**Version 1.0: The Therap Java Fest Launch**

Our immediate goal is to launch a complete, functional, and impressive application for the Therap Java Fest. This version will showcase our core features and ensure 100% compliance with competition rules.

**Technical Stack for V1.0**

* **Frontend (The User Interface):** Built with **React.js and MUI (Material-UI)**, hosted on **Firebase Hosting**. This provides a free, professional domain like menux-app.web.app.
* **Backend (The "Brain"):** Our custom server-side logic in **Java & Spring Boot**, hosted on **Render** (using their free web services tier). This handles all complex tasks, including interactions with the AI.
* **Database (The "Memory"):** Our **PostgreSQL** database, hosted on **Render** (using their free database tier). This will store all restaurant, menu, and order data.
* **User System (The "Front Door"):** Secure user sign-up and login handled by **Firebase Authentication**.
* **AI Provider (The "Magic"):** The **Google Gemini API** for generating menu descriptions.

**Key Features for Diners (V1.0)**

* **View Menu:** Diners can scan a QR code to instantly view a restaurant's digital menu.
* **Place Order (Pro Feature):** At "Pro" restaurants, diners can build an order using a shopping cart and submit it directly to the kitchen from their phone.
* **Request Service (Pro Feature):** After ordering, diners can use a "Request Bill" button to notify staff they are ready for in-person payment.

**Key Features for Restaurant Owners (V1.0)**

* **Onboarding:** A simple, free sign-up process using **Firebase Authentication**.
* **Menu Management (Free Plan):** Owners can add, edit, delete, and manually re-order up to 25 menu items.
* **Menu Management (Pro Plan):** All the same features as the Free plan, but with unlimited menu items.
* **QR Code Generator:** A dedicated page where owners can create unique QR codes for each table (e.g., "Table 1," "Patio 5") and download them.
* **Live Orders Dashboard (Pro Feature):** A real-time screen where new orders appear instantly. Owners can view order details and mark them as "Complete."
* **AI Description Writer (Pro Feature):** Our primary showcase AI feature for the launch. A button in the menu editor that uses our **Java backend and the Gemini API** to automatically write professional, appetizing descriptions for menu items.

### Super Admin Dashboard (Included in V1.0)

To streamline our manual internal operations and eliminate the need for direct database access, we will also launch a lightweight Super Admin Dashboard as part of Version 1.0.

#### Key Features for Super Admins:

* **Secure Login with Admin Role Verification**: Admins log in via Firebase and are granted access via custom claims.
* **User Search**: Search restaurant owners by email or UID.
* **Upgrade to Pro**: One-click button to update user’s plan to Pro and set a 30-day subscription window.
* **Grant Free Trial**: Set user plan to Pro for 7 days with automatic expiry.
* **Revert to Free**: Downgrade accounts after expiry or on request.
* **Order Activity Viewer**: View live or recent order data across the platform (optional).
* **Basic Metrics**: Total users, Pro conversions, trial usage statistics.

This dashboard will significantly improve our admin efficiency, security, and professionalism, and is highly valuable during demo day or ongoing testing.

**Version 2.0: The Post-Launch Growth Roadmap**

Following the Therap Java Fest, we will rapidly enhance Menu.X with high-value AI and automation features to attract more users and drive business growth.

**Major New Features for V2.0**

* **The AI Menu Scanner (Instant Menu Upload):**
  + **Concept:** Restaurant owners will be able to upload a photo of their existing physical menu. Our **Java backend** will utilize the **Google Gemini API's multimodal (vision) capabilities** to perform OCR, automatically read the menu items, prices, and descriptions, and populate their digital menu.
  + **User Flow:** Owners will upload an image, and the frontend will display a "Review Your Scanned Items" screen where they can easily edit any AI-generated mistakes before saving the menu.
* **The AI Smart Sommelier:**
  + **Concept:** An AI chatbot for diners. Customers can ask for recommendations (e.g., "What's a good spicy dish?"), and the AI, powered by our **Java backend and the Google Gemini API**, will suggest items directly from the restaurant's menu, creating a more interactive and helpful ordering experience.
* **Automated Payments & Subscriptions:**
  + **Concept:** Integration with a real payment gateway (like Stripe, or a local Bangladeshi alternative) to allow restaurant owners to subscribe to the Pro plan and manage their payments automatically, eliminating the need for manual processing.
* **The AI Business Forecaster:**
  + **Concept:** An analytics feature on the owner's dashboard that uses historical sales data to provide simple, actionable insights. This could include predicting popular items for the day, identifying slow-moving inventory, or suggesting optimal pricing.
* **The Super Admin Dashboard:**
  + **Concept:** Building a full, professional user interface for our internal team to easily manage all users, process subscriptions, view platform-wide analytics, and efficiently handle customer support inquiries.