ViewVoyage : Requirement Analysis

1. Customer Journey Map

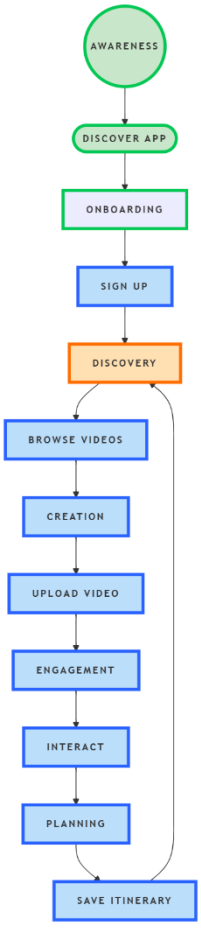
The customer journey map outlines the experience of ViewVoyage users (travel enthusiasts and content creators) from onboarding to active engagement, highlighting touchpoints, emotions, and opportunities for improvement.

Stages and Touchpoints

- **Awareness**:
    - **Touchpoints**: App store, social media ads, influencer promotions.
    - **User **Actions**: User discovers ViewVoyage via targeted ads or word-of-mouth.
    - **Emotions**: Curious, seeking inspiration for travel content.
- **Onboarding**:
    - **Touchpoints**: App download, sign-up, profile setup.
    - **Actions**: User installs app, creates account, selects travel interests (e.g., adventure, culture), and sets location.
    - **Emotions**: Excited, eager to explore, but may feel overwhelmed if onboarding is complex.
- **Discovery**:
    - **Touchpoints**: Home feed, explore map, search.
    - **Actions**: User browses trending videos, explores by location, or searches for specific destinations.
    - **Emotions**: Inspired, engaged, but frustrated if content isn't relevant.
- **Creation**:
    - **Touchpoints**: Video upload, in-app editing tools, geotagging.
    - **Actions**: User records/uploads a video, edits with filters or captions, and publishes with location tags.
    - **Emotions**: Creative, accomplished, but may feel discouraged if tools are unintuitive.
- **Engagement**:
    - **Touchpoints**: Likes, comments, follows, travel challenges.

    - **Actions**: User interacts with videos, follows creators, or joins community challenges.
    - **Emotions**: Connected, motivated, but disengaged if interactions lack depth.
- **Planning**:
    - **Touchpoints**: Itinerary planner, saved videos.
    - **Actions**: User saves videos to create travel itineraries and shares them with others.
    - **Emotions**: Organized, excited, but frustrated if saving/sharing is clunky.

Diagram: Customer Journey Map



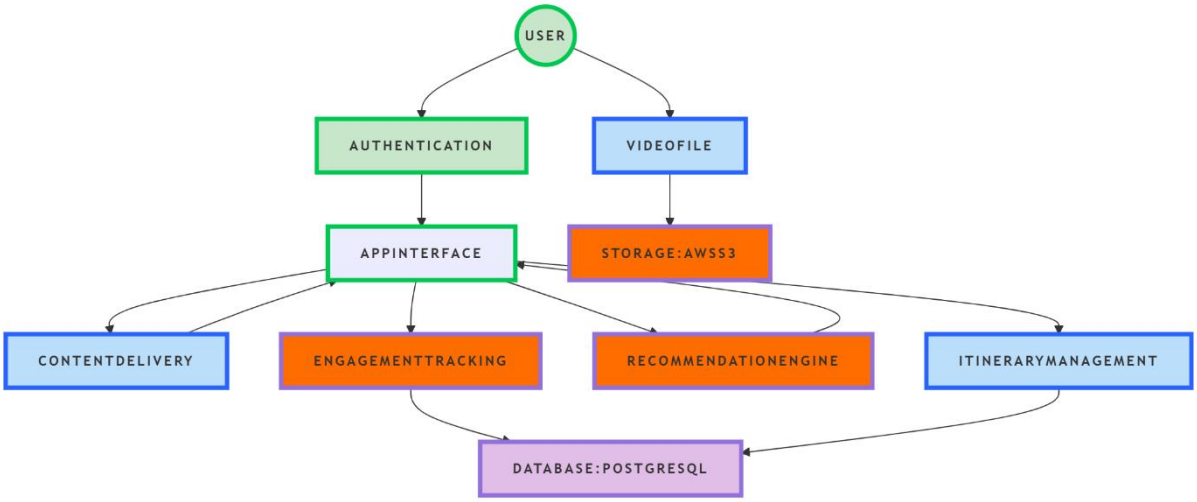
2. Dataflow Diagram

The dataflow diagram illustrates how data moves through the ViewVoyage system, from user inputs to backend processing and output.

Key Processes

- **User Authentication:** Validates user credentials and generates access tokens.
- **Video Upload/Processing:** Handles video uploads, encoding, and storage.
- **Content Delivery:** Streams videos to users based on preferences or location.
- **Engagement Tracking:** Records like, comments, and follows for analytics.
- **Recommendation Engine:** Analyses user behaviour to suggest relevant content.
- Itinerary Management: Stores and retrieves user-created travel itineraries.

Diagram: Dataflow Diagram



3. User Stories

User stories capture the needs of ViewVoyage's target users (travel enthusiasts, content creators, and tourism businesses) to guide development.

Travel Enthusiast

- As a travel enthusiast, I want to browse short travel videos by destination, so I can find inspiration for my next trip.
- As a travel enthusiast, I want to save videos to a personalized itinerary, so I can plan my travels efficiently.
- As a travel enthusiast, I want personalized video recommendations, so I can discover content that matches my interests.

Content Creator

- As a content creator, I want easy-to-use video editing tools, so I can create professional-looking travel videos within the app.
- As a content creator, I want to geotag my videos, so viewers can explore the exact locations I filmed.
- As a content creator, I want analytics on my videos' performance, so I can understand my audience and improve my content.

Tourism Business

- As a tourism business, I want to promote my services through sponsored videos, so I can reach potential customers.
- As a tourism business, I want to collaborate with creators, so I can showcase authentic experiences at my destination.

4. Solution Requirements

Functional Requirements

- **Video Management:**
  - Upload and stream videos (30 seconds to 5 minutes, 1080p/4K).
  - In-app editing (trim, filters, captions, music).
  - Geotagging for location-based discovery.
- **Discovery:**
  - Map-based video browsing using Google Maps SDK.
  - Search by destination, creator, or hashtag.
  - Personalized feed based on user preferences and behavior.
- **Engagement:**
  - Like, comment, share, and follow functionalities.
  - Community-driven "travel challenges" to boost participation.
- **Itinerary Planner:**
  - Save videos to custom itineraries.
  - Share itineraries via link or in-app.
- **Creator Tools:**
  - Analytics dashboard (views, engagement, demographics).
  - Monetization via subscriptions or sponsored content.
- **Moderation:**
  - AI-based content filtering for inappropriate uploads.
  - User reporting for community moderation.

Non-Functional Requirements

- **Performance:**
  - Video streaming with <2-second latency for 90% of users.
  - App load time <3 seconds on average.
- **Scalability:**
  - Support 100,000 daily active users within 12 months.
  - Handle 1,000 concurrent video uploads.

- **Security:**
  - End-to-end encryption for user data.
  - JWT-based authentication for API access.
- **Usability:**
  - Intuitive UI with <3 clicks to key actions (e.g., upload, browse).
  - Accessibility support (screen readers, high-contrast mode).
- **Reliability:**
  - 99.9% uptime for core services.
  - Automated backups every 24 hours.

5. Technology Stack

The technology stack is chosen for scalability, developer productivity, and user experience.

Frontend

- **React Native:** Cross-platform mobile app for iOS and Android.
- **Google Maps SDK:** Location-based video discovery.
- **Video.js:** Customizable video player for streaming.

Backend

- **Node.js + Express:** RESTful APIs for microservices.
- **Kubernetes:** Orchestrates microservices for scalability.
- **Kafka:** Message queue for asynchronous tasks (e.g., video encoding).
- **API Gateway:** AWS API Gateway for routing and rate limiting.

Data Storage

- **PostgreSQL:** Relational database for user profiles, itineraries.
- **AWS S3:** Object storage for videos and images.
- **Redis:** In-memory cache for trending videos and sessions.

AI/ML

- **TensorFlow:** Recommendation engine for personalized content.
- **AWS Recognition:** Content moderation for inappropriate uploads.

Third-Party Services

- **Firebase:** Authentication (OAuth, email, social login).
- **Mixpanel:** User behaviour analytics.
- **OneSignal:** Push notifications for engagement.
- **CloudFront:** CDN for low-latency video delivery.

DevOps

- **AWS:** Cloud infrastructure (EC2, RDS, S3).

- **Docker:** Containerization for consistent deployments.
- **GitHub Actions:** CI/CD pipeline for automated testing and deployment.
- **Sentry:** Error tracking and performance monitoring.

Diagram: Technology Stack