Product Requirement Document (PRD)

Product Name: AI Mates
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1. Purpose

AI Mates aims to reinvent online dating by reducing friction in the matching process and fostering authentic connections. Instead of users engaging in endless small talk, AI Mates leverages artificial intelligence to pre-generate meaningful conversation insights and compatibility scores. This creates more efficient, engaging, and authentic dating experiences.

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2. Background & Problem Statement

Current dating apps often face two key problems:

1. **Shallow engagement at the start:** Small talk dominates initial interactions, leading to drop-offs.
2. **Overwhelming choice:** Users struggle to evaluate compatibility quickly across many profiles.

AI Mates Solution:
Introduce a **Pre-Matching Algorithm** that generates three elements for each potential match:

1. **Simulated Conversation** between User A and User B.
2. **Benevolent Summary** of that conversation (visible to users).
3. **Compatibility Score (1–10)** based on profile alignment.

Instead of raw profiles, users first see the **summary** and **compatibility score**, enabling them to skip superficial interactions and focus on meaningful matches.

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3. Goals & Objectives

- **Primary Goal:** Build a working prototype showcasing the Pre-Matching Algorithm.
- **Objectives:**
    - Deliver high-quality summaries that feel positive (make sure that it is maybe at least neutral but not hiding stuff), authentic, and personalized.

- Ensure compatibility scores are transparent, intuitive, and reliable.
- Create incentives (worthwhile exchange of data for more optimal matching that doesn't feel intrusive) for users to provide richer profile data (since better data → better summaries & matches).
- Reduce friction in early conversations and increase match conversion rate (from online match to real life matching).

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4. Key Features

4.1 Pre-Matching Algorithm (Core)

- **Input:** User A and User B's dating profiles (textual and categorical data).
- **Processing:**
  - Generate a **simulated conversation** (natural dialogue style).
  - Create a **benevolent summary** of the conversation (short, 2–4 sentences, highlighting shared interests, values, and humor).
  - Calculate a reliable **compatibility score** from 1–10 based on overlap in preferences, lifestyle, and interests. → This might mean that it is a good idea to test various LLMs before deciding and then focusing on one LLM.
- **Output:** Summary + Score (shown to users), Conversation (internal use for validation/testing).

4.2 User Experience (Prototype Scope)

- **Profile Creation:** Users enter descriptive and structured data (interests, values, lifestyle).
- **Match Discovery:** Instead of profile browsing, users see:
  - Benevolent summary of a simulated conversation.
  - Compatibility score (1–10).
- **Engagement Flow:**
  - If interested → unlock full profile & start chatting.
  - If not interested → move on to next suggested match.

4.3 Matching Transparency

- Short explanation of what factors influenced the compatibility score (e.g., "Shared love for travel and music").

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5. Success Metrics

- **Algorithm Quality:**
    - 80% of summaries rated as authentic & engaging by test users.
    - Compatibility scores correlate positively with user satisfaction (measured via survey).
- **User Behavior:**
    - Higher acceptance rate of suggested matches compared to baseline profile-swiping. → Optionale Feedbackmöglichkeit wieso der Match nicht zustande kam oder Chat nicht zufriedenstellend war (optional mit Dank)
    - Reduced early-conversation drop-off rate.
- **Engagement:**
    - Increased average message length & depth after initial match.

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6. Technical Requirements

6.1 Algorithm Requirements

- **NLP-based simulation:** Use large language models to generate realistic dialogues.
- **Summary Generation:** Must always be benevolent, highlighting common ground (avoid sarcasm/negativity).
- **Scoring System:**
    - Inputs: structured profile attributes + free-text descriptions.
    - Output: integer from 1–10.
    - Transparent weighting (e.g., interests: 40%, lifestyle: 30%, values: 30%).

6.2 Platform Requirements (Prototype Scope)

- **Frontend:** Mobile-first web prototype (simple UX to display matches).
- **Backend:**
    - User profile storage.
    - Matching engine with algorithm execution.
    - Secure data handling (privacy-first).

6.3 Non-Functional Requirements

- **Performance:** Summary + score generated within 5 seconds.
- **Scalability:** Prototype should support at least 1,000 concurrent users.
- **Privacy & Safety:**
    - No personal data leakage in generated summaries.
    - AI moderation to filter inappropriate content.

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7. Risks & Challenges

- **Quality of AI output:** Risk of generic or unrealistic summaries.
- **Bias in scoring:** Overweighting certain attributes could skew matches.
- **User trust:** Users may not trust AI-based compatibility without transparency.
- **Content safety:** Generated conversations must avoid sensitive or offensive outputs.

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8. Future Considerations

- Expansion to multi-modal profiles (images, voice).
- Continuous learning based on actual chat outcomes.
- More nuanced compatibility dimensions (emotional style, humor type).
- Gamified onboarding to encourage detailed profile input.

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9. Timeline (Prototype)

- **Week 1–2:** Define algorithm logic & scoring framework.
- **Week 3–5:** Implement simulated conversation + benevolent summary generation.
- **Week 6–7:** Integrate compatibility scoring engine.
- **Week 8:** Build lightweight frontend prototype.
- **Week 9:** Internal testing & user feedback.
- **Week 10:** Prototype ready for stakeholder demo.