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# Coexist

FUNCTIONAL SPECIFICATION DOCUMENT

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# 1. Introduction

## 1.1 Background

Coexist is a social engagement platform that unites gamers, creators, and local businesses in a single ecosystem. The platform allows users to interact, host and attend events while earning rewards through different activities and gamified experiences. Coexist integrates virtual and real-world experiences, enabling users to leverage their engagement for tangible benefits.

## 1.2 Purpose of Document

This document outlines the functional specifications of the Coexist mobile application. It serves as a guide for the designer, development team, project manager, and stakeholders, ensuring that all features, logic, and workflows are clearly defined and aligned with the business objectives.

## 1.3 Target Audience

- **Primary Users:** Gamers, creatives, and young adults aged 16-35.
- **Secondary Users:** Event organizers and creators looking to expand their audience and monetize.

# 2. Project Scope

## 2.1 In-Scope Features:

- **Mobile Application:** Development for both iOS and Android platforms.
- **Event Management:** Users can create, discover, and participate in events.
- **Gamification:** Earning stacks and XP by playing mini-games and engaging in activities.
- **Rewards:** Earning and redeeming Stacks for various rewards.
- **Admin Control Panel:** Tools for managing users and events as well as to add discounts for products and services.

## 3. Mobile Application (User Interface)

### 3.1 Splash Screen

- **Design:** Displays the Coexist logo in a static format with no animation.
- **Timing:** The splash screen will only be visible for the duration of app initialization, which is expected to be as short as possible (ideally less than a second).

### 3.2 User Registration & Login

#### 3.2.1 Registration Flow:

At the start of the registration process, users will see a **Membership Confirmation** screen.

##### Existing Members:

- Users can submit their registered membership email.
- The users must enter an OTP code to verify their email address.
- The system verifies the email against the Coexist membership database.
- If verified, the user's existing membership information will auto-fill the registration form with available information.
- Users can review and confirm the information to complete the sign-up process on the application.
- Stacks earned for completing processes.

##### Non-Members:

Users who are not members can skip the membership confirmation step and proceed with the standard guest registration process.

##### 1. User Inputs the following details:

- First & Last Name
- Username / Nickname / GamerTag
- Email Address
- Password (minimum 8 characters, including one uppercase letter, one number, and one symbol)
- Confirm Password

##### 2. Accepts terms and conditions.

##### 3. A verification link is sent to the registered email.

#### Validations:

- Email format validation.
- Password complexity check.
- Duplicate email prevention.

#### Error Handling:

- Display appropriate error messages for invalid inputs or duplicate emails.
- For network issues, prompt the user to retry later.

#### 3.2.2 Sign-In Flow:

1. User selects **“Sign-In”** from the main screen.
2. Available login methods:
  - **Email Sign-In:** User enters their registered email and password.
  - **Google Sign-In:** User selects the Google option, and OAuth handles the authentication.
  - **Apple Sign-In:** User selects the Apple option for sign-in on iOS devices.
3. Upon successful Sign-In, the user earned **Stacks** for completing the processes and redirected to the Home Screen

#### Validations and Security Considerations:

- **OAuth Tokens:** Securely stored and managed through Firebase Authentication.
- **Apple Sign-In Requirements:** Follows Apple’s guidelines for user privacy and secure data handling.
- **Fallback Mechanism:** If social login fails, users can use email-based recovery to regain access.

#### Forgot Password Workflow:

1. User clicks “Forgot Password.”
2. An OTP code is sent to the registered email to set a new password.
3. The user sets a new password following security protocols.



## 3.3 Profile Management

### 3.3.1 Fields

- Profile Picture (upload and crop functionality).
- First & Last Name
- Username (unique identifier).
- Email (non-editable after registration).
- Membership Status (Digital, Pro, Elite, Ultimate).
- Stacks Balance (Stacks earned for completing processes).
- Profile Level

### 3.3.2 Features

- **Edit Profile:** Users can update their picture, name, and password.
- **View Achievements:** Display earned Stacks, XP and Level.
- **Delete Account:** Users can request account deletion, with a confirmation prompt warning of permanent data loss, followed by password or biometric verification.

## 3.4 Home Screen

### 3.4.1 Overview

The Home Screen serves as the central hub for users, displaying featured events, popular events, popular games, and featured rewards.

### 3.4.2 Sections

- **Featured Events:** Highlight the events created by the admin.
- **Popular Events:** Trending events based on user preferences and engagement.
- **Popular Games:** Showcase popular games.
- **Popular Rewards:** Showcase popular rewards.

## 3.5 Event Management

### 3.5.1 Overview

The Event Management module allows users to host, discover, and participate in both online and physical events. It includes detailed workflows for event creation and booking tracking.

### 3.5.2 Event Creation

The user initiates the event creation process by selecting "Create Event" from either the profile dashboard or the Events screen. Upon starting, the user is prompted to specify whether the event is private.

- Stacks earned for completing processes.

#### For Private Events:

- If the event is marked as private, the user will be redirected to the existing Coexist private event creation Google Form.
- In this form, the user can submit the required details for the event.

**Note:** The application will not track or monitor data related to private events.

#### For Non-Private Events:

If the event is not private, the user can proceed to submit the necessary information directly within the application, starting with selecting the event type: in-person, online, or hybrid. Anyone, including guests, can create events but only members can monetize with events.

- **Category** (Select, Other Category > Text Input)
- **Event Title** (Text Field, Required).
- **Event Image** (PNG/JPG, Min Dimensions, Max Data Size).
- **Reoccurrence** (Dropdown).
- **Date** (Calendar, Required).
- **Start/End Time** (Time Picker, Required).
- **Location** (Dropdown, Default: NYC Coexist Game house).
- **Monetization** (Yes/No, Required).
- **Pricing:** (If Monetization is on – In Stacks)
- **Additional Options:**
  - Cover guest entry fee (Multiple Choice).
  - Digital flyer/social media posting request (Yes/No, with warning if No).
  - Live performances (Yes/No, with a note for additional charges).
- Stacks earned for completing processes.

#### Workflow:

1. Member submits the event via the app and earned stacks for completing the process.
2. Admin receives an email notification of the pending event.

3. Admin approves or rejects the event. If approved, event details are published within the app.
4. Member receives an email and in-app notification of the approval/rejection status.

#### Validations:

- **Date Validations:**
  - The selected date is at least 24 hours in the future.
  - The event is scheduled on a day when the Coexist Game House is open.
  - The event time falls within the Game House's operating hours.
  - There is no conflicting event scheduled at the same time and location.
- **Compulsory Fields:** Check for the compulsory fields if filled correctly.

### 3.5.3 Event Discovery

#### Features:

- **Filters:** Users can filter events by following options:
  1. **Date:** Today, Tomorrow, This Weekend, Choose a Date.
  2. **Categories:** Workshops, Jam Sessions, Podcasts, Watch Parties, Game Jams, Other Categories.  
The admin will be able to create categories that may be considered if frequently requested enough.
  3. **Location:** Select city location option (Dropdown).
  4. **Type:** In-person, Online, Hybrid.
  5. **Pricing:** Paid, Free.
  6. **Sort-By:** Relevance, Date. Frequency should be asked when in creation mode and sort by. i.e. daily, weekly, biweekly, monthly, annually, etc.
- **Event Cards:** Display event thumbnail, title, date, time, and location.
- **Save Events:** Users can save events through the bookmark option to view them later.
- **Remaining Tickets count**

#### Workflow:

1. Users access the event discovery page.
2. They apply filters or search by keywords.
3. Tapping on an event card takes them to the event details page.
4. Users can view the event host and details including required stacks to book an event.

### 3.5.4 Event Booking

#### Payment Options:

- Users can purchase tickets using:
  - Stacks (virtual currency).
  - Credit card, PayPal, payments should be considered.

#### Booking Confirmation:

- In-app notifications confirm the booking status.
- Users can view their booked events in a dedicated “Booked Events” section.

#### Booked Events

- Users can view the details of upcoming and past booked events.
- There is an option for the users to cancel upcoming event bookings if they want. This is ONLY for member events, NOT for private events. Cancellations, do not result in refunds, but rather credits for future use. Contracts must note these considerations as they are in invoices and must be agreed upon by guests in order to solidify booking.

## 3.6 Rewards & Redemption

The rewards section allows users to redeem exclusive offers and discounts from local brands using their earned stacks. Rewards are categorized into three sections for easy navigation.

### 3.6.1 What's in Today

- Showcases limited-time offers and deals available for the day.
- Encourages users to take advantage of timely discounts.

### 3.6.2 Popular Member Benefits Nearby

- Displays offers from nearby locations based on the user's current location.
- Users can explore rewards tailored to local outlets and services.

### 3.6.3 Hottest Rewards

- Highlights trending and highly sought-after offers.
- Users can browse top deals across various categories.

### 3.6.4 Redeeming Rewards

- When a user taps on a reward to redeem, the app opens a QR code scanner.
- Users scan the QR code at the brand's shop or outlet to validate and redeem the offer.
- The system deducts the required stacks from the user's balance once the reward is claimed.
- Most importantly, the user receives Coexist stacks for redeeming rewards via QR code.

This feature ensures a seamless experience, encouraging users to earn and spend stacks on valuable offers in their area.

## 3.7 Gamification

### 3.7.1 Overview

Users can explore games and earn **XP** and **Stacks** by accessing them through external platforms. Games are categorized for easy navigation and rewards are based on specific completion criteria.

### 3.7.2. Key Features

- **Featured Game of the Week:** Highlights a game offering bonus XP or rewards, with a tap redirecting to its details.
- **Game Cards:** Display the game title, cover image, XP, and Stack rewards.
- **Categories:** Games are listed under the Popular, My Games, and Indie Games sections.
- **Play Button:** Redirects users to external platforms (Play Store, App Store, or game engines).
- **Cool-down Timer:** A one-hour cool-down period begins once a user taps on a game to prevent repeated reward claims.

## 3.8 Bottom Navigation

### 3.8.1 Overview

The Bottom Navigation provides a streamlined way for users to access key areas of the app, making it easy to switch between sections without unnecessary navigation.

### 3.8.2 Tabs and Functionality

- **Home:** The main feed displays featured events, popular events, popular games, and featured rewards.
- **Events:** A dedicated space to discover, create, filter, and manage events.

- **QR Code Scan:** Access to personal QR code and scan option for the other QR codes to redeem rewards.
- **Game Play:** Access to the main games section to navigate between all the game categories and play.
- **Rewards:** Dedicated rewards section to view all the popular and nearby rewards.

## 3.9 Side Menu

The sidebar provides quick access to essential features and settings within the app, enhancing user convenience and customization options:

### 3.9.1 Memberships

- Displays the user's current membership level.
- Offers four plans/levels:
  - **Digital (Newbie Non-member):** Basic access for new users.
  - **Pro:** Access to additional features and minor perks.
  - **Elite:** Includes premium rewards and exclusive offers.
  - **Ultimate:** Highest membership level with maximum perks and bonuses.
  - Each tier includes the benefits of the tier before it. \*helps to define "minor perks".
- Users can view membership benefits and upgrade, downgrade, pause or cancel plan as desire. Certain tenure restrictions may be placed on activity based on membership. i.e. For some benefits, users need to be a member for 30 days for eligibility.

### 3.9.2 Buy Stacks

- Enables users to purchase stacks/coins through in-app purchases.
- Multiple stack bundles are available for users to select and purchase.

### 3.9.3 Saved

- Contains all saved events and rewards marked by the user.
- Automatically removes expired items from the saved list.

### 3.9.4 Security

- Offers customization of security preferences, including:
  - **Remember Me:** Toggle to enable automatic sign-in.
  - **Face ID:** Toggle to enable face recognition for login.
  - **Biometric ID:** Toggle to enable fingerprint authentication.

- Users can update their password and manage security settings easily.

### 3.9.5 Languages

- Allows users to select their preferred app language from a list of available options.
- Changes take effect immediately across the app for a localized experience.

### 3.9.6 Help Center

- Provides access to various support options, including:
  - **Website Link:** Directs users to the official support website.
  - **Customer Support Contact:** Includes options like email or phone for assistance.
  - **Social Media Links:** Connect users to official pages on Facebook, Twitter, and Instagram for updates and support.

### 3.9.7 Logout

- A simple button allowing users to securely log out of their accounts.

## 3.10 Stacks (Virtual Currency)

### 3.10.1 Overview

Stacks are the in-app virtual currency that users earn and spend as part of the gamification and rewards system. Users can use Stacks for event tickets, and real-world benefits such as discounts at partner locations. Event creators also earn in stacks but the amount will be more comparative to the user activities.

### 3.10.2 Earning Stacks

#### Mechanisms:

- **Event Attendance:** Users earn Stacks for attending paid or premium events.
- **Gamification:** Engaging users through interactive games and rewarding them with XP and Stacks for playing games.
- **Event Creators:** Earn rewards in stacks, with higher earnings compared to regular user activities based on their contributions.

**Logic:** Real-time Earning, Stacks are added to the user's wallet immediately after attending an event and gameplay completion.

### 3.10.3 Spending Stacks

#### Available Purchases:

- **Event Tickets:** Use stacks to purchase tickets for upcoming events.
- **Rewards Redemption:** Spend stacks to claim special offers and deals from the rewards catalog.
- **Partner Discounts:** Redeem stacks for exclusive discounts at partnered stores.

## 3.11 Notifications

### 3.11.1 Overview

Notifications serve to keep users informed about upcoming events, achievements, rewards, and social interactions. Push notifications, emails, and in-app alerts are used to maximize engagement.

### 3.11.2 Types of Notifications

- **Event Reminders:** Notifications are sent 24 hours and 1 hour before an event begins.
- **Achievement & Reward Notifications:** Real-time updates when a user unlocks an achievement or earns a reward.

#### Notification Management:

- **Customizable Preferences:** Users can customize the types of notifications they receive.

## 3.12 Maps Integration

### 3.12.1 Overview

Maps integration enhances the event discovery experience by showing physical event locations and nearby partner businesses. This feature also helps users navigate to event venues and discover events that are close to their location.

### 3.12.2 Features

- **Event Locations:** Each physical event includes a map to the venue using Google Maps API.
- **Nearby Partner Locations:** Displays partner businesses nearby where users can redeem Stacks for discounts. This will have global access for all partners located anywhere in the world.



### 3.12.3 User Workflow

#### Event Creation & Discovery:

1. Event organizers input event details, including the physical address.
2. The app retrieves the address and geocodes it using the Google Maps API.
3. Users browse events through the app's event discovery section.
4. For each in-person event, a map preview is displayed, showing the venue location with a clickable marker.

#### Nearby Businesses & Rewards Redemption:

1. The app queries the database for partner businesses near the user's location.
2. Using Google Maps Places API, nearby partner businesses are displayed as additional markers, indicating where users can redeem Stacks for discounts.
3. At partner locations, users access their Stacks balance in the app and redeem discounts by scanning the QR code provided by the partner.

## 3.13 Digital Wallet

### 3.13.1 Overview

The Digital Wallet allows users to manage their Stack balance, track earnings, and redeem rewards seamlessly within the app. Users can earn Stacks from event participation and game activities to use them for rewards & discounts within the ecosystem.

### 3.13.2 Key Features

- **View Balance:** Displays the total Stacks balance.
- **Transaction History:** Users can view detailed logs of earned and spent Stacks.
- **Earning Stacks:** Tracks sources such as events and games.
- **Spending Stacks:** Allows redemption for event tickets, rewards, and partner discounts.

### 3.13.3 Workflow

1. User accesses the Digital Wallet from the side menu.
2. The wallet dashboard displays current balance, earnings, and recent transactions.
3. Users can navigate to redeem Stacks for event tickets, content, or discounts.
4. Admins can review user transactions and adjust balances if needed.

## 4. Web Administrator (Super Admin Interface)

### 4.1 Overview

The Admin Panel is the central management interface for administrator to oversee and control various aspects of the app. It is designed to provide full control over user management, event management, and system settings. The Admin Panel ensures a smooth user experience by facilitating real-time management of critical app functionalities.

### 4.2 Key Features

#### 4.2.1 Admin Authentication

**Sign-In:**

- Admins must sign in using a secure authentication process (Email & Password).
- Once authenticated, admins are directed to the Admin Dashboard.

#### 4.2.2 Admin Dashboard

The **Admin Dashboard** serves as a reporting section, offering insights into key metrics such as.

- Active users (daily/monthly)
- User engagement statistics
- Events statistics (e.g., upcoming, in-process, and past events count)
- Pending actions (e.g., event approval requests)

#### 4.2.3 User Management

List of registered users with basic details (Profile, Name, Username, Email, Stats, and others). Admin can filter users based on status (Active, Not Active).

- **User Search & Filters:**
  - Ability to search users by name, email, or other attributes.
  - Filters for status and other attributes.
- **User Details:**
  - View detailed user profiles, including account status.
  - Admins can deactivate user accounts as needed.

## 4.2.4 Event Management

### Event Dashboard

- **Event List:**
  - Admins can view a comprehensive list of all events with event details in the event dashboard.
- **Filter Options:** Admin can apply filters to search for specific events based on:
  - Event Type (In-person, Online, Hybrid)
  - Event Category
  - Event Date
  - Event Status
  - Monetization (Paid, Free)
  - Location

### Event Approval/Rejection Process

- **Approval/Rejection of User-Created Events:**
  - Admin can review the details of the user-created events before publishing.
  - If an event is approved, it will be added to the events section and visible to all users.
  - If rejected, the user will be notified accordingly.
- **Event Status:** Admin can monitor and update the status of events (Pending, Approved, or Rejected) through the event management dashboard.

## 4.2.5 Platform/Featured Events

### Featured Events Section

- **View Featured Events:** All events created by the admin will be displayed in the **Featured Events** section of the admin panel.
- **Event Details:**
  - Admin can view the following details for each event:
    - Event Title
    - Event Image
    - Event Type
    - Category
    - Date & Time
    - Location
    - Game House Section
    - Reoccurrence (if applicable)
    - Ticket Price (If applicable – In Stacks)

- **Manage Events:** Admin can edit, update, or delete events in the **Featured Events** section.

## Featured Event Creation and Management

Admin can create featured in-person, online, or hybrid events.

- **Event Creation Process:** Admin initiate the event creation process by selecting **Create Event** from the **Featured Events** section in the admin panel.
- **Required Fields:** The following fields are required for creating a featured event.
  - **Event Type:** Select from in-person, online, or hybrid.
  - **Category:** Dropdown or custom option to select event category (e.g., Workshops, Jam Sessions, Podcasts, Other (Text Input)).
  - **Event Title:** Text input field for the title of the event (Required).
  - **Event Image:** Image upload option (PNG/JPG, minimum dimensions, maximum file size).
  - **Reoccurrence:** Dropdown for selecting recurring events (e.g., daily, weekly, monthly).
  - **Date:** Calendar input to specify the event date (Required).
  - **Start/End Time:** Time picker for event start and end times (Required).
  - **Location:** Dropdown selection for in-person or hybrid events.
  - **Game House Section:** Dropdown selection for in-person or hybrid events.
  - **Guest Count:** Dropdown selection for in-person and hybrid event seats.
  - **Platform Link:** Text Input for online events.
  - **Pricing:**
    - **Free:** No stacks required to join/attend.
    - **Paid:** Mention stacks amount to join/attend.

Once a featured event is created by the admin it will show to all the users in the featured events section on the application.

### 4.2.6 Events Notifications & Communication

- **Admin Notifications:**
  - Admin receive notifications alerts when new events are submitted for approval.
- **User Notifications:**
  - Once an event is approved and published, users will be notified of the new event via in-app notifications.
  - Event update (e.g., date & time changes) notifications to the users who are attending or registered for the event.

#### 4.2.7 Coexist Game House Locations & Sections Management

Admin can manage game house locations, including adding, editing, or deleting locations, and managing associated sections like game zones or lounges. Each location's capacity and availability can be updated, and sections can be assigned to specific events.

- **Location List:**
  - Displays all locations with **Name, Address, Capacity, Availability**.
  - **Actions:** Edit, Delete, View Details.
- **Add/Edit Location:**
  - Admin can add/edit locations with **Name, Address, Capacity, and Availability Status**.
- **Delete Location:**
  - Locations can be deleted (warns if in use).
- **Game House Sections:**
  - Locations may have multiple sections (e.g., Game Zones, Lounges, etc.).
  - **Section Details:** Name, Capacity, Description.
  - **Actions:** Add Section, Edit Section, Delete Section.
- **Add/Edit Section:**
  - Admins can create/edit sections for each location, defining the **Section Name, Capacity, and Description**.
- **Delete Section:**
  - Sections can be deleted, with a warning if events are assigned to that section.

#### 4.2.8 Manage Guests Count

Admin can set the available guest count options, allowing users to select the number of guests they wish to register for. This section ensures that the correct guest limits are available for event bookings.

- **Read:** Admin can view the guest count options.
- **Create:** Admin can set the available guest count options, defining the number of spots users can select when creating an event.
- **Update:** Admin can update the guest count options.
- **Delete:** Admin can remove guest count options.

### 4.2.9 Game Management

The Games Management Panel allows admins to oversee all game integrations, manage available game listings, and monitor engagement metrics.

- **Key Features:**
  - **Game Listings:** Admins can add, edit, or remove games available for Stacks rewards.
  - **XP & Stacks Management:** Set XP and Stacks rewards for each game.
  - **User Engagement Reports:** Monitor playtime, user activity, and reward distribution.
- **Workflow:**
  1. Admins log into the Admin Panel and navigate to the Games Management section.
  2. They can add new games, edit existing game details, or remove outdated titles.
  3. XP and Stacks rewards are configured based on game engagement.
  4. Reports provide insights on user participation and reward distribution.

### 4.2.11 Communication & Support

- **Notifications Management:**
  - Send system-wide notifications to users (e.g., maintenance alerts, policy updates).
- **User Queries:**
  - Admins can review and respond to user-submitted queries.

### 4.2.12 Sign Out

Admin can log out of the panel to securely end their session and prevent unauthorized access.

## 5. Coexist Vendor Panel

### 5.1 Overview

The Coexist Vendor Panel is a web-based interface that allows local vendors to register, manage their products, and offer rewards and discounts to Coexist users. The panel integrates with the Coexist Admin Panel and Rewards System to provide seamless product listing, discount management, and QR-based redemption functionality.

### 5.2 Vendor Registration & Approval Process

#### 5.2.1 Vendor Registration

- Vendors will register through the Coexist main website via a dedicated registration page.
- Registration requires the following details (based on [Vendor Registration Form](#)):
  - **Business Name** (Required)
  - **Business Type** (Dropdown: Restaurant, Gaming, Retail, etc.)
  - **Vendor Name (Primary Contact)** (Required)
  - **Email Address** (Required, Unique)
  - **Phone Number** (Required)
  - **Business Address** (Required)
  - **Website/Social Media Links** (Optional)
  - **Business Logo & Images** (Upload, Optional)
  - **Description/About Vendor** (Text Field)

#### 5.2.2 Vendor Approval Process

- Once a vendor submits the registration form, an approval request is sent to the Admin Panel.
- Admins will review the submitted details and approve/reject the request.
- If approved:
  - The vendor receives a confirmation email with login credentials for the Vendor Panel.
  - The vendor can now access the Vendor Panel and manage products.
- If rejected:
  - The vendor receives an email notification stating the reason for rejection.
  - They can update their application and resubmit for approval.

## 5.3 Vendor Dashboard Features

After approval, vendors can log into the Vendor Panel to manage their products and track performance. The Vendor Dashboard will include the following.

### 5.3.1 Dashboard Overview

- Displays key statistics:
  - **Total Products Added**
  - **Total Discounts Redeemed**
  - **Pending/Approved Discounts**
  - **Recent User Redemptions**

### 5.3.2 Product Management

Vendors can perform CRUD operations (Create, Read, Update, Delete) on their products.

#### Add a Product

Vendors can list new products under the Rewards system. Required fields include.

- **Vendor Name** (*Auto-filled from vendor profile*)
- **Product Title** (*Required, e.g., "20% Off on All Burgers"*)
- **Product Image** (*Upload PNG/JPG, min dimensions required*)
- **Required Stacks for Discount** (*Numeric input, e.g., 500 Stacks = 20% Off*)
- **Select Discount Percentage** (*Dropdown: 10%, 20%, 30%, etc.*)
- **About Product** (*Short description of the offer and terms*)

After submission, the product is immediately **published in the Rewards section** for users to view.

#### Edit/Delete a Product

- Vendors can modify existing product details (title, discount percentage, image, etc.).
- Vendors can remove products that are no longer available.
- Users will no longer see expired/deleted products in the Rewards section.

### 5.3.3 QR Code Generation for Redemption

- Once a product is added, a unique QR code is automatically generated for each product.
- Vendors can access and display the QR code at their store location for user redemption.
- Users will scan this QR code in-store to claim the discount.



- QR codes are unique per product and linked to the required Stacks balance for redemption.

### 5.3.4 Discount Redemption Process

#### User Redemption Workflow:

1. The user selects a discount reward from the Rewards section in the Coexist app.
2. They visit the vendor's store and tap "Order Now."
3. The app opens a QR scanner to scan the vendor's QR code.
4. If the user has enough Stacks, the app confirms successful redemption.
5. Stacks are deducted from the user's wallet.
6. Vendor receives a confirmation of the redemption on their panel.

### 5.3.5 Vendor Profile Management

Vendors can update their:

- **Business details** (phone, email, website).
- **Business logo & images.**
- **Password & account security settings.**

## 6. Vendor Management – Admin Panel Impact & Features

### 6.1 Overview

With the introduction of the Vendor Panel, the Admin Panel will be updated to include a Vendor Management module. This module will allow admins to manage vendor registrations, approve/reject vendor applications, monitor vendor products, and oversee the rewards redemption process.

Additionally, admins will have enhanced control over the Rewards section, enabling them to modify "**What's in Today**" and "**Hottest/Popular**" rewards, while the other two reward sections—"**Popular Member Benefits Nearby**" and "**Instant Redeem**"—will dynamically update based on users' membership level and available stacks in an individual user interface.

### 6.2 Vendor Management – Admin Controls & Features

#### 6.2.1 Vendor Registration Management

- Admins will have a dedicated **Vendor Applications Panel** displaying all pending, approved, and rejected vendor applications.
- Vendors must submit registration details via the **Coexist website**, and their application will appear in the Admin Panel for review.
- **Admin Actions:**
  - **Approve a Vendor:** Grants access to the Vendor Panel, enabling them to list products and offer discounts.
  - **Reject a Vendor:** The vendor receives a rejection email with the reason.
  - **Request Additional Information:** Admins can send a request to the vendor for missing or incorrect details.

#### 6.2.2 Vendor Account Management

Once approved, vendors will have profile data stored in the Admin Panel, including:

- **Business Name**
- **Vendor Name (Primary Contact)**
- **Business Type (Restaurant, Gaming, Retail, etc.)**
- **Email & Phone Number**
- **Business Location(s)**
- **Active/Inactive Status**

- Admins can edit vendor details, deactivate vendor accounts, or suspend listings if needed.

### 6.2.3 Vendor Product & Reward Monitoring

Once a vendor is approved, they can list products in the Rewards section, and the Admin Panel will include a Product Management Dashboard for monitoring vendor-created rewards.

- **Admin Controls for Vendor Products:**
  - **View All Vendor-Listed Products:** Admins can see the full list of discounted products, reward details, and vendor-assigned stack values.
  - **Approve, Reject, or Modify Product Listings:** Products added by vendors will be visible immediately without admin approval, but admins have the authority to modify or remove any product if necessary.
  - **Monitor Redemption Activity:** Admins can track how many times a reward has been redeemed via QR codes.
  - **Reports will show:**
    - Which users have redeemed which rewards
    - Total number of redemptions per vendor

### 6.2.4 Vendor QR Code Redemption Tracking

- Each vendor-created product will generate a unique **QR code** for redemption.
- Admins can track redemption analytics, including:
  - **Most Redeemed Products**
  - **Redemption Volume by Vendor**
  - **Fraud Prevention Checks** (Multiple Scans by the Same User, Stacks Deduction Logs, etc.)

## 6.3 Rewards Management – Admin Controls

With the new Vendor Panel Integration, the Rewards System will be updated as follows:

### 6.3.1 Admin-Managed Rewards Sections

- **"What's in Today" & "Hottest/Popular" Rewards:**
  - Admins can manually select and modify which vendor offers appear in these sections.
  - Admins have the ability to feature limited-time deals in **"What's in Today."**
  - Admins can adjust the ranking of rewards in the **"Hottest/Popular"** section based on trends.

### 6.3.2 Auto-Managed Rewards Sections (Membership & Stacks-Based Rewards)

- **"Popular Member Benefits Nearby" & "Instant Redeem"**
  - These sections will dynamically adjust based on the user's **membership level and stacks balance**.
  - Users will only see rewards available within their tier and stack limits.
  - **Admins cannot manually modify these sections**, ensuring automated personalization.

## 6.4 Reporting & Analytics for Vendor & Rewards Management

The Admin Panel will include advanced **reporting features** for tracking vendor activity, user redemptions, and reward performance.

### 6.4.1 Vendor Activity Reports

- Number of new vendor registrations per month
- List of active vs. inactive vendors
- Top-performing vendors based on reward redemptions

### 6.4.2 Rewards Analytics

- Most redeemed rewards by category (**Food, Gaming, Retail, etc.**)
- Stack spending trends (**how users are utilizing their earned Stacks**)
- Performance of **Admin-Managed Rewards vs. Vendor-Listed Rewards**

## 6.5 Conclusion

The addition of the Vendor Panel significantly enhances the Coexist Admin Panel by introducing Vendor Management, QR Code Redemption Tracking, and Reward Moderation Controls.

- Admins gain full control over vendor registrations, product approvals, and redemption analytics.
- Rewards are now divided into manually managed and auto-managed sections to maintain user-personalized benefits.
- The system ensures fairness in stack spending while preventing fraudulent redemptions.

## 5. Technical Stack

### Frontend

- **Unity (C#):** Cross-platform development for both iOS and Android apps.

### Backend

- **Node.js:** Server-side JavaScript environment for handling business logic and API requests.
- **Firebase:** Real-time database for storing user data, event information, and transactions.

### Database

- **Firebase Real-time Database / Firestore:** For real-time data synchronization.
- **MySQL/PostgreSQL:** For relational database requirements.
- **MongoDB:** For NoSQL database requirements.

### Hosting

- **AWS/GCP:** Scalable cloud infrastructure for hosting services and data storage.

### Payment

- **In-app Purchase:** Users can pay through Google and Apple Pay to buy stacks and use them for redemption.