web) properly. The `.replit` file will point the Run command to start the PWA (for preview) and the `replit.nix` lists system packages if needed.

Sample Replit AI Prompts

Below are example prompts that can be fed to the Replit AI assistant to generate code/components:
- **Prompt 1 (Bookings UI):**

```
"Create a React component `BookingList` in JavaScript using Tailwind CSS that displays a list of yachts. Each yacht card should show an image, name, size in feet, and a 'Reserve' button. Use a dark theme with purple accents and include a hover animation on the cards."
```

- **Prompt 2 (Service Booking Flow):**

```
"Write a React hook `useStripePayment` that initializes Stripe with a publishable key and provides a function to create a PaymentIntent by calling a Replit function endpoint. The hook should return a function `startPayment(amount)` that triggers Stripe Checkout or PaymentSheet."
```

- **Prompt 3 (Twilio Chat Screen):**

```
"Generate a React Native screen component `ConciergeChat` that connects to a Twilio Chat channel. It should list messages and have a TextInput at the bottom to send new messages. Style it with Tailwind classes (bg-gray-800, text-white, etc.)."
```

- **Prompt 4 (Replit DB Access):**

```
"Write a Node.js function `getAvailableYachts(memberLevel, startDate, endDate)` that reads all yachts from Replit DB (using @replit/database), filters by size according to the member's level (70ft for Gold, 80ft for Platinum, etc.), and checks for availability in the given date range. Return an array of available yacht objects."
```

- **Prompt 5 (User Authentication):**

```
"Create a React context `AuthContext` with functions `login(email, password)` and `logout()`. On login, verify credentials via a Replit backend function, then store a JWT in localStorage. Ensure it stores the user's role and redirects to '/member' or '/owner' accordingly."
```

These prompts guide Replit AI to generate boilerplate code for key parts of the app. Developers can adjust and refine the generated code as needed.

Each feature above will be further elaborated in detailed specs, but this plan outlines the full architecture and functionality required. With this roadmap, the MBYC app will deliver a polished, multi-role yacht club experience on web and mobile, powered entirely from Replit.

Sources: MBYC website for brand/membership details [3] [8] [11] [9]; React Native & PWA integration [6]; Replit platform docs [1] [2] [4]; Stripe and Twilio SDK docs [14] [10].

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15 Replit Docs
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