**User Management & Profile System**

1. **User Registration & Authentication**
   * Register and log in via email/password or social media.
   * Profile creation with the ability to add an avatar and customize basic information.
2. **User Profiles**
   * Display basic user information (username, avatar, bio).
   * Track total bets, winnings, success rates, and favorite teams/drivers.
   * Option to save favorite drivers, teams, and tracks for personalized analytics.
3. **Friend Management**
   * Add/remove friends and see a friend list.
   * Option to view friends' profiles, bets, and league standings.
4. **Achievements & Badges**
   * Award badges for milestones (e.g., number of bets placed, winnings earned).
   * Display badges on user profiles for gamification.

**League Management**

1. **League Creation**
   * Create public or private leagues, set entry criteria (e.g., bet amounts, friend-only leagues).
   * Customize league rules (e.g., point scoring systems for bets, season duration).
2. **Joining & Managing Leagues**
   * Browse and join public leagues or receive invitations for private leagues.
   * Ability to leave or switch between leagues.
3. **League Standings & Leaderboards**
   * Dynamic leaderboards showing participants’ rankings based on total points, winnings, or bet success rates.
   * Weekly and overall standings within leagues.

**Betting System**

1. **Bet Placement**
   * Place bets on race outcomes (e.g., driver placements, team standings, fastest laps).
   * Set odds based on real-time F1 data from the API or predefined odds.
   * Option for “live bets” during races if real-time data is available.
2. **Bet History & Tracking**
   * View history of all placed bets with outcomes (win/loss, returns).
   * Show pending bets and their potential outcomes.
3. **Winnings & Payout Management**
   * Track earnings from won bets.
   * Visualize total winnings in a summary section (e.g., by season, league, or bet type).

**Analytics Dashboard**

1. **Driver Stats**
   * Display individual driver performance stats (average placements, win rates, podium finishes).
   * Historical performance trends over seasons or individual races.
   * Data visualization (e.g., graphs) showing driver performance evolution.
2. **Team Stats**
   * Display team-specific performance stats, showing strengths, weaknesses, and key improvements.
   * Compare team stats across different seasons and against other teams.
3. **Track Analysis**
   * Display track-specific stats (e.g., average lap time, weather impacts, top speeds).
   * Analysis of driver and team performance at each track historically.
4. **Historical Trends**
   * Graphs showing historical trends in driver and team performance over seasons.
   * Analysis of common factors affecting performance trends (e.g., new regulations, team changes).
5. **Prediction Analytics**
   * Breakdown of user prediction success rates across different categories (e.g., drivers, teams, tracks).
   * Historical accuracy analysis for each prediction type and comparison to actual outcomes.
6. **Customizable Dashboards**
   * Option to save views and set up a custom dashboard with specific driver, team, and track analytics.

**User Prediction Analysis**

1. **Prediction History & Accuracy**
   * View all historical predictions with associated success/failure outcomes.
   * Statistical breakdown of prediction accuracy by category.
2. **User Success Rates**
   * Show success rates for each prediction category, highlighting strong and weak points in user predictions.
   * Comparison of user success rates to league averages and top performers.

**Notifications & Alerts**

1. **Race & Event Alerts**
   * Notify users of upcoming races, league status changes, and betting deadlines.
   * Real-time alerts for race results, bet outcomes, or status changes.
2. **Performance Alerts**
   * Notify users of major performance changes (e.g., driver injuries, team changes, new race updates).
   * Option to enable alerts for favorite drivers, teams, or tracks.

**Additional Analytics & Data Visualization**

1. **Comparative Analytics**
   * Compare multiple drivers or teams based on key performance metrics.
   * Side-by-side analysis of head-to-head driver stats in selected races or seasons.
2. **Data Visualization**
   * Visual graphs for key metrics (win rates, podium finishes, standings trends).
   * Customizable charts for viewing personalized stats and predictions.
3. **Leaderboard & Ranking Analytics**
   * Display user rankings across different leagues and public standings.
   * Highlight “Top Predictors” with high success rates, most winnings, or best performance streaks.

**User Experience & Customization**

1. **Profile Personalization**
   * Customize profile layout with themes or colors.
   * Set preferred notification preferences and frequency.
2. **Leaderboard & Bet Statistics Filters**
   * Filter leaderboards by categories (e.g., drivers, teams, tracks).
   * Refine betting history by specific race events, seasons, or leagues.
3. **Historical Replays & Insights**
   * Show replays or summaries of past races with performance highlights.
   * Insight section for upcoming races, highlighting predictions based on past data.

**Administrative & Backend Functionalities**

1. **Admin Controls**
   * User and league management for moderation.
   * Monitoring of bets, league activities, and dashboard analytics.
2. **Data Integration with F1 API**
   * Set up real-time data fetching for race results, driver/team stats, and standings.
   * Ensure proper data synchronization for live betting and stat updates.
3. **Reporting and Error Handling**
   * Generate reports for app performance, user engagement, and bug/error tracking.
   * Error handling and notification system for any data-fetch issues with the API.