
CS651 - Web Systems

Vintage Vision

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Overview

Web Application hosted on Google GAE to analyze user-selected photographs from their google photos account.
The analysis will include:

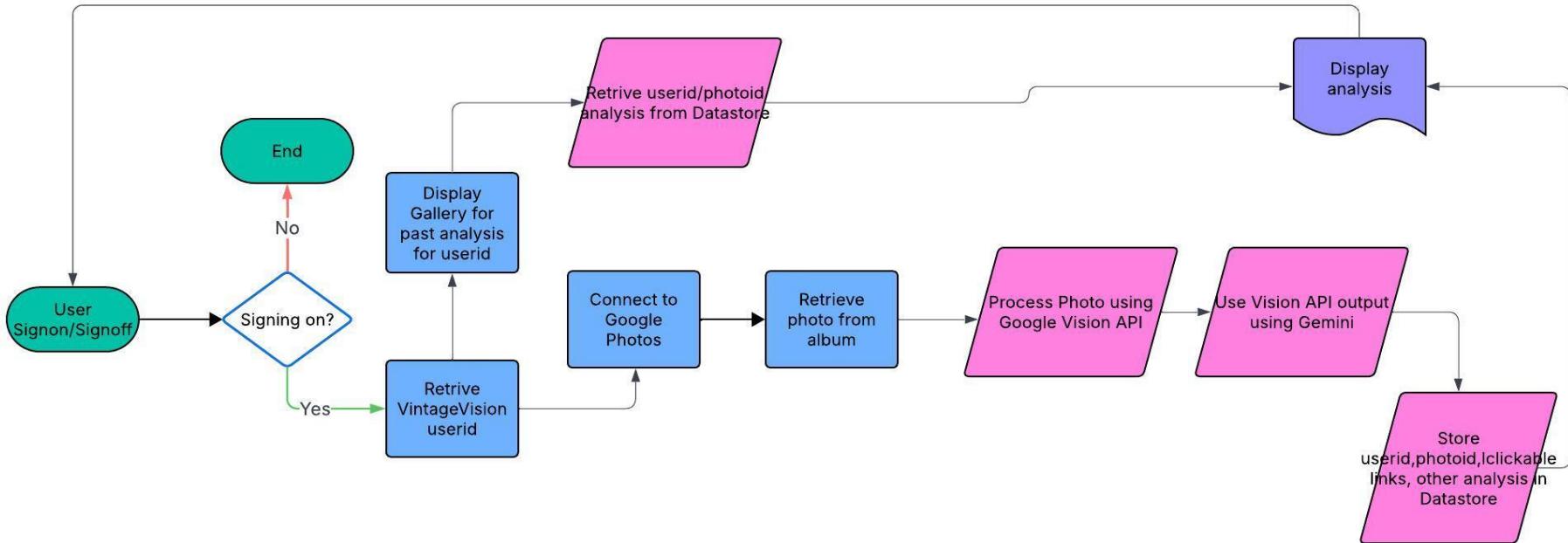
- Era or time when it was in fashion
 - Type of fashion
 - Explanation of the style
 - Clickable search queries and
 - Shopping tips
-

Technology

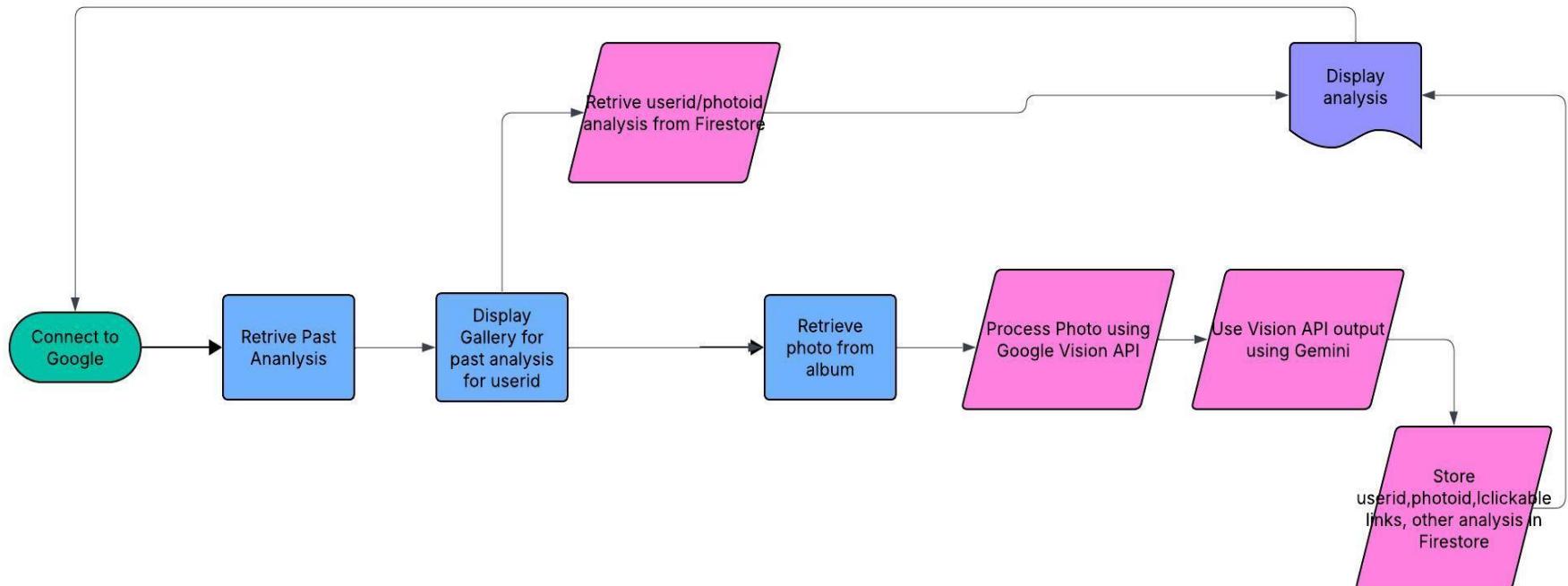
The app was built using the following technology:

- HTML, CSS, Javascript, React, [Node.Js](#), Express
 - Google OAuth 2.0
 - Google APIs including photopicker, Vision, Gemini, Firestore, Axios
 - Hosted on Google App Engine Standard Environment
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Initial Proposal



Implementation



Authentication Flow

Steps:

1. User signs in to their google account
 2. Google OAuth end-point gets confirmation for access to user profile and photos
 3. Http only cookies are stored and front end loads dashboard
 4. User can view previous results or pick new photos
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Firestore users collection

The screenshot shows the Google Cloud Firestore interface. The left sidebar includes options for Firestore Studio, Security, Indexes, Import/Export, Disaster Recovery, Time-to-live (TTL), Insights (Usage, Query insights, Monitoring, Key Visualizer), and a Help section. The main area displays a database named "vintagevision". Under the "users" collection, a document with the ID "115800105938337082531" is selected. The document details are as follows:

Field	Type	Value
createdAt	Timestamp	December 1, 2025 at 9:06:45.278 PM UTC-8
email	String	"branson019@gmail.com"
googleUserId	String	"115800105938337082531"
lastLoginAt	Timestamp	December 1, 2025 at 9:06:45.278 PM UTC-8
name	String	"Haoran Li"
picture	String	"https://lh3.googleusercontent.com/a/ACg8ocLGQuHbkKc3y..."

Firestore users collection

vintagevision	users	116611520161433500772
+ Start collection	+ Add document	+ Start collection
results	115800105938337082531	+ Add field
userPhotos	116611520161433500772	createdAt: December 1, 2025 at 10:17:52.402 PM UTC-8 email: "vinapptester@gmail.com" googleUserId: "116611520161433500772" lastLoginAt: December 1, 2025 at 10:17:52.402 PM UTC-8 name: "Vinapp Tester" picture: "https://lh3.googleusercontent.com/a/ACg8ocLmv0dCwnaS..."
users	>	

userPhotos Collection

The screenshot shows the Google Cloud Firestore console interface. The URL in the address bar is `https://console.cloud.google.com/firestore/databases/vintagevision/data/panel/userPhotos/IFEJDHFGGcZUuytrKFJK?authuser=2&project=alpine-fin-473918-n3`. The search bar contains "fires". The navigation bar shows "First Project" and "Database vintagevision". The left sidebar has "All databases > Database vintagevision". The main area shows "Panel view" and "Query builder". A path is shown: "/ > userPhotos > IFEJDHFGGcZUuytrKFJK". The left sidebar lists "vintagevision" (with "+ Start collection"), "results" (with "userPhotos" selected), and "users". The middle section shows "userPhotos" (with "+ Add document") and a specific document "IFEJDHFGGcZUuytrKFJK" (selected). The right section shows the document details:

baseURL:	" https://lh3.googleusercontent.com/ADWS-gduNx0EMO...
createdAt:	December 1, 2025 at 9:07:04.393 PM UTC-8
filename:	"3.jpg"
mimeType:	"image/jpeg"
photoId:	"AGINBGUCpYVEGD_ZNO0558s03vHLGk6sELVQl7s0FLKjca..."
sessionId:	"cb2bd10a-460b-44d0-ae2b-d9cd8ddb2fc"
source:	"google_photos_picker"
status:	"pending"
type:	"PHOTO"

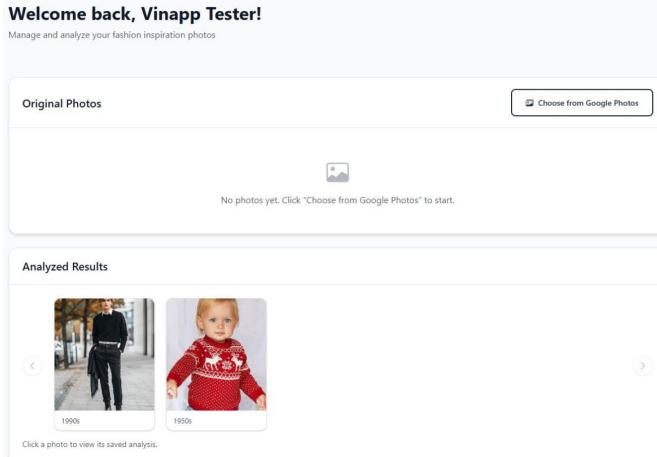
results collection

The screenshot shows the Google Firestore console interface. At the top, there's a navigation bar with a star icon, a copy icon, a search bar containing 'Search', and other icons for refresh, settings, and help. Below the navigation bar, the URL is visible: `google.com.firebaseio/database/vintagevision/data/panel/results/115800105938337082531_1764652043201_cq3glxh?authuser=2&project=alpine-fin-473918-n3`. The main area shows a hierarchical database structure under the database 'vintagevision'. On the left, there are collections: 'vintagevision' (selected), 'results' (highlighted with a blue border), 'userPhotos', and 'users'. On the right, the 'results' collection is expanded, showing a single document with the ID '115800105938337082531_1764652043201_cq3glxh'. The document details are as follows:

Path	Value
analyzedAt	December 1, 2025 at 9:07:23.201 PM UTC-8
baseURL	https://lh3.googleusercontent.com/ppa/ADWS-gdulNx0E...
geminiResult	<ul style="list-style-type: none">era_primary: "1970s"rationale: "The short length, sheer ruffled bodice, and flowy bell..."
search_queries	<ul style="list-style-type: none">en

Dashboard

After authentication, user lands on the dashboard



Sample Analysis

Analysis

VintageVision

Vintage insights

Primary era: 1990s

Style tags: Minimalist, Smart Casual, Refined Grunge, Preppy-inspired

Top-3 candidates

- 1990s — Minimalist / Refined Grunge 80%
Monochromatic palette, layering, combat boots, and the hairstyle align with a polished 90s aesthetic.
- 1980s — New Wave / Preppy 65%
Darker palettes, utilitarian boots, and sweater-over-shirt layering have some overlap with this era.
- 1950s — Ivy League / Preppy 50%
The classic sweater-over-shirt and tailored trousers fit, but the sleek combat boots are a departure.

Why
Monochromatic palette, layered sweater, and sleek combat boots reflect refined 1990s minimalist style. The hairstyle also fits this era.

Search queries

- Vintage 90s men's minimalist sweater
- 90s refined grunge menswear
- Black crewneck sweater white shirt men
- Slim tailored black trousers cuffed
- Sleek black combat boots men's vintage style
- Monochromatic 90s menswear inspiration
- Vintage 90s preppy grunge men
- High-waisted slim trousers men

Your photo



Analyze another image

Analysis Pipeline

Vision API does image detection, prominent colors, and extracts:

- Patterns, Colors, Objects

Gemini uses this information, along with image and prompt to produce:

- JSON formatted results
-

Firestore

There are three JSON object collections in Firestore for this app:

1. User - authenticated users
2. Userphotos - userid, photo url, timestamp
3. Results - contains Vision and Gemini results

Caveats and Enhancements

- Caveat - Google photo urls stored in results expire after a certain amount of time leaving the dashboard with blank photo spaces for analyzed images.
- Enhancement Needed - When user logs in, delete documents from results and userPhotos to eliminate stale urls.