

## 1. Dashboard Overview

- **User Stats:** Total users, active users, and daily sign-ups.
- **Quiz Stats:** Total quizzes created, ongoing quizzes, completion rate, and leaderboard highlights.
- **Engagement Metrics:** Daily and monthly active users, most popular quizzes, average time spent on quizzes.
- **Financial Summary:** Total revenue, pending withdrawals, recent transactions.
- **Notifications and Alerts:** System-wide announcements or urgent notifications (e.g., server downtime alerts).

## 2. User Management

- **User Profiles:** View detailed profiles, including username, email, quiz history, and rewards.
- **User Activity Logs:** Track user interactions like login times, quizzes attempted, scores, and transaction history.
- **User Roles:** Assign roles (e.g., admin, moderator, player) with permissions for restricted actions.
- **Account Status:** Enable/disable user accounts, reset passwords, and resolve account-related issues.
- **Rewards and Badges:** Manage user rewards, badges, and points (e.g., adding/removing points, granting badges).
- **Reports and Bans:** Handle user reports, warnings, and bans for inappropriate behavior or cheating.

## 3. Quiz and Question Management

- **Quiz Creation:** Create quizzes manually or through automated generation (using the ChatGPT API for dynamic question generation). Set categories, difficulty, number of questions, and time limits.
- **Question Bank:** Access a repository of questions across various categories. Manually add/edit questions or delete outdated ones.
- **AI-Generated Questions:** Trigger the generation of questions using the ChatGPT API, set up rules for question categorization, and validate generated questions.
- **Quiz Scheduling:** Set start and end times for time-bound quizzes, recurring events, or one-time challenges.
- **Multiplayer and Contest Management:** Configure contest-specific rules, monitor contest participation, and manage live events or multiplayer quizzes.
- **Quiz Moderation:** Review flagged content, edit or delete inappropriate questions, and monitor question quality.

## 4. Leaderboard and Scoring

- **Global Leaderboard:** View top-performing users globally or filter by categories and timeframes.
- **Category-Specific Leaderboards:** Display leaderboards for specific quiz categories to highlight top users in specialized areas.
- **User Rankings:** Calculate and manage user rankings based on scores, participation, or contest wins.
- **Reward Distribution:** Automate or manually distribute rewards (points, coins, badges) to leaderboard winners and contest participants.

## 5. Financial and Transaction Management

- **In-App Purchases:** Monitor purchases of in-app currency (coins, subscriptions) and manage pricing and discounts.
- **Wallet Balance:** Track and update user wallet balances for rewards, withdrawals, or currency exchanges.
- **Withdrawal Management:** Approve or decline user withdrawal requests, view transaction history, and manage payout schedules.
- **Revenue Analytics:** Track revenue sources (e.g., ads, subscriptions, purchases), generate reports, and analyze trends.
- **Promo Codes and Discounts:** Manage promotional codes, set discount rules, and monitor redemption rates.

## 6. Content Management System (CMS)

- **Announcements:** Send in-app announcements to users for updates, new quiz releases, or feature highlights.
- **App Content Updates:** Manage app content like FAQs, instructions, game rules, and help sections.
- **Advertisement Management:** Schedule and manage ads displayed in the app, track ad performance, and adjust placements based on user engagement.
- **Push Notifications:** Schedule notifications for upcoming quizzes, contest reminders, or leaderboard updates.

## 7. Analytics and Reporting

- **User Analytics:** Generate reports on user growth, engagement, retention rates, and cohort analysis.
- **Quiz Performance:** Track quiz participation rates, average completion times, and question difficulty analysis.
- **Revenue Reports:** Detailed reports on revenue by source, monthly earnings, payout expenses, and financial growth trends.
- **Real-Time Monitoring:** Track real-time user activity, server load, and live quiz participation.
- **Custom Reports:** Enable admins to create custom reports by selecting specific metrics and date ranges.

## 8. Settings and Configuration

- **User Permissions:** Configure role-based access control to limit features based on user roles (admin, moderator, etc.).
- **App Configurations:** Update app settings like quiz timer limits, question limits, and minimum score requirements.
- **Security Settings:** Manage security protocols like two-factor authentication, password policies, and account lockouts.
- **Data Retention and Privacy Settings:** Configure data retention policies, anonymization options, and data export for compliance.

## 9. Audit Logs and Compliance

- **Activity Logs:** Record all admin and moderator actions within the system for transparency.
- **User Data Access Logs:** Track access to sensitive user data and monitor for unauthorized access attempts.
- **System Health and Uptime:** Monitor server performance, uptime statistics, and automatic alerts for downtime.

- **Data Compliance:** Manage data privacy requests, ensure GDPR or CCPA compliance, and allow users to request data deletion.

## 10. Support and Feedback

- **User Support:** Track and respond to user support tickets, view common issues, and improve response times.
- **Feedback Collection:** Gather user feedback on quizzes, app experience, and feature requests.
- **Bug Tracking:** Record and manage bug reports submitted by users or detected by monitoring tools.
- **FAQ and Knowledge Base:** Update FAQs based on user queries and provide a searchable knowledge base within the admin panel.

There are **54 APIs** in total based on the breakdown for the quiz application:

1. **User Authentication and Profile Management** - 8 APIs
2. **Quiz and Question Management** - 7 APIs
3. **Leaderboard and Scoring** - 4 APIs
4. **Contest and Multiplayer Mode** - 5 APIs
5. **Wallet, Transactions, and Rewards** - 5 APIs
6. **Notification and Chat Management** - 4 APIs
7. **Premium Features and Subscription Management** - 3 APIs
8. **Social and Referral System** - 3 APIs
9. **Settings, Preferences, and Security** - 3 APIs
10. **FAQ and Support** - 2 APIs

## 1. User Authentication and Profile Management

- **Sign Up API:**
  - **Endpoint:** /api/auth/signup
  - **Method:** POST
  - **Description:** Register a new user.
  - **Parameters:** name, email, password, gender, termsAccepted.
- **Login API:**
  - **Endpoint:** /api/auth/login
  - **Method:** POST
  - **Description:** User login with email and password.
  - **Parameters:** email, password.
- **Logout API:**
  - **Endpoint:** /api/auth/logout
  - **Method:** POST
- **Forgot Password API:**
  - **Endpoint:** /api/auth/forgot-password
  - **Method:** POST
  - **Parameters:** email.
- **Reset Password API:**
  - **Endpoint:** /api/auth/reset-password
  - **Method:** POST
  - **Parameters:** email, newPassword.
- **User Profile API:**

- **Endpoint:** /api/user/profile
  - **Method:** GET
  - **Description:** Fetch user profile details.
- **Update Profile API:**
  - **Endpoint:** /api/user/update
  - **Method:** PUT
  - **Parameters:** name, profilePicture, bio, etc.

## 2. Quiz and Question Management

- **Fetch Quiz Categories API:**
  - **Endpoint:** /api/quiz/categories
  - **Method:** GET
  - **Description:** Retrieve available quiz categories.
- **Fetch Quizzes by Category API:**
  - **Endpoint:** /api/quiz/category/{categoryId}
  - **Method:** GET
  - **Parameters:** categoryId.
- **Quiz Details API:**
  - **Endpoint:** /api/quiz/{quizId}
  - **Method:** GET
  - **Description:** Fetch details of a specific quiz.
- **Start Quiz API:**
  - **Endpoint:** /api/quiz/start
  - **Method:** POST
  - **Parameters:** quizId, userId.
- **Fetch Questions for Quiz API:**
  - **Endpoint:** /api/quiz/{quizId}/questions
  - **Method:** GET
  - **Description:** Retrieve questions for a given quiz.
- **Submit Answer API:**
  - **Endpoint:** /api/quiz/{quizId}/submit
  - **Method:** POST
  - **Parameters:** questionId, selectedOption, userId.
- **Generate AI-based Questions API:**
  - **Endpoint:** /api/quiz/generate-question
  - **Method:** POST
  - **Description:** Use ChatGPT API to generate dynamic quiz questions.
  - **Parameters:** category, difficultyLevel.

## 3. Leaderboard and Scoring

- **Leaderboard API:**
  - **Endpoint:** /api/leaderboard/global
  - **Method:** GET
  - **Description:** Retrieve the global leaderboard.
- **Category-Specific Leaderboard API:**
  - **Endpoint:** /api/leaderboard/category/{categoryId}
  - **Method:** GET
- **User Score Update API:**
  - **Endpoint:** /api/user/update-score

- **Method:** PUT
  - **Parameters:** `userId, score.`
- **Fetch User Rank API:**
  - **Endpoint:** `/api/leaderboard/rank/{userId}`
  - **Method:** GET

## 4. Contest and Multiplayer Mode

- **Fetch Contests API:**
  - **Endpoint:** `/api/contests/active`
  - **Method:** GET
- **Join Contest API:**
  - **Endpoint:** `/api/contest/join`
  - **Method:** POST
  - **Parameters:** `contestId,userId.`
- **Fetch Contest Questions API:**
  - **Endpoint:** `/api/contest/{contestId}/questions`
  - **Method:** GET
- **Submit Contest Answer API:**
  - **Endpoint:** `/api/contest/{contestId}/submit`
  - **Method:** POST
- **Get Contest Results API:**
  - **Endpoint:** `/api/contest/{contestId}/results`
  - **Method:** GET

## 5. Wallet, Transactions, and Rewards

- **Fetch Wallet Balance API:**
  - **Endpoint:** `/api/user/wallet`
  - **Method:** GET
- **Add Money to Wallet API:**
  - **Endpoint:** `/api/user/wallet/add`
  - **Method:** POST
  - **Parameters:** `userId, amount, paymentMethod.`
- **Withdraw from Wallet API:**
  - **Endpoint:** `/api/user/wallet/withdraw`
  - **Method:** POST
  - **Parameters:** `userId, amount.`
- **Transaction History API:**
  - **Endpoint:** `/api/user/wallet/transactions`
  - **Method:** GET
- **Reward Points Update API:**
  - **Endpoint:** `/api/user/rewards`
  - **Method:** PUT
  - **Parameters:** `userId, points.`

## 6. Notification and Chat Management

- **Fetch Notifications API:**
  - **Endpoint:** `/api/notifications`
  - **Method:** GET

- **Mark Notification as Read API:**
  - **Endpoint:** /api/notifications/read
  - **Method:** PUT
  - **Parameters:** notificationId.
- **Chat with Friends API:**
  - **Endpoint:** /api/chat/send-message
  - **Method:** POST
  - **Parameters:** senderId, receiverId, message.
- **Fetch Chat History API:**
  - **Endpoint:** /api/chat/{friendId}
  - **Method:** GET

## 7. Premium Features and Subscription Management

- **Fetch Premium Benefits API:**
  - **Endpoint:** /api/premium/benefits
  - **Method:** GET
- **Subscribe to Premium API:**
  - **Endpoint:** /api/premium/subscribe
  - **Method:** POST
  - **Parameters:** userId, planId, paymentMethod.
- **Fetch Subscription Plans API:**
  - **Endpoint:** /api/premium/plans
  - **Method:** GET

## 8. Social and Referral System

- **Invite Friends API:**
  - **Endpoint:** /api/user/invite
  - **Method:** POST
  - **Parameters:** referrerId, inviteeEmail.
- **Referral Rewards API:**
  - **Endpoint:** /api/user/referral-rewards
  - **Method:** GET
- **Follow/Unfollow Users API:**
  - **Endpoint:** /api/user/{userId}/follow
  - **Method:** POST
  - **Parameters:** followerId, followeeId.

## 9. Settings, Preferences, and Security

- **Update Preferences API:**
  - **Endpoint:** /api/user/preferences
  - **Method:** PUT
  - **Parameters:** notifications, privacySettings, etc.
- **Change Password API:**
  - **Endpoint:** /api/user/change-password
  - **Method:** PUT
  - **Parameters:** currentPassword, newPassword.
- **Verify Identity API:**
  - **Endpoint:** /api/user/verify-identity

- **Method:** POST
- **Parameters:** `userId`, `idType`, `idDocument`.

## **10. FAQ and Support**

- **Fetch FAQs API:**
  - **Endpoint:** `/api/support/faqs`
  - **Method:** GET
- **Submit Support Ticket API:**
  - **Endpoint:** `/api/support/ticket`
  - **Method:** POST
  - **Parameters:** `userId`, `issueDescription`.