Earth Tour Client

Explore the globe through stunning 3D flight animations

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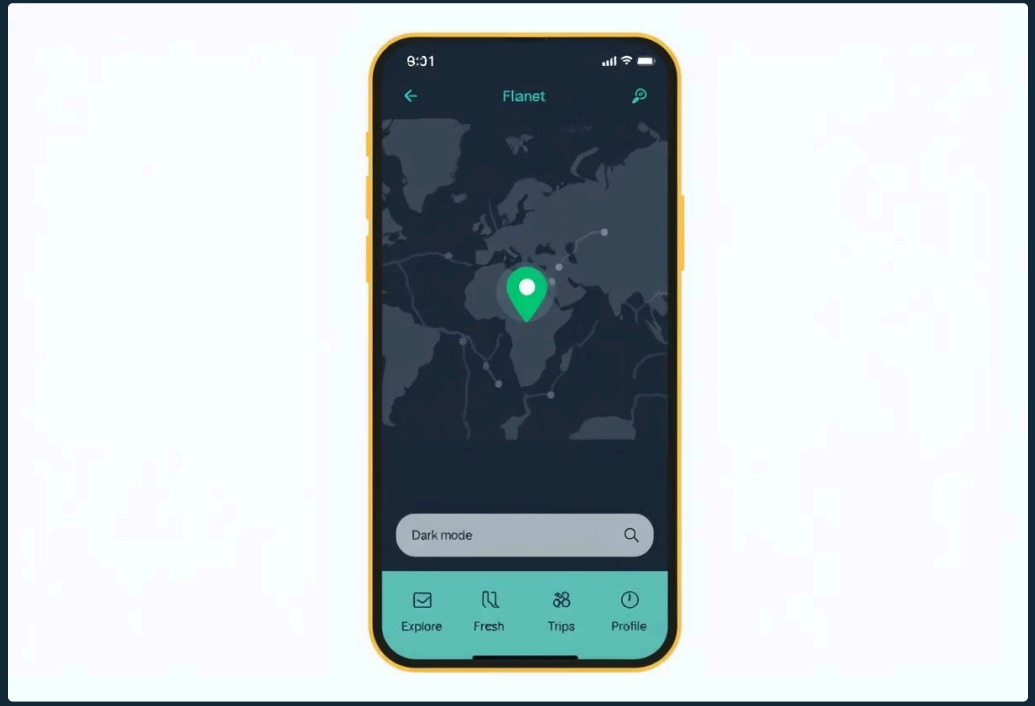
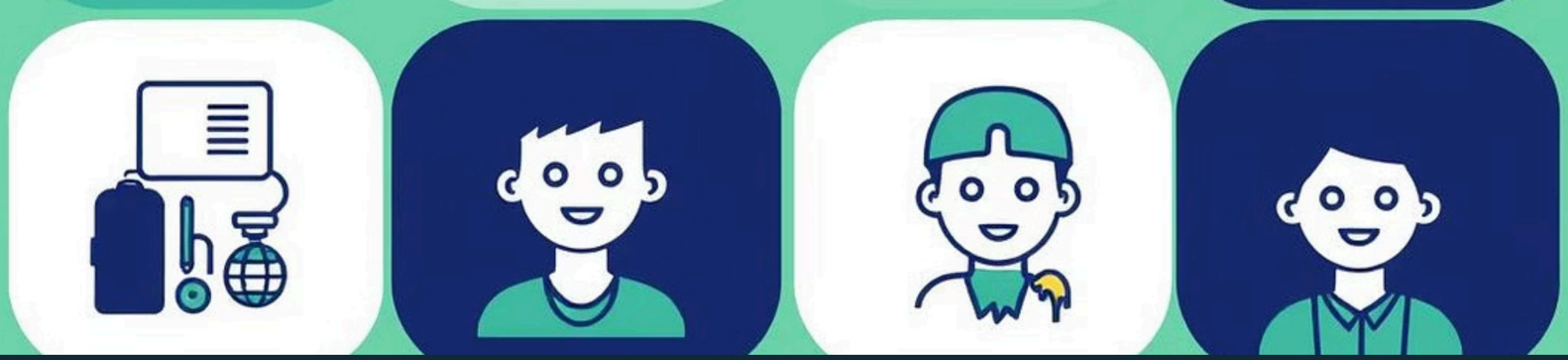
Problem & Inspiration

Static maps don't tell a story

Bring the globe alive through motion

Inspired by space visualizations & cinematic flight maps





Purpose & Audience

Purpose

Create personalized Earth animations fast

Audience

- Educators
- Content creators
- Travel influencers
- Students
- Businesses

App Architecture

Model

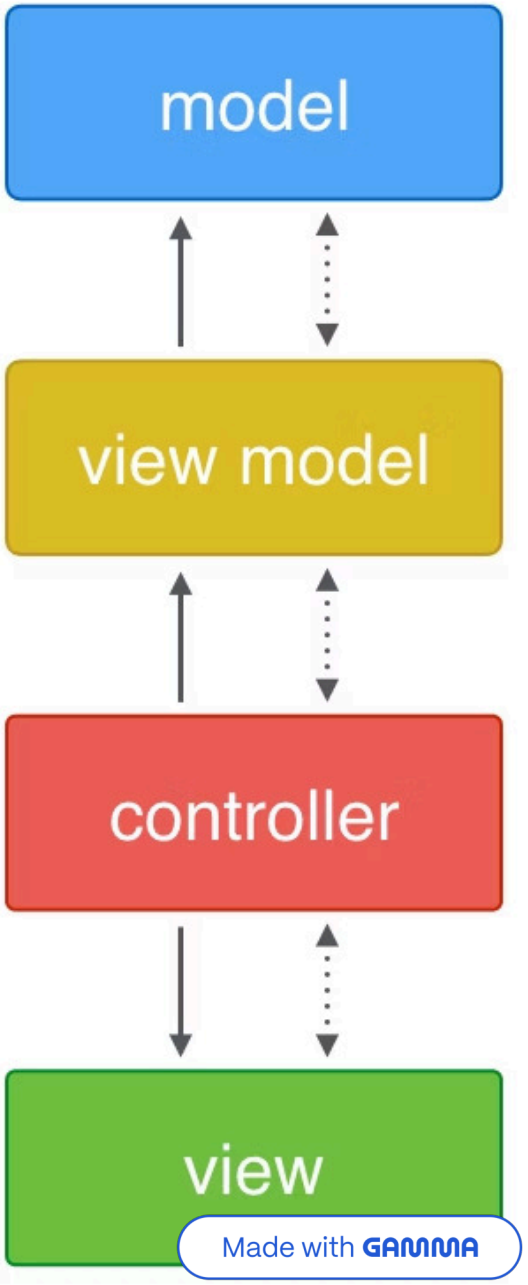
Data sources & repositories

ViewModel

Logic + Coroutines for async jobs

View

Jetpack Compose UI elements



Core Features

🌍 Location Selection

Predefined and custom coordinates

🎥 Video Quality

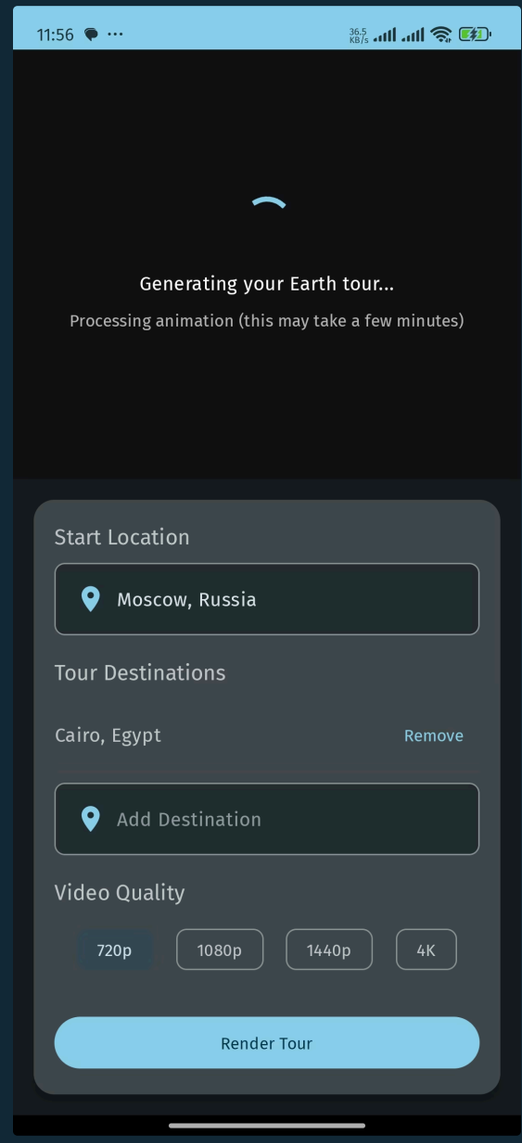
720p to 4K resolution options

🛰️ Async Job Tracking

Real-time status & download

UI/UX Design

- **Streamlined 3-step user flow:** Select, Request, Watch
- **Minimalist controls & clear video playback**
- **Optimized for vertical video**
- **Location input flexibility**
- **Real-time job tracking**
- **Light and dark mode**



Tech Stack

Frontend

Kotlin, Jetpack Compose, Material3

Media

ExoPlayer, Media3

Backend

FastAPI, Python, Blender rendering

Infrastructure

Retrofit, OkHttp, SharedPreferences

Backend Integration

POST /generate-animation

Submit flight path & quality

GET /job/{jobId}

Track rendering status

GET /videos/{filename}

Download ready video

Development Timeline

1 — Week 1

UI/UX mockups & prototyping

2 — Weeks 2-3

API integration & async logic

3 — Week 4

Blender rendering backend setup

4 — Week 5

Testing, polish, and optimization

Challenges & Solutions

Async status updates

Polling delay, managing job states

Math

Math is hard

Working with models

Loading textures, setting shaders

Solutions

- Coroutines & structured polling
- Queued rendering & caching
- Learning Math, especially Geometry
- Still in fixing stage

Future Improvements

User Profiles

Allow users to save their customized Earth tours for easy access.

Atmospheric Effects

Add dynamic clouds and realistic time-of-day lighting for immersion.

Map Overlays

Include landmark labels and additional map layers for clarity.

Web App Version

Expand accessibility with a browser-based platform for all users.