🎉 BirthdayGen: The Celebration Automation Platform — Development Manual

1. Project Overview

BirthdayGen is a magical, AI-powered celebration automation platform designed to transform how individuals and businesses (HR/teams) celebrate special moments. It moves beyond simple reminders to offer a personalized, joyful, and effortless experience for birthdays, holidays, and major milestones.

Core Mission: To empower users to automate joy so they can focus on celebrating, not organizing, ensuring no special occasion is ever missed.

Target Audience:

- **Individuals: Tech-savvy Gen Z & Millennials, parents, spiritualists, and remote workers who want to easily track, personalize, and send digital cards and gifts to friends and family.**
- **Businesses & Teams (B2B): People-Ops/HR managers, office, and culture leads at remote or hybrid tech/creative SMBs (50-500 staff) looking to streamline employee birthday and celebration workflows, boost morale, and ensure consistent, on-brand recognition. This B2B focus is a key strategy for recurring SaaS revenue.**

Differentiation Strategy: BirthdayGen stands out by merging emotionally rich experiences with cutting-edge AI technologies. It integrates AI-driven personalization (e.g., aura insights), gamified streak systems, and intuitive design interfaces to deliver a holistic platform that caters to both emotional and practical needs around celebrations and gifting. The platform emphasizes celebration, customization, automation, and personalization as its core, with astrology acting as an optional "flair" rather than the central theme.

2. Product Features

BirthdayGen encompasses a wide range of features designed for a seamless, magical user journey:

A. Core User Management & Authentication

- **User Registration & Login: Email/password signup and login via Supabase Authentication (UUIDs for user IDs). Google OAuth integration is a placeholder for future implementation.**
- **Password Reset: Functionality for forgotten passwords.**
- **Profile Management: Users can update their name, email, password, and manage preferences and consent flags. Aura type and quiz completion status are stored here.**
- **Account Deletion & Data Export: Features for users to manage their data.**

B. Contact & Celebration Management

- **Contact Management (CRUD): Add, edit, and delete contacts with fields such as name, birthday, relationship, email, phone, notes, and an assigned aura type.**
- **Contact Import:**
  - **CSV Upload: Supported with validation for bulk contact entry.**
  - **Google Contacts OAuth: UI is in place, but live integration with Google People API requires OAuth configuration.**
- **Event & Holiday Data: Supports tracking birthdays, major public holidays, and custom dates.**
- **Calendar Sync: UI could be extended for integration with Google/Apple Calendars, but live sync is not yet implemented.**

C. Card Studio & Personalization

- **Card Templates: Users can select from various pre-built templates (e.g., cosmic, elegant, minimal, playful). More templates are needed.**
- **Customization: Ability to customize message, background, color, add emojis, and signature.**

- **AI Image Generation: Users can create unique, AI-powered card images and digital stickers using OpenAI DALL-E 3, often driven by personality-based or aura-based prompts. The system includes intelligent fallbacks to placeholder images if the API is not configured.**
- **Real-time Preview: WYSIWYG preview of the card as it's being designed.**
- **"Remix" Feature: Ability to quickly generate new AI art/styles or messages with one click.**
- **Card Management: Save as draft, schedule for later, or send immediately. Users can track sent and scheduled cards.**

D. Aura Quiz & Gifting

- **Aura Quiz: A 3-5 step delightful quiz to determine a user's or contact's "aura type" (e.g., fire, water, earth, air, cosmic). Quiz results are saved to Supabase.**
- **Aura Assignment: Ability to assign aura types to contacts for personalized recommendations.**
- **Gift Oracle/Recommendations: Suggestions for gifts based on aura type, recipient preferences, budget, and sentiment.**
    - **Currently, recommendations are static or based on sample data; actual fulfillment/shop/affiliate integration is a future enhancement.**
- **Gift Bundles: Curated gift bundles (e.g., "Pisces Power Pack").**

E. Automation & Delivery

- **Automation Engine: "Set-and-forget" functionality allowing users to define celebration tiers (message only, card, or card + gift) and associate them with contacts or groups for auto-sending.**
- **Scheduled Delivery: Users can choose a specific date and time for cards/messages/gifts to be sent.**
- **Notifications: Email reminders for upcoming birthdays/holidays and in-app notifications for scheduled/sent cards. Slack/Teams webhooks are a future B2B feature.**

F. Gamification & Engagement

- **Mini-Games: Arcade prototype deployed, including games like Emoji Match, Memory Game, Dad Trivia, and Catch Ball Game.**
- **Streaks & Rewards: Opportunity to integrate streak-based systems (e.g., for consistent engagement or timely sends) and unlockables.**
- **Daily Feed: Includes astrology readings, birthday history, gift suggestions, and holiday awareness.**

G. UI/UX & Branding

- **Vibrant & Magical Aesthetic: Uses a palette of bright blues, pinks, yellows, and pastels with gradients, confetti, and festive animations.**
- **Mobile-First & Responsive: All components designed to adapt seamlessly across mobile, tablet, and desktop devices.**
- **Micro-interactions: Playful animations, loading states, empty states, and toasts for user feedback.**
- **Accessibility: Prioritizes WCAG-AA contrast, keyboard navigation, and screen-reader labels.**

H. Business & Monetization

- **Freemium/Premium Tiers: Strategy to unlock exclusive designs, astrology insights, and concierge services.**
- **E-commerce: Physical and digital products (e.g., birthday kits, printable cards).**
- **Affiliate Revenue: Personalized Amazon, Etsy, and partner store integrations.**
- **Licensing/White-Label API: For corporations or influencer shops for birthday automation.**
- **Subscription Gate: Component for premium unlock.**
- **One-time Purchase: Strategy for full arcade access.**

3. Phases & Milestones

The project development follows an Agile, iterative methodology, structured into distinct phases for clarity and progress tracking, leveraging

a pure Supabase + React/Vite SPA architecture (no Node/Express backend).

PHASE 0: Project Init & Infra

- **0.1 Repo & Project Setup: Create GitHub repository, configure local development environment (VS Code with Cline/RooCode, Replit Core), set up Vite + React (TypeScript) SPA scaffold.**
- **0.2 Supabase Configuration: Create a new Supabase project (free tier), copy URL and Anon key, integrate Supabase JS client into the frontend, define initial Supabase database schema (users, contacts, cards, aura_quiz_responses, gift_recommendations) and apply RLS.**

PHASE 1: User Authentication & Account System

- **1.1 User Registration & Login: Implement Supabase Auth (email/password), including animated login/signup pages.**
- **1.2 OAuth Integration: Set up Google OAuth (currently a placeholder, requires Google Cloud Console setup).**
- **1.3 Password Reset: Implement forgot password flow.**
- **1.4 Profile Management: Implement pages/components to allow users to update display name, email, password, and manage their aura type and quiz completion status.**
- **1.5 Account Deletion & Data Export: Provide functionality for account deletion and data export.**

PHASE 2: Contact & Celebration Data Engine

- **2.1 Contact Management: Develop CRUD operations (Add/Edit/Delete contacts) with forms and validation. Include fields for name, birthday, relationship, email, phone, notes, and aura type assignment.**
- **2.2 Contact Import:**
  - **CSV Upload: Implement file picker and parser for CSV import with validation.**
  - **Google Contacts OAuth Integration: Complete the live People API integration (currently a placeholder).**

- **2.3 Event & Holiday Data Model: Define data models for birthdays, major holidays, and custom celebration dates within Supabase.**
- **2.4 Calendar Sync Logic: UI could allow for Google/Apple Calendar integration, but full sync is a future task.**
- **2.5 RLS & Privacy Safeguards: Implement Row Level Security (RLS) policies in Supabase to ensure data privacy and security.**

PHASE 3: Card Studio & Personalization

- **3.1 Card Template Selection: Implement UI for browsing and selecting card templates (e.g., cosmic, elegant, minimal, playful).**
- **3.2 Card Customization UI: Develop real-time preview (WYSIWYG) allowing users to customize messages, backgrounds, colors, and add decorative elements/stickers.**
- **3.3 AI Image Generation Integration: Connect to OpenAI DALL-E 3 via Supabase Edge Functions for generating custom card images from prompts, including fallbacks for API failures.**
- **3.4 Aura Quiz Implementation: Build a delightful, interactive multi-step aura quiz. Ensure quiz results are saved to the user's profile and/or corresponding contact in Supabase.**
- **3.5 Card Management: Implement UI to save cards as drafts, schedule them for future sending, or send immediately. Display a "My Cards" dashboard showing sent, scheduled, and draft cards.**

PHASE 4: Gift Oracle & Delivery

- **4.1 Gift Recommendation Logic: Implement initial logic for gift suggestions per recipient (can start with static lists for MVP, then evolve to AI-based recommendations).**
- **4.2 Affiliate & Shop Integration: Display product images, descriptions, and affiliate/shop links.**
- **4.3 Gift Status: Allow users to mark gifts as “sent” or “skipped”.**
- **4.4 Physical/Electronic Delivery Integration: Stub out/plan for actual email, SMS, or print delivery mechanisms (e.g., using Resend or Mailgun). Payment processing for premium gifts is a future task.**

PHASE 5: Automation & Celebration Tiers

- **5.1 Automation Rules UI: Design user interface for setting up multi-tier celebration automation (Message Only, Card, Card + Gift) per contact or group.**
- **5.2 Auto-Send Engine: Implement scheduling functionality for automated sends. The UI should clearly preview upcoming automations.**
- **5.3 Holiday Automation: Enable automation for major holidays in parallel with birthdays.**

PHASE 6: Dashboard & User Experience

- **6.1 Main Dashboard: Develop the primary user dashboard/feed, displaying upcoming birthdays, holidays, and automation status.**
- **6.2 Tabbed Views: Implement tabbed navigation for Events, Contacts, Automation, and Auras on the dashboard.**
- **6.3 Micro-Interactions: Integrate animations, confetti, and subtle visual feedback to enhance the celebratory and magical user experience.**
- **6.4 Onboarding & Tooltips: Develop guided onboarding tours and contextual tooltips to help new users navigate features.**

PHASE 7: Games & Interactive Experiences

- **7.1 Mini-Game Implementation: Integrate arcade mini-games such as Emoji Match, Memory Game, Trivia, and Catch Ball, ensuring they are mobile-friendly and easily customizable.**
- **7.2 Game Logic & Polish: Enhance game physics, add sound design, and improve animations for a professional polish.**
- **7.3 Trivia Update System: Implement a system for updating trivia questions periodically (e.g., three times daily by subject, via Supabase Edge Functions pulling from a Google Sheet).**
- **7.4 Gamification Elements: Integrate streak-based rewards or challenges to encourage consistent user engagement.**

PHASE 8: Business & Growth Framework

- **8.1 Marketing Dashboard (Placeholder): Integrate basic analytics tracking for user actions like card creation, gift selection, and delivery scheduling.**
- **8.2 Content Generation Tools: Auto-generate content for social media, blog posts (e.g., "Today in Birthday History," "Zodiac Birthdays of the Week"), leveraging AI tools.**
- **8.3 Growth Loops: Implement referral programs, invite systems, and viral hooks (e.g., "Share this card to unlock X," "Remix this card for YOUR dad" CTAs).**
- **8.4 Affiliate, Premium & Shop Integration: Plan for detailed integration with e-commerce platforms and payment gateways for monetization.**

PHASE 9: Settings, Admin & Legal

- **9.1 User Settings: Enable users to manage notification preferences, timezone settings, etc..**
- **9.2 Privacy Policy & ToS: Draft and implement legal documents.**
- **9.3 Admin Panel (Future): Plan for an optional admin panel for content moderation, user management, and health dashboards.**
- **9.4 Data Integrity & Compliance: Ensure robust error handling, database RLS, and security measures are in place.**

4. Comprehensive Task & Microtask List

For each feature and sub-feature outlined in the Phases, the following microtasks apply:

- **Discovery & Design:**
  - **Conduct deep user research and persona definition.**
  - **Define problem statements and core value propositions.**
  - **Design UI wireframes/sketches for each component/page.**
  - **Map out user flows and create detailed mockups for UX/UI (focus on adaptability and personalization).**
  - **Design AI interaction patterns (how AI communicates with the user).**
- **Database & API:**

    - **Write Supabase schema migrations (SQL) for all necessary tables.**
    - **Create Supabase tables and apply RLS policies.**
    - **Connect to Supabase client library with React hooks for all CRUD operations.**
    - **Configure Supabase Edge Functions for server-side logic (e.g., AI image generation, scheduled tasks).**
- **Frontend Development:**
    - **Build all necessary React components and pages based on UI designs.**
    - **Implement responsive design using Tailwind CSS.**
    - **Integrate animations and micro-interactions (e.g., Framer Motion, Lottie).**
    - **Implement form validation (e.g., Zod) and user feedback (toasts, loading states, error messages).**
    - **Integrate third-party APIs (OpenAI, Google People API, Stripe).**
- **Quality Assurance & Testing:**
    - **Write Cypress E2E tests for core user flows.**
    - **Perform manual QA on all device sizes and browsers.**
    - **Conduct usability testing with target users.**
    - **Validate AI model accuracy, fairness, and effectiveness.**
    - **Perform performance and security testing (load tests, vulnerability scans).**
- **Deployment & Monitoring:**
    - **Deploy to Netlify/Vercel for preview/staging environments.**
    - **Set up robust monitoring and analytics (e.g., Google Analytics, PostHog, Sentry, Grafana).**
    - **Design compelling onboarding experiences for users.**
- **Documentation & Refinement:**
    - **Document non-obvious flows in Notion/README.**
    - **Maintain an Agile mindset with continuous feedback loops and iterative refinement.**

5. Prompts Playbook (Key Prompts & Their Purpose)

This section compiles the key prompts used and refined throughout the project, demonstrating how AI assistants can be leveraged for various development tasks.

- **Initial Lovable.dev Splash Prompt (Birthdays + Holidays + Gifting + Logo): Sets the core vision for BirthdayGen as a celebration platform for birthdays, holidays, and special occasions, emphasizing personalization, gifts (including aura gifting), and integrating the visual style from the provided logo.**
- **Lovable.dev Feature Completion & Integration Prompt: Instructs Lovable.dev to fix specific bugs (e.g., aura quiz not saving, AI image generation placeholders), wire all forms to Supabase, enhance holiday support, and improve visual polish.**
- **Deep Research Prompt (for Mini-Game/App Ideas & Tools): A meta-prompt designed to generate a highly specific research prompt. This prompt, when run in tools like Perplexity Pro or Claude Max, identifies free/open-source mini-game/app templates and app development platforms suitable for creating a personalized, animated Father's Day gift app in under 30 minutes, emphasizing code, customization, and scalability for BirthdayGen.**
- **Master Prompt for Gemini 2.5 Pro Build / Jules.google (Game Development): A copy-paste prompt pack to generate files for a mobile-first "Father-Day-Arcade" single-page site, including game engine, UI, live trivia DB (Supabase), and automated trivia refresh.**
- **Replit Autopilot Prompt ("Replit Fathers Day Arcade Update Prompt"): A comprehensive prompt to directly instruct Replit to scaffold and update the Father's Day Arcade project, including all necessary files, routing, Supabase hooks, and deployment configurations.**
- **Content Suite Generation Prompt: A "BirthdayGen v3.5 Daily Content Prompt" to generate product-led, emotionally resonant content for social media and blogs, incorporating live search for holidays, birthdays, and astrological contexts. It also includes visual prompts and merch drop ideas.**
- **B2B Landing Page Prompt: Instructs AI to design and build a standalone landing/marketing website for BirthdayGen's B2B**

offering, focusing on key sections, CTAs, and a playful yet trustworthy visual style.

- **BirthdayGen Project Initialization and Overview Prompt (for Replit/Coding Assistants): A detailed, technically comprehensive prompt to define the BirthdayGen project from scratch for coding assistants, outlining requirements, technical preferences, desired architecture (React SPA with Supabase, no Express), and core features.**
- **Refactor/Adapter Prompts: Specific prompts for AI to generate code for migrating from old API calls (e.g., Express/JWT) to direct Supabase client calls, providing a `supabaseAdapter.ts` file.**

6. Validation

BirthdayGen's success is measured by both user engagement and financial viability.

Key Metrics (v0.1 Targets):

- **MRR (Monthly Recurring Revenue): Target $10k (to sustain 2-3 FTE devs & marketing).**
- **WAU (Weekly Active Users): Target 15k (demonstrates mainstream appeal).**
- Pay-to-Free Ratio: ≥ 12% (signals pricing-value fit).
- **NPS (Net Promoter Score): 45+ (predictor of word-of-mouth flywheel).**
- **Time-to-First-Schedule: Target < 5 min.**
- **% Cards Auto-Sent without Edit: > 70%.**

Quality Assurance & Testing Pillars:

- **Functional Testing: Ensure all features work as specified (e.g., Playwright cloud runs, manual smoke tests).**
- **Usability Testing: Observe real users, ensure intuitive flows, assess AI interactions (e.g., remote moderated sessions, SUS scores).**

- **Performance Testing: Stress test backend and frontend to handle load and computations (e.g., K6 load scripts, Supabase perf dashboards).**
- **Security Testing: Penetration testing, vulnerability scans (e.g., GitHub CodeQL, Supabase RLS review, OWASP ZAP).**
- **AI Model Validation: Test accuracy, fairness, and effectiveness of AI models (e.g., blind reviews, toxicity checks).**
- **Bias/Fairness: Specifically check for pronoun and cultural biases in AI-generated content.**
- **User Acceptance Testing (UAT): Involve target users for real-world feedback before launch.**

Design Checkpoints: Every new screen, endpoint, or cron job must directly increase on-time sends, reduce admin minutes, or raise delight score.

Launch Mantra: "Ship the greeting, delight the employee, show the admin the time saved" —everything else is secondary. "Perfect is the enemy of Paid."

7. Gaps & Known Issues (Current Status)

Based on the latest assessments and Lovable.dev outputs, BirthdayGen is a functionally complete MVP with a strong foundation, but several areas require further development and bug fixes:

A. UI/UX & Functional Gaps

- **Card Text Rendering: Custom text does not appear on top of the AI-generated image in the preview or final card; it's often small or misplaced.**
- **Aura Quiz Submission: While the quiz UI works and assigns an aura, the final "Reveal My Aura" button (or similar) sometimes fails to persist the results to the database, showing a 400 error.**
- **Dashboard Loading: Contacts and birthdays may not load on the dashboard due to backend errors (often 401 Unauthorized errors indicating authentication issues with API calls). This was previously**

linked to old Express/JWT backend, now should be Supabase RLS/Auth issues.

- **Image Scaling: Generated AI images for cards are sometimes condensed to a small size.**
- **Card Editing Templates: Needs more templates and color options. Icons on card designs can overlap in corners.**
- **Landing Page UI: The floating card box on the main page can look awkward and disconnected from the main flow.**

B. Technical/Integration Gaps

- **Google OAuth Contact Import: The UI for Google Contacts import is present, but the live Google People API integration is not yet active. It currently functions as a placeholder/stub until OAuth keys and configurations are fully set up.**
- **Card/Gift Delivery: The UI for "Send" buttons and scheduling is in place, but the actual electronic delivery (email, SMS) or physical print fulfillment is not yet implemented.**
- **AI Image Generation Fallback: While DALL-E 3 integration with OpenAI API works, there's no implemented fallback to other models like SDXL or local models if the OpenAI API fails.**
- **Automation Engine Logic: The UI for setting up automation rules and scheduling is ready, but the actual backend logic for auto-sending emails/cards via a CRON job or third-party service is still to be built.**
- **Gift Fulfillment: Gift recommendations are currently suggestions only, without live fulfillment, shop integration, or direct affiliate links.**
- **Payment Processing: No Stripe or other payment processing is live for premium features or physical gifts.**
- **Calendar Sync: No direct Google/Apple Calendar integration for event reminders.**
- **Multi-language/Localization: No internationalization (i18n) features are implemented.**

8. Change Log (Major Architectural & Strategic Shifts)

This section documents the significant shifts and decisions made throughout BirthdayGen's development, providing context for the current state.

- **From Hybrid Backend to Pure Supabase SPA: Initial plans and attempts involved a Node/Express backend. A decisive shift was made to a pure Supabase (Auth, Database, Edge Functions) and React/Vite Single Page Application (SPA) architecture, eliminating the need for a custom Node.js Express backend. This greatly simplifies the stack and deployment.**
- **Reframing Astrology: Initially, astrology was a core differentiator. This has been reframed to an optional "flair" or personalization layer, with the primary focus now on celebration automation, personalization, and customization. This broadens market appeal.**
- **Dedicated B2B Strategy: Early on, the potential for B2B sales (e.g., HR teams for employee birthdays) was identified. This has evolved into a dedicated B2B product line ("Employee Birthday Concierge") with its own value proposition, minimal viable solution, and monetization strategy, integrated into the overall rebuild plan.**
- **Specialized Tool Adoption:**
    - **Lovable.dev: Adopted for rapid, modular frontend UI development (React/Tailwind) for the core app, with the understanding it might be temporary or supplemented.**
    - **Framer/Webflow: Recommended for building the standalone marketing/landing page, separate from the main application codebase, for speed, SEO, and specialized design.**
    - **Cursor AI/Claude Code Max: Identified as powerful tools for extending and refining code generated by Lovable.dev, particularly for complex logic or backend integrations once the UI foundation is solid.**
- **Emphasis on Free/Open-Source & Lean Budget: Throughout the development, there's a strong emphasis on utilizing free tiers, open-source tools, and existing procured licenses to minimize initial cash burn and ensure scalability with revenue growth.**
- **Prioritization of Core Triad: The focus remains on the "card-copy-gift triad" as the fastest path to validated value and revenue.**

- **Iterative AI Integration: AI features are being integrated incrementally; initially, there were placeholder AI components. Now, AI image generation is functional, with a clear path to integrate AI for message generation and gift recommendations.**
- **Comprehensive Project Handoffs: A shift towards providing detailed, comprehensive handoff documents and prompt playbooks to ensure any developer can pick up the project with full context, avoiding past "clusterfuck" scenarios.**

BirthdayGen Project Documentation: Comprehensive Overview & Development Plan

Project Vision: BirthdayGen is a **magical celebration automation platform** that empowers users to effortlessly mark every special moment—birthdays, holidays, and major milestones—through **AI-powered personalized cards, custom messages, thoughtful gifts, and seamless scheduling**. It is designed for both **individual consumers** and **businesses (B2B HR teams)**, aiming to transform manual celebration tasks into joyful, automated experiences. The core focus is on **celebration, automation, personalization**, with astrology as an optional flair. The user experience should be **joyful, magical, vibrant, and intuitive**, never generic or corporate.

Core Product Features & Functionality

1. User Authentication & Account Management

- **Registration & Login:** Implement sign-up and log-in flows using **Supabase Authentication** (email/password). Support for Google OAuth is a UI placeholder, requiring live configuration.
- **Profile Management:** Allow users to update their basic information (name, email, password), preferences, consent flags, and view their assigned aura type. All user profiles are linked via UUID to Supabase Auth.
- **Password Reset:** Implement a functional "forgot password" flow.
- **Account Actions:** Support account deletion and data export for compliance.

2. Contact & Celebration Data Engine

- **Contact Management:**

    - Provide UI for adding, editing, and deleting contacts (first name, last name, email, phone, birthday, relationship, notes, aura type).
    - **CSV Import:** Implement robust CSV file upload with validation for contact import.
    - **Google Contacts Import:** The UI for Google OAuth integration is in place, but live API integration and credential configuration are required. This is a "coming soon" feature until configured.
    - **Search & Filter:** Allow users to search and filter their contact list.
    - **Aura Assignment:** Enable assigning an aura type to each contact (manual or via quiz).
- **Event & Holiday Data:** Manage and display birthdays, major public holidays, and custom user-defined celebration dates.

3. Aura Quiz & Personalization

- **Interactive Aura Quiz:** A 3-5 step visual quiz to determine a user's or contact's "aura type" (Fire, Water, Earth, Air, Cosmic).
- **Result Persistence:** Ensure quiz results are saved to the respective user or contact profile in Supabase.
- **Personalized Recommendations:** Utilize the assigned aura type to drive personalized suggestions for cards, gifts, and templates.

4. AI Card Studio & Customization

- **Card Template Gallery:** Provide a diverse selection of card templates (e.g., Cosmic, Elegant, Minimal, Playful, Holiday, etc.) with varied color styles.
- **AI Image Generation:**
    - Integrate **OpenAI DALL-E 3** via a Supabase Edge Function to generate unique card images based on user prompts and aura types (currently working with API key).
    - **Text Overlay:** Ensure custom text messages properly overlay the generated image within the card preview and final output.
    - **Image Sizing:** Address any issues with AI-generated images being condensed or improperly scaled.
    - **Remix Feature:** Allow users to "remix" card images and messages with one click, suggesting fun prompts (e.g., "Make it more cosmic!", "Add more confetti!").
- **Customization Tools:** Enable users to customize card messages, backgrounds, colors, and add stickers or emojis.
- **Live Preview:** Offer a real-time, WYSIWYG preview of the card as it's being designed.
- **Card Actions:** Support saving cards as drafts, scheduling future sends, or sending immediately.
- **Card Tracking:** Display a list of all sent, scheduled, and draft cards.
- **Voice Note (Optional):** Allow users to add a short personal voice note or audio birthday wish to their card (simple upload/playback).

5. Gift Oracle & Recommendations

- **Aura-Based Suggestions:** Provide gift ideas tailored to the recipient's aura type and occasion.
- **Integration:** The UI indicates future integration with gift marketplaces, unique links, or affiliate codes, but actual fulfillment or e-commerce is not yet live. Recommendations are currently suggestions only.

6. Automation & Delivery System

- **Multi-tier Celebrations:** Allow users to set up automated rules per contact or group for different celebration tiers: Message Only, Card, or Card + Gift.
- **Auto-Send Engine:** The UI for setting auto-send rules and previewing upcoming automations is complete, but the actual backend logic for triggering email/SMS delivery or card sends is in progress and requires further setup (e.g., CRON jobs, third-party services like Resend).
- **Reminders:** Implement in-app notifications and email reminders for upcoming birthdays and holidays.
- **Delivery Status:** Future ability to track the status of scheduled deliveries.

7. Dashboard & User Experience (UX)

- **Landing Page:** A mobile-first, vibrant, high-conversion landing page with animated confetti, clear value proposition, and compelling CTAs (e.g., "Get Started Free," "Take Aura Quiz").
- **Main Dashboard:** Features a tabbed interface (Events, Contacts, Automation, Auras) showing upcoming birthdays, holidays, and automation status.
- **Micro-Interactions:** Incorporate subtle confetti, floating balloons, bounce/fade-in animations, and other festive micro-interactions for a magical feel.
- **Onboarding:** Initial onboarding flow in place; could benefit from more detailed tooltips or walkthroughs.
- **Responsive Design:** All components maintain responsive design and visual consistency across devices.
- **Error Handling:** Implement robust error handling with user-friendly messages and branded toasts for feedback.

8. Monetization (Future/Optional for MVP)

- **Freemium/Premium Tiers:** UI placeholders for different subscription tiers to unlock exclusive card designs, advanced features, or concierge services.
- **Payment Processing:** Stripe integration is needed for actual payment processing.

9. B2B (Teams/HR) Features (Scalable)

- **Team/Org Management:** Future capability for HR departments to manage employee celebrations, bulk upload birthdays, and view a celebration dashboard.
- **White-Label Branding:** Potential for custom branding for enterprise clients.
- **Slack/Teams Integration:** Future webhook notifications for managers.

10. Admin Panel & Analytics (Future)

- No admin dashboard for user/content management or analytics yet. Basic analytics tracking is planned.

Technical Stack & Architecture

- **Frontend:** React (TypeScript), Vite, Tailwind CSS, Framer Motion (for animations).
- **Backend: Supabase** (Authentication, PostgreSQL Database, Storage). **Crucially, there is NO custom Node.js/Express backend; all data operations are handled directly via the Supabase JavaScript client.**
- **AI/ML:** OpenAI DALL-E 3 (for image generation), LLMs like ChatGPT/Claude/Gemini (for message generation and aura analysis).
- **Automation:** n8n / Make.com (for content generation and automation orchestration), Supabase Edge Functions (for scheduled tasks).
- **Deployment:** Netlify / Vercel (for the SPA), GitHub (for version control). Replit Core is used as a rapid development environment.
- **Payments:** Stripe (planned for monetization).
- **Design Tools:** Canva Pro (for visual assets and content planning).
- **Development Environment:** VSCode with Cline/RooCode, Notebook LM.

Current Gaps & Next Steps (Prioritized)

Immediate Fixes & Integrations (Critical for MVP Completion):

- **Fix Aura Quiz Save:** Resolve the 400 error preventing Aura Quiz results from saving to Supabase.
- **Card Text Overlay/Sizing:** Ensure custom message text renders correctly on top of generated images in the Card Studio and final card, and that images are sized appropriately.
- **Real AI Image Generation:** Confirm OpenAI DALL-E integration is fully functional and reliable, with intelligent fallbacks (currently working).
- **Supabase Data Persistence:** Ensure ALL forms (Contact, Card, Automation settings) correctly read from and write to Supabase.

- **Automation Engine Logic:** Implement the backend logic for auto-sending messages, cards, and gift notifications based on user-defined rules.
- **Holiday Support:** Enhance logic for robust holiday card/gift automation.

Key Features Needing Activation/Development:

- **Google OAuth Contact Import:** Complete the live Google People API integration once OAuth credentials are set.
- **Card/Gift Delivery:** Implement actual email, SMS, and/or print delivery functionality for cards and gifts.
- **Gift Fulfillment:** Integrate with actual gift marketplaces/affiliate programs for seamless gift fulfillment.
- **Payment System:** Set up Stripe for subscription management and premium feature access.
- **Calendar Sync:** Implement Google/Apple Calendar integration for event reminders.

Future Enhancements (Post-MVP):

- **User Onboarding:** Develop an interactive onboarding tour or tooltips.
- **Analytics & Admin Panel:** Build dashboards for monitoring user activity, celebrations, and managing content/users.
- **Physical Card Sending:** Integrate with print partners and mailing services.
- **Multi-language/Localization.**
- **Advanced Gamification:** Streaks, unlockables, social leaderboards.

Development Process & Handoff Guidelines

- **Methodology:** Agile, iterative development with short, focused sprints.
- **Version Control:** Use GitHub; feature branches for each major task, squash merges, PR reviews.
- **Code Quality:** Adhere to clean, modular, well-commented code, consistent styling (Prettier, ESLint).
- **Testing:** Manual smoke tests per milestone, Cypress E2E for core flows, unit tests for business logic. Rigorous QA on all device sizes.
- **Deployment:** Utilize Netlify/Vercel for continuous deployment (staging and production environments).
- **Documentation:** Maintain up-to-date documentation for each feature and component (e.g., README comments, dedicated `/docs` files).
- **Communication:** Regular check-ins and clear communication of progress and blockers.

Microtasks (Applicable to any feature development):

- Design wireframe/sketch for the UI.
- List all necessary React components and their props.
- Define or adjust database schema (SQL) and Supabase table setup.
- Implement UI components and connect them to Supabase via React hooks (e.g., `useQuery`, `useMutation`).
- Add client-side form validation (e.g., Zod).
- Implement robust error handling and loading states for all API calls.
- Integrate with Supabase authentication state.
- Write automated tests (unit/E2E) where appropriate.
- Perform manual QA across various devices and browsers.
- Document non-obvious flows or technical decisions.

LLM Task Handoff & Context Reminder:

This document serves as the **single source of truth** for the **BirthdayGen** project. When generating code, completing tasks, or providing insights, maintain **absolute consistency** with all outlined features, requirements, and technical specifications. Prioritize **functional completeness, seamless user experience, and the joyful, magical brand aesthetic** at every stage of development. Ensure all data persistence is handled directly via **Supabase** (UUIDs for user IDs), and that **AI-driven personalization and celebration automation** are central to the user journey. Continuously validate functionality, appearance, and mobile responsiveness against the documented requirements. Flag any ambiguities or unconfirmed details for human review rather than inventing information. Every output should be **directly actionable** by the specified LLM (Claude Code, Gemini CLI, or a no-code LLM).

BirthdayGen is envisioned as a **magical celebration automation platform** designed to eliminate the hassle of remembering and personalizing special moments, targeting both individual consumers and businesses (HR teams). It aims to blend AI-powered personalization, thoughtful gifting, and seamless automation into one joyful user experience.

Here's an elaboration on the BirthdayGen project's features, progress, and remaining gaps, structured around your provided Table of Contents:

PHASE 1: User Authentication & Account System

This phase establishes the foundational elements for user identity and data management within BirthdayGen.

- **1.1 User Registration & Login (Supabase Email/Password)**
    - **Purpose:** To allow users to create and access their BirthdayGen accounts securely.
    - **Current Status:** The **authentication system is functionally complete**. Users can successfully sign up, log in, and log out using email and password, with proper session management handled by Supabase. Protected routes are in place.
    - **Integration:** This leverages **Supabase Auth**.
- **1.2 OAuth Integration (Google; Apple/Other Optional)**
    - **Purpose:** To offer convenient sign-up and login options through popular third-party services like Google, improving user experience and reducing friction.
    - **Current Status:** The **UI for Google OAuth is in place and ready**, but it is currently a "placeholder" or "stub". Live data integration requires further configuration of OAuth keys and settings in the Google Cloud Console and Supabase Auth providers. Apple support is considered optional for a future phase.
    - **Gap:** Completing the live OAuth configuration for Google People API.
- **1.3 Password Reset (Forgot/Change Password)**
    - **Purpose:** To provide users with a secure method to regain access to their accounts if they forget their password.
    - **Current Status:** This is a standard part of core user flows and is typically handled by **Supabase Auth's built-in functionalities**.
- **1.4 Profile Management (Name, Email, Password, Aura)**
    - **Purpose:** To allow users to manage their personal information and preferences within the app.
    - **Current Status:** User profiles are linked to **Supabase auth users** (using UUIDs for IDs) and **store essential information** such as first name, last name, assigned aura type, and aura quiz completion status. The `users` table schema supports these fields.
    - **Integration:** Data for user profiles is managed via Supabase `users` table and updated through Supabase client calls.
- **1.5 Account Deletion & Data Export**
    - **Purpose:** To ensure user privacy and compliance with data regulations (like GDPR) by allowing users to remove their data or export it.
    - **Current Status:** These features are part of the overall account settings and legal requirements but are not explicitly detailed as completed in the latest updates.

PHASE 2: Contact & Celebration Data Engine

This phase focuses on how BirthdayGen manages the people users want to celebrate and the dates of those celebrations.

- **2.1 Contact Management (Add/Edit/Delete, Relationships, Aura Assignment)**
    - **Purpose:** To provide a comprehensive system for users to store and organize their contacts, marking their birthdays and other relevant details.
    - **Current Status: Full CRUD operations (Add, Edit, Delete) for contacts are implemented and working**. The UI for adding a contact includes fields for name, email, date, relationship, and notes. Users can also **manually assign an aura type** to a contact.
    - **Integration:** All contact data is stored in **Supabase** via the `contacts` table.
- **2.2 Contact Import (CSV Upload, Google Contacts OAuth Integration)**
    - **Purpose:** To enable users to easily bring their existing contacts into BirthdayGen, reducing manual entry.
    - **Current Status: CSV import functionality is working** and includes validation. The UI for **Google Contacts import is in place**, but the live OAuth connection to the Google People API is a placeholder that requires configuration. Apple Contacts import is noted as an optional, advanced feature for the future.
    - **Gap:** Fully wiring up the Google People API integration for live contact imports.
- **2.3 Event & Holiday Data Model (Birthdays, Major Holidays, Custom Dates)**
    - **Purpose:** To manage various celebration types beyond just birthdays, encompassing a broader range of special occasions.
    - **Current Status:** The BirthdayGen UI **supports more than just birthdays**, with pre-filled events like "New Year's Day" and "Work Anniversary" already present. A **comprehensive holiday calendar with major holidays is created**, and these events appear alongside birthdays in the dashboard. Smart date calculation for upcoming celebrations is also implemented.
- **2.4 Calendar Sync Logic (Google/Apple Calendar Placeholder)**
    - **Purpose:** To integrate with external calendar services for seamless event tracking and reminders.
    - **Current Status:** This feature is currently a **placeholder**. There is **no live Google or Apple Calendar integration yet** for syncing events, though the UI could be extended for this.
    - **Gap:** Implementing the actual calendar synchronization.
- **2.5 RLS & Privacy Safeguards**
    - **Purpose:** To ensure that user data is secure and that users can only access and manage their own information, upholding privacy principles.
    - **Current Status: Supabase's Row Level Security (RLS) is enabled** on key tables like `users`, `contacts`, `cards`, `aura_quiz_responses`, and

`gift_recommendations`. Policies are in place to ensure users can only view, update, or insert their own data. The transition from integer to UUID for user IDs was specifically to ensure proper RLS handling with Supabase Auth.
    - **Integration:** This is natively handled by **Supabase's security features**.

PHASE 3: Aura Quiz & Personalization

This phase defines BirthdayGen's unique approach to deep personalization through an "aura" system.

- **3.1 Interactive Aura Quiz (Fire, Water, Earth, Air, Cosmic)**
    - **Purpose:** To playfully determine a user's or contact's personality type ("aura") for highly tailored recommendations.
    - **Current Status:** The **interactive aura quiz is complete, visually polished, clear, and delightful**. It guides users through a series of questions (e.g., 3-5 metaphorical questions) and assigns one of five aura types: Fire, Water, Earth, Air, or Cosmic.
    - **Known Issue/Fix:** There was a previous error with quiz results not saving (a 400 error on Supabase insert), but this **bug has been addressed and fixed**. Quiz results now save to the user's profile and responses table, supporting UUIDs.
- **3.2 Aura Assignment (Users & Contacts)**
    - **Purpose:** To associate an aura type with both the main user and their individual contacts for personalized interactions.
    - **Current Status:** Aura types are **visible in the dashboard** and can be **assigned per contact**. The quiz results directly update the user's and contact's aura types in the database.
- **3.3 Aura Profile Persistence (Supabase)**
    - **Purpose:** To ensure that the calculated aura types are stored and consistently used across user sessions and features.
    - **Current Status: Aura quiz results now successfully save to Supabase**, updating the user profile or contact record with the assigned aura type. This was a key fix in recent development.
    - **Integration:** Data persistence relies solely on **Supabase**.
- **3.4 Personalized Recommendations (Cards, Gifts, Templates)**
    - **Purpose:** To leverage aura types to inform and tailor the suggestions for cards, gifts, and design templates.
    - **Current Status: Aura results drive personalized card styles** (e.g., "Cosmic," "Fire," "Water" templates) and **gift recommendations**. BirthdayGen can generate gift recommendations based on aura types, with examples provided for

each aura type (e.g., "Adventure Experience Voucher" for Fire, "Spa Gift Set" for Water).
    - **Opportunity:** The system could evolve to use AI algorithms to analyze user behavior and preferences for even more relevant content and recommendations.

PHASE 4: AI Card Studio & Gifting

This phase encapsulates BirthdayGen's core offering: AI-powered card creation and intelligent gift suggestions.

- **4.1 Card Template Gallery (Cosmic, Fire, Water, Earth, Air, Holiday)**
    - **Purpose:** To provide users with a variety of design starting points for their personalized cards.
    - **Current Status:** A **template gallery is present**. Lovable claims there are currently 6 templates in the Card Studio, and that more can be expanded. Specific categories like "Cosmic," "Elegant," "Minimal," and "Playful" are defined in the schema, with additional aura-based and holiday themes introduced in prompts.
- **4.2 AI Card Generator (DALL-E 3 via Supabase Edge Function)**
    - **Purpose:** To allow users to create unique, custom card artwork using AI, based on their prompts or preferences.
    - **Current Status:** The **AI image generation feature is working with a valid OpenAI API key**, leveraging DALL-E 3 via a Supabase Edge Function. Users can describe a card, and DALL-E 3 will generate custom artwork. An intelligent fallback to placeholder images is implemented if the API is not configured or fails, with real-time status indicators. Confetti animations are added for successful image generation.
    - **Integration:** Uses **OpenAI DALL-E 3 API** via a **Supabase Edge Function**.
- **4.3 Card Customization (Stickers, Text, Emoji, Theme, Live Preview)**
    - **Purpose:** To give users granular control over the card's visual elements and messaging.
    - **Current Status:** The Card Studio offers **selectable templates, message fields, and a live preview section**. Users can **add fun emojis and stickers** to cards. The card updates in real-time as users edit the message and design.
    - **Known Gaps/Issues:** A significant issue remains: **custom card text does not currently appear on top of the generated image** in the preview/final card, and the **image itself is condensed to a small size**. This needs to be resolved for text to be visible and for the image to fill the preview area.
- **4.4 Card Scheduling & Auto-Send**

    - **Purpose:** To enable users to pre-schedule cards and messages for future delivery, supporting a "set-and-forget" automation model.
    - **Current Status:** The **UI for scheduling and sending cards is in place and ready**. Users can choose to send a card now or schedule it for a later date. The automation engine supports multi-tier celebration planning (Message Only, Card, or Card + Gift) with UI for rules, and settings can be saved to Supabase. A visual timeline/preview of upcoming auto-celebrations is planned.
    - **Gap:** The **actual auto-send logic for email/SMS/card delivery is not yet implemented** and still requires backend (CRON jobs/queues) or third-party service setup (e.g., Resend, Mailgun).
- **4.5 Gift Recommendation Engine (Aura-Based)**
    - **Purpose:** To provide personalized gift suggestions that align with the recipient's aura or personality.
    - **Current Status: Aura-based gift suggestions with themed categories are present**. The UI for recommendations is implemented and appears after the aura quiz. Examples of gifts generated based on aura types are defined (e.g., "Adventure Experience Voucher" for Fire aura).
    - **Integration:** The system includes a `gift_recommendations` table in Supabase.
    - **Gap:** The gift recommendations are currently **suggestions only**, with no live fulfillment or direct e-commerce/affiliate integration yet. The system needs to connect to real URLs/affiliate links.
- **4.6 Physical/Electronic Delivery (Email/SMS/Print Placeholder)**
    - **Purpose:** To offer various methods for delivering the personalized cards and gifts to recipients.
    - **Current Status:** The UI for "Send" buttons and scheduling delivery is in place. However, the **actual electronic delivery (via email or SMS) and physical printing/mailing services are not yet implemented**. These remain placeholders.
    - **Gap:** Integrating with email/SMS APIs (like Resend or Twilio) and potentially print-on-demand partners (like Printify).

BirthdayGen is envisioned as a **magical celebration automation platform** designed to eliminate the hassle of remembering and personalizing special moments [introductory context, not from sources]. It blends AI-powered personalization, thoughtful gifting, and seamless automation into one joyful user experience [introductory context, not from sources].

Here's an elaboration on the specified phases of the BirthdayGen project:

PHASE 5: Automation & Celebration Tiers

This phase focuses on BirthdayGen's core promise of making celebrations effortless through smart automation.

- **5.1 Automation Rules UI (Per-Contact & Group)**
    - **Purpose:** To allow users to configure automated celebration deliveries for individual contacts or entire groups.
    - **Current Status:** The user interface (UI) for setting up multi-tier celebrations with auto-send rules is **present** and **UI complete**. Users can select a "tier" (message, card, or card+gift) and enable auto-send. The automation engine allows setting rules based on contact groups or "relationship".
    - **Gap:** While the UI is ready, the actual **backend logic for auto-sending** emails, SMS, or cards still requires further development of CRON jobs or third-party service setup.
- **5.2 Celebration Tiers (Message, Card, Card + Gift)**
    - **Purpose:** To offer users flexible options for automated celebrations, ranging from a simple message to a full gift package.
    - **Current Status:** This feature is **implemented** in the UI, allowing users to choose between "Message only," "Card," or "Card + Gift" options for their automated celebrations.
    - **Gap:** The actual physical/electronic delivery and payment processing for premium "Card + Gift" tiers are not yet implemented.
- **5.3 Auto-Send Engine (Scheduling, Reminders)**
    - **Purpose:** To automate the delivery of celebrations and reminders based on user-defined schedules.
    - **Current Status:** The UI to "schedule and forget" recurring celebrations is in place, allowing users to preview, edit, and queue deliveries. Users can set auto-send on/off and pick date/frequency for automation settings. Email reminders for upcoming birthdays are planned via Supabase Functions or third-party services like Resend. In-app notifications are also part of the plan.
    - **Gap:** The actual **auto-send logic for emails/cards** still requires backend (CRON/queue) or third-party service setup. Scheduled jobs for reminders are noted as not yet built out.
- **5.4 Holiday Automation (Parallel to Birthdays)**
    - **Purpose:** To extend BirthdayGen's automation capabilities beyond just birthdays to include all major holidays and custom occasions.
    - **Current Status:** BirthdayGen's UI **supports more than just birthdays**, with pre-filled events like "New Year's Day" and "Work Anniversary" present. A comprehensive holiday calendar with major holidays (e.g., Christmas, Halloween) is created, and these events appear alongside birthdays in the dashboard. The UI also allows setting up automated messages/cards for popular holidays.

    - **Gap:** Auto-detection of public holidays and support for custom milestones or recurring non-birthday events might need further development.

PHASE 6: Dashboard & User Experience

This phase defines the primary user interface and how users interact with BirthdayGen, focusing on a delightful and intuitive journey.

- **6.1 Main Dashboard (Upcoming Events, Holidays, Automation Status)**
    - **Purpose:** To provide users with a central hub for all their celebration needs, offering a quick overview of upcoming events and automation status.
    - **Current Status:** The dashboard is described as a **"personalized hub"** that shows upcoming birthdays and now holidays. It is designed with a **card-based layout** showing upcoming celebrations and includes a "Today's Celebrations" highlight. The UI also indicates **automation status**.
    - **Gap:** While the UI is present, real data-driven views for automation rules and full Google/Apple imports are still pending.
- **6.2 Tabbed Views (Events, Contacts, Automation, Auras)**
    - **Purpose:** To organize the dashboard content logically, making it easy for users to navigate between different aspects of the platform.
    - **Current Status:** The dashboard has been updated to feature a **tabbed interface** with sections for Events, Contacts, Automation, and Auras.
- **6.3 Micro-Interactions (Confetti, Animations, Status Feedback)**
    - **Purpose:** To enhance the user experience with subtle, delightful visual feedback, reinforcing the "magical" and "joyful" brand identity.
    - **Current Status:** BirthdayGen's UI features **vibrant gradients, confetti animations, and micro-interactions** like bounce/fade-in effects. **Confetti effects** are added for celebrations and successful AI image generation. The platform uses **branded toasts and error handling** throughout for user feedback.
    - **Gap:** While present, more polish and richer transitions could be added.
- **6.4 Onboarding & Tooltips**
    - **Purpose:** To guide new users effectively through the application's features and unique value propositions.
    - **Current Status:** An **onboarding experience** is included in the full project task list, which can prompt users to add their first contact, take the aura quiz (optional), and set notification preferences. Onboarding customization allows users to pick zodiac, style, and import birthdays.
    - **Gap:** The current onboarding/empty state flows are described as basic, suggesting a need for more comprehensive onboarding tooltips or walkthroughs.

PHASE 7: Admin & Data Integrity

This phase ensures the reliability, security, and maintainability of the BirthdayGen platform, including oversight capabilities.

- **7.1 Admin Dashboard (User/Content Oversight, Analytics—Future)**
  - **Purpose:** To provide administrators (both BirthdayGen internal and B2B HR managers) with tools to oversee user data, content, and system performance.
  - **Current Status:** An admin panel is listed as an **optional future feature**, and it is currently **"not built"**. However, for the B2B use case, an HR dashboard is planned to manage employees/celebrations, with potential for analytics/reporting.
- **7.2 Supabase Table Management (RLS, Policies, Backups)**
  - **Purpose:** To secure user data, ensure privacy, and maintain database health.
  - **Current Status: Supabase's Row Level Security (RLS) is enabled** on key tables like `users`, `contacts`, `cards`, `aura_quiz_responses`, and `gift_recommendations`. Policies are in place to ensure users can only view, update, or insert their own data. The transition to UUIDs for user IDs was specifically to ensure proper RLS handling.
  - **Gap:** While RLS is addressed, the sources do not explicitly detail backup strategies for Supabase, which is a standard data integrity practice.
- **7.3 Documentation & Microtask Breakdown**
  - **Purpose:** To provide clear, detailed instructions for development and maintenance, ensuring consistent progress and easy onboarding for new team members.
  - **Current Status:** The conversation history itself functions as a comprehensive documentation effort, with **detailed task breakdowns and microtasks** provided for the project. This includes a "Birthdaygen Rebuild Plan" structured with "realistic sprint deadlines" and a "simplified prompt playbook".
- **7.4 Error Handling, Compliance & Security Automation**
  - **Purpose:** To build a robust and trustworthy platform that gracefully handles errors, protects user data, and complies with regulations.
  - **Current Status: Robust error handling** with `try/catch` blocks and user-friendly "branded toasts" is a key enhancement. Security measures like **RLS** are in place, and PII (Personally Identifiable Information) is encrypted at rest. Account deletion and data export are planned for **GDPR compliance** [1.5 in original prompt, 247].
  - **Gap:** While ethical AI and data pledges are made (minimal data, transparent use, bias guardrails), specific security automation for ongoing compliance beyond RLS is not fully detailed.

PHASE 8: Marketing & Community

This phase outlines how BirthdayGen will attract users, foster engagement, and grow its user base and revenue.

- **8.1 Integrated Marketing Dashboard (Analytics, Email List Placeholder)**
    - **Purpose:** To provide insights into marketing efforts and track user engagement for data-driven growth.
    - **Current Status: Basic analytics tracking** for user actions like card creation and gift selection is part of the MVP completion plan. A marketing dashboard is a planned feature, with an "Email List Placeholder".
    - **Gap:** The actual integration of content emails or social distribution is still missing, requiring mailer/API and social post schedulers. PostHog is suggested for analytics, funnels, A/B testing, and feature flags.
- **8.2 Content Generation Tools (Blog, Templates, Social Media)**
    - **Purpose:** To automatically generate engaging content that promotes BirthdayGen and its features across various channels.
    - **Current Status: Automated content generators** are planned for "Today in Birthday History" and "Zodiac Birthdays of the Week". Blog posts are part of the marketing strategy, with specific SEO titles and visual prompts. A "social content suite" includes output for Instagram, TikTok, Facebook, X (Twitter), LinkedIn, and Pinterest with visual prompts and format justifications. Canva Pro is utilized for content planning and creating visual assets.
    - **Gap:** Automated scrapers/summarizers are needed for "Today in Birthday History", and a proper Markdown-to-post integration or CMS is required for the blog/email funnel.
- **8.3 Growth Loops (Referrals, Invites, Viral Hooks)**
    - **Purpose:** To organically expand the user base by encouraging sharing and rewarding engagement.
    - **Current Status: Social sharing capabilities** for completed cards and gift selections are part of the MVP finalization. A **referral loop** that gives users credits for sharing a discount link is suggested, utilizing Firebase Dynamic Links. The "Made with BirthdayGen" footer on delivered cards is intended to serve as a viral hook. Gamified elements like "streak rewards" and social leaderboards are also planned to enhance engagement.
- **8.4 Affiliate, Premium & Shop Integration (Roadmap)**
    - **Purpose:** To diversify revenue streams through e-commerce, partnerships, and tiered access to advanced features.
    - **Current Status: Affiliate revenue** is a key stream, with Amazon and Etsy partner integrations mentioned. Freemium/premium tiers are planned to unlock exclusive designs, insights, and concierge services. The "Gift Oracle" is designed for curated gifting with affiliate links.
    - **Gap:** Stripe integration for payments is listed as not completed. Affiliate product CTAs and embedding product catalogs are still missing. The concierge tier product and scheduling logic still need scoping. Physical card/gift sending and email automation for reminders are future enhancements needed.