

# Google Ads Account Manager AI Agent

Complete Documentation

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# Table of Contents

## **01 User Guide**

### **1. Google Ads Account Manager - AI Agent**

[Comprehensive User Guide](#)

[Table of Contents](#)

[Overview](#)

[Key Features](#)

[Target Audience](#)

[System Architecture & Integrations](#)

[Core Technologies](#)

[Data Flow](#)

[Integration Details](#)

[Getting Started](#)

[Prerequisites](#)

[Initial Setup](#)

[First Time Access](#)

[Web App Pages Guide](#)

■ [Campaign Analysis](#)

■ [Ad Copy Optimization](#)

■ [Keyword Research](#)

■ [Biweekly Reports](#)

■ [Ask Claude](#)

■ [Create Account](#)

■ [Create Campaign](#)

■ [Help Center](#)

[Change Tracking System](#)

[Overview](#)

[Two Methods](#)

[How Changelog Helps Claude](#)

[Changelog Format](#)

[Best Practices](#)

[Campaign Analysis](#)

[Change Tracking](#)

[Report Generation](#)

[Model Selection](#)

[Troubleshooting](#)

[Connection Issues](#)

[Analysis Hanging](#)

[No Campaign Data](#)

[Change Detection Not Working](#)

[PDF Generation Errors](#)

[Google Drive Upload Fails](#)

[Additional Resources](#)

## **02 Setup**

### **2. Setup Guide**

[Prerequisites](#)

[Step 1: Install Python Dependencies](#)

[Create Virtual Environment](#)

[Navigate to project directory](#)

[Create virtual environment](#)

[Activate virtual environment](#)

[Install Packages](#)

[Step 2: Google Ads API Setup](#)

[Get Developer Token](#)

[Get OAuth2 Credentials](#)

[Get Customer ID](#)

[Step 3: Claude API Setup](#)

[Step 4: Configure Environment Variables](#)

[Google Ads API Credentials](#)

[Claude API](#)

[Optional: Default Claude model](#)

[Step 5: Authenticate Google Ads API](#)

[Revoke existing tokens](#)

[Re-authenticate](#)

[Step 6: Verify Setup](#)

[Activate virtual environment \(if not already active\)](#)

[Run the analyzer](#)

[Troubleshooting](#)

[Authentication Issues](#)

[Check .env file has all required fields](#)

[API Access Issues](#)

[Claude API Issues](#)

[Python/Environment Issues](#)

[File Permission Issues](#)

[Multi-Account Setup \(MCC\)](#)

[Security Best Practices](#)

[Next Steps](#)

[Getting Help](#)

## **03 Streamlit Deployment**

### **3. Streamlit Cloud Deployment Guide**

[Prerequisites](#)

[Step 1: Push to GitHub](#)

[Step 2: Configure Streamlit Cloud](#)

[Step 3: Configure Secrets](#)

[Required Secrets](#)

[Important Notes](#)

[Step 4: Deploy](#)

[Troubleshooting](#)  
[Authentication Errors](#)  
[Common Issues](#)  
[Updating the App](#)  
[Main File Path](#)

## **05 Usage**

### **5. Usage Guide (CLI - Legacy)**

[Quick Start](#)  
[Step-by-Step Usage](#)  
[Step 1: Select Customer Account](#)  
[Step 2: Select Campaign](#)  
[Step 3: Set Date Range](#)  
[Step 4: Optimization Goals](#)  
[Step 5: Analysis](#)  
[Step 6: Review Recommendations](#)  
[Step 7: Save Results \(Optional\)](#)  
[Model Selection](#)  
[Example Output](#)  
[Best Practices](#)  
[1. Regular Analysis](#)  
[2. Date Range Selection](#)  
[3. Campaign Selection](#)  
[4. Goal Customization](#)  
[5. Implementation](#)  
[Advanced Usage](#)  
[Custom Model Selection](#)  
[Analyzing Multiple Accounts](#)  
[Exporting for Team Review](#)

[Analysis will prompt to save](#)

[Or manually copy output](#)

[Troubleshooting](#)  
["No accessible customer accounts found"](#)  
["No campaign data found"](#)  
["Error fetching data"](#)  
[Slow Analysis](#)  
[Tips for Best Results](#)  
[Next Steps](#)

### **Real Estate Google Ads Analyzer Guide**

[Overview](#)  
[Features](#)  
[Quick Start](#)  
[Usage Flow](#)  
[Step 1: Select Customer Account](#)  
[Step 2: Select Campaign](#)  
[Step 3: Set Date Range](#)  
[Step 4: Optimization Goals](#)

[Step 5: Analysis](#)  
[Analysis Framework](#)  
[Output Structure](#)  
[Executive Summary](#)  
[Priority Recommendations](#)  
[Keyword Recommendations](#)  
[Bid & Budget Optimization](#)  
[Ad Copy & Creative](#)  
[Targeting & Settings](#)  
[Performance Projections](#)  
[Example Output](#)  
[Saving Results](#)  
[Troubleshooting](#)  
["No accessible customer accounts found"](#)  
["No campaign data found"](#)  
["Error listing customer accounts"](#)  
[Advanced Usage](#)  
[Analyze Specific Campaign via Command Line](#)  
[Custom Optimization Goals](#)  
[Cost Considerations](#)  
[Best Practices](#)

## **[06 Claude Prompt System](#)**

### **[6. Claude Prompt System - Modular Architecture](#)**

[Overview](#)  
[Why Modular Prompts?](#)  
[Architecture](#)  
[Directory Structure](#)  
[Core Prompt \(`core\\_prompt.md`\)](#)  
[Module Descriptions](#)  
[1. Bidding Strategy Module \(`bidding\\_strategy.md`\)](#)  
[2. Smart Bidding Module \(`smart\\_bidding.md`\)](#)  
[3. Ad Copy Module \(`ad\\_copy.md`\)](#)  
[4. Offline Conversions Module \(`offline\\_conversions.md`\)](#)  
[5. MCC Portfolio Module \(`mcc\\_portfolio.md`\)](#)  
[6. Change Tracking Module \(`change\\_tracking.md`\)](#)  
[7. Keyword Planner Module \(`keyword\\_planner.md`\)](#)  
[8. Biweekly Reporting Module \(`biweekly\\_reporting.md`\)](#)  
[9. Keyword Research Module \(`keyword\\_research.md`\)](#)  
[Module Loading System](#)  
[How It Works](#)  
[Configuration \(`PAGE\\_PROMPT\\_CONFIGS`\)](#)  
[Dynamic Module Detection \(Q&A\)](#)  
[Usage by Page/Feature](#)  
[■ Campaign Analysis Page](#)  
[■ Ad Copy Optimization Page](#)  
[■ Keyword Research Page](#)

- [Biweekly Reports Page](#)
- [Ask Claude \(Q&A\) Page](#)
- [Token Usage Comparison](#)
- [Before \(Monolithic Prompt\)](#)
- [After \(Modular System\)](#)
- [Maintenance & Updates](#)
- [Updating a Module](#)
- [Adding a New Module](#)
- [Updating Core Prompt](#)
- [Technical Implementation](#)
- [Loading Function](#)
- [Load prompt for campaign analysis](#)
- [Load prompt for Q&A with dynamic detection](#)
- [Integration in Code](#)
- [Fallback System](#)
- [Best Practices](#)
- [Future Enhancements](#)
- [Related Documentation](#)
- [Questions?](#)

## **07 Model Comparison**

### 7. Claude Model Comparison for Google Ads Analysis

- [Quick Recommendation](#)
- [Model Comparison](#)
- [Claude 3.5 Sonnet \(Recommended\)](#) ■
- [Claude 3.7 Sonnet \(Newer Option\)](#)
- [Claude 3 Opus \(Premium\)](#)
- [Cost Comparison \(Typical Analysis\)](#)
- [Performance Comparison](#)
- [Recommendation by Use Case](#)
- [Monthly Campaign Analysis](#)
- [Quarterly Strategic Review](#)
- [Annual Deep Dive / Complex Multi-Account Analysis](#)
- [Testing New Strategies](#)
- [How to Change Models](#)
- [Option 1: Interactive Selection](#)
- [Option 2: Environment Variable](#)
- [or](#)
- [or](#)
- [Option 3: Code Modification](#)
- [Real-World Example](#)
- [Final Recommendation](#)

## **08 Prompt Recommendations**

### 8. Prompt Review & Recommendations

- [What to Keep from Your New Prompt \(Excellent Additions\)](#)
- [\\*\\*Bidding Strategy Progression Framework\\*\\* \(CRITICAL - Keep This!\)](#)

■ [\\*\\*Real Estate Investor Specific Context\\*\\*](#)

■ [\\*\\*Industry Best Practices\\*\\*](#)

■ [\\*\\*Red Flags Section\\*\\*](#)

■ [\\*\\*Context Questions\\*\\*](#)

[What to Keep from Old Prompt \(Critical for Output Quality\)](#)

■ [\\*\\*Strict Output Format with Tags\\*\\*](#)

■ [\\*\\*"DO NOT Ask Questions" Instructions\\*\\*](#)

■ [\\*\\*Specific Recommendation Structure\\*\\*](#)

■ [\\*\\*All Sections Must Be Included\\*\\*](#)

■ [\\*\\*Scratchpad Section\\*\\*](#)

[Recommended Merged Structure](#)

[Key Integration Points](#)

[Merge the Analysis Framework](#)

[Merge the Recommendation Format](#)

[Add Output Requirements](#)

[Specific Recommendations](#)

[What to Remove/Modify](#)

[Final Recommendation](#)

## **09 Authentication Troubleshooting**

### **9. Authentication Troubleshooting Guide**

[Error: "DEVELOPER TOKEN INVALID"](#)

[Cause](#)

[Solution](#)

[Error: "Request is missing required authentication credential"](#)

[Cause](#)

[Solution](#)

[Error: "Refresh Token Expired or Revoked"](#)

[Cause](#)

[Solution](#)

[Error: "DEVELOPER TOKEN PROHIBITED"](#)

[Cause](#)

[Solution](#)

[Basic vs Standard Access](#)

[Quick Checklist](#)

[Getting Help](#)

# 01 User Guide

## 1. Google Ads Account Manager - AI Agent

### Comprehensive User Guide

**Version:** 1.0

**Last Updated:** December 2024

**Documentation Order:** #1 (Getting Started - Read First)

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### Table of Contents

- ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
  - ~~MARKER~~MARKER
- 

### Overview

**Google Ads Account Manager - AI Agent** is a comprehensive web application that combines Google Ads API integration with Claude AI to provide intelligent campaign analysis, optimization recommendations, and account management for real estate investor campaigns.



## Key Features

- ■ **AI-Powered Analysis** - Claude AI provides context-aware optimization recommendations
- ■ **Comprehensive Campaign Analysis** - Deep dive into performance metrics and opportunities
- ■ **Ad Copy Optimization** - Specialized A/B testing recommendations with character limit compliance
- ■ **Biweekly Client Reports** - Professional 2-page PDF reports for clients
- ■ **AI Q&A** - Ask Claude questions about Google Ads management
- ■ **Help Center** - AI-powered documentation assistant with instant answers from app documentation
- ■ **Account Management** - Create sub-accounts and campaigns directly from the app
- ■ **Change Tracking** - Automatic and manual change tracking for continuous optimization

## Target Audience

- Real estate investors managing Google Ads campaigns
  - PPC managers handling multiple client accounts
  - Marketing agencies specializing in real estate lead generation
  - Anyone managing Google Ads campaigns targeting motivated and distressed home sellers
- 

## System Architecture & Integrations

### Core Technologies

- **Streamlit** - Web application framework
- Provides the user interface
- Handles session state management
- Deployed on Streamlit Cloud
- **Google Ads API** - Campaign data and management
- Fetches comprehensive campaign data
- Creates sub-accounts and campaigns

- Requires OAuth 2.0 authentication
- Supports MCC (Manager) accounts
- **Anthropic Claude API** - AI analysis engine
- Provides intelligent campaign analysis
- Generates optimization recommendations
- Creates client-friendly reports
- Answers Google Ads management questions
- Uses modular prompt system for efficient token usage (20-60% reduction)
- See \_\_\_\_~~MARKER~~MARKER\_\_\_\_ for architecture details
- **Google Drive API** - Report storage
- Uploads PDF reports to organized folders
- Supports multiple report types (analysis, biweekly, Q&A)
- **Help System** - Documentation assistant
- Index-based documentation loading for token optimization (~35% savings)
- On-demand content loading (only loads 2 most relevant docs per query)
- Smart caching in session state
- Uses Claude Haiku for fast, cost-effective responses

## Data Flow



## Integration Details

## Google Ads API Integration

**Purpose:** Fetch campaign data and manage accounts

**What It Does:**

- Retrieves campaign performance metrics
- Fetches keyword, ad group, and ad data
- Gets search term performance
- Creates new sub-accounts
- Creates new campaigns

**Authentication:**

- OAuth 2.0 flow
- Refresh token stored securely
- Supports both local (.env) and cloud (Streamlit secrets) configurations

**Data Retrieved:**

- Campaign metrics (impressions, clicks, CTR, conversions, ROAS)
- Keyword performance (status, bids, match types, quality scores)
- Ad group performance
- Ad copy (all headlines and descriptions)
- Search term data
- Bidding strategy settings

## Claude AI Integration

**Purpose:** Intelligent analysis and recommendations

**Models Available:**

- Claude Sonnet 4 (recommended) - Best balance of quality and cost
- Claude 3.5 Haiku - Fast and cost-effective
- Claude 3 Opus - Most powerful, higher cost

**What Claude Does:**

- Analyzes campaign performance data

- Provides optimization recommendations
- Generates ad copy suggestions
- Creates biweekly client reports
- Answers Google Ads management questions
- Assesses impact of previous changes (with changelog context)

### **Claude Prompt System:**

- Modular prompt architecture (core + optional modules)
- Dynamic module loading based on feature/page
- Reduced token usage (20-60% savings per analysis)
- Each page loads only the modules it needs
- See \_\_\_\_MARKERØMARKER\_\_\_\_ for complete details
- Context-aware analysis using changelog history
- Character limit compliance for ad copy
- Client-friendly report formatting

## **Google Drive Integration**

**Purpose:** Organized report storage

### **Folder Structure:**

- Optimization Reports: \_\_\_\_MARKERØMARKER\_\_\_\_
- Ad Copy Optimization: \_\_\_\_MARKERØMARKER\_\_\_\_
- Claude Q&A Chat History: \_\_\_\_MARKERØMARKER\_\_\_\_

### **Report Types:**

- Campaign Analysis PDFs
- Ad Copy Optimization PDFs
- Biweekly Client Reports (2-page PDFs)
- Q&A Chat Log PDFs

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## Getting Started

### Prerequisites

- **Google Ads Account**

- MCC (Manager) account or customer account
- Google Ads API access enabled
- Developer token (Basic or Standard access)

- **Anthropic Account**

- Claude API key
- Access to Claude models (Sonnet 4 recommended)

- **Google Cloud Project**

- OAuth 2.0 credentials (Client ID and Secret)
- Google Ads API enabled
- Google Drive API enabled (for report storage)

### Initial Setup

See `__MARKER0MARKER__` for detailed setup instructions.

#### Quick Setup Steps:

- Clone repository
- Install dependencies (`__MARKER0MARKER__`)
- Configure credentials (see `__MARKER0MARKER__`)
- Deploy to Streamlit Cloud or run locally

### First Time Access

- Navigate to the web app URL
  - Check connection status in sidebar (should show "■ Connected")
  - Select your Claude model in Settings
  - Start with "■ Campaign Analysis" page
- 

## Web App Pages Guide

### ■ Campaign Analysis

**Purpose:** Get comprehensive optimization recommendations for your campaigns.

#### **How to Use:**

- **Select Account & Campaign**

- Choose account from dropdown
- Select specific campaign or "All Campaigns"
- Campaign list loads automatically

- **Set Analysis Parameters**

- **Date Range:** Number of days to analyze (default: 30)
- **Optimization Goals:** Use defaults or enter custom goals

- **Run Analysis**

- Click "■ Run Comprehensive Analysis"
- Wait for 3 steps:
  - Step 1: Fetching campaign data
  - Step 2: Formatting data
  - Step 3: Loading change history
  - Step 4: Claude analysis (1-2 minutes)

- **Review Recommendations**

- Analysis results display automatically
- Includes performance insights and actionable recommendations
- Previous changes (if any) are considered by Claude

- **Save Snapshot (Optional)**

- Click "■ Save Snapshot" to save current campaign state
- Enables automatic change detection later

- **Track Changes**

- **Automatic:** Use "■ Detect Changes" after making updates
- **Manual:** Enter changes in text area and save

- **Export Results**

- "■ Save to PDF" - Download PDF report
- "■ Upload to Google Drive" - Upload to Optimization Reports folder

**What You Get:**

- Performance analysis
- Keyword optimization recommendations
- Budget allocation suggestions
- Waste elimination recommendations
- Match type strategy guidance
- Ad copy improvement suggestions

**Tips:**

- Save snapshot after analysis for automatic change detection
- Review changelog context before running new analysis
- Use default optimization goals for real estate campaigns

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## ■ Ad Copy Optimization

**Purpose:** Get specialized ad copy recommendations with A/B testing suggestions.

### **How to Use:**

- **Select Account & Campaign**

- Same as Campaign Analysis

- **Set Date Range**

- Typically 30 days for sufficient data

- **Run Analysis**

- Click "■ Run Ad Copy Analysis"
- Claude analyzes all headlines and descriptions
- Focuses on keywords with 3+ conversions and >10% conversion rate

- **Review Recommendations**

- Specific headline/description replacements
- Character limit compliance
- High-converting keyword integration
- A/B testing suggestions

- **Export Results**

- Save to PDF or upload to Google Drive (Ad Copy Optimization folder)

### **What You Get:**

- Headline replacements (which headline to replace)
- Description replacements (which description to replace)
- Character count verification



- Keyword integration suggestions
- A/B testing recommendations

**Tips:**

- Focus on top-performing keywords (3+ conversions, >10% conversion rate)
  - Test one change at a time for accurate results
  - Keep character limits in mind (30 chars for headlines, 90 for descriptions)
- 

## ■ Keyword Research

**Purpose:** Analyze keyword competition, search volume, and get AI-powered expansion recommendations using Google Keyword Planner data.

**How to Use:**

- **Select Account**

- Choose account from dropdown
- Account is required for Keyword Planner API access

- **Input Keywords**

- **Option 1: Manual Entry**

- Enter keywords one per line in the text area
- Example: \_\_\_\_MARKER0MARKER\_, \_MARKER1MARKER\_, \_MARKER2MARKER\_\_\_\_

- **Option 2: Load from Campaign**

- Select a campaign from dropdown
- Click "Load Keywords from Selected Campaign"
- All keywords from that campaign will be loaded automatically

- **Option 3: Generate Suggestions from Seed Keywords**

- Enter seed keywords (e.g., \_\_\_\_MARKER0MARKER\_, \_MARKER1MARKER\_\_\_\_)
- Click "Generate Keyword Suggestions"
- System uses Keyword Planner to generate related keyword ideas

- **Set Location Targeting (Optional)**

- **Automatic (Recommended):** If you select a campaign and leave "Specify geographic targeting" unchecked:

- System automatically detects and uses the campaign's geo-targeting locations
- Search volume data will match your campaign's actual target locations
- Shows: "■ Using campaign's geo-targeting (X location(s))"

- **Manual Override:** Check "Specify geographic targeting" to override campaign settings:

- Enter location name (e.g., \_\_\_\_MARKER0MARKER\_, \_MARKER1MARKER\_, \_MARKER2MARKER\_\_\_\_)
- System resolves the location and uses it for search volume analysis
- This overrides campaign geo-targeting if a campaign is selected
- Leave blank for national/global data

- **No Campaign Selected:** If no campaign is selected and geo-targeting is unchecked:

- Uses national/global data (no specific location targeting)

- **Run Analysis**

- Click "■ Analyze Keywords"
- System will:
  - Auto-detect campaign geo-targeting (if campaign selected and checkbox unchecked)
  - Fetch Keyword Planner data (search volume, competition, suggested bids) for the target locations
  - Send data to Claude for analysis
  - Generate recommendations

- **Review Results**

- **Keyword Planner Data Table:**

- Shows search volume, competition level, suggested bid range for each keyword

- Interactive table for easy review

#### • **Claude's Analysis & Recommendations:**

- Competition analysis (which keywords are too competitive)
- Search volume assessment (scaling potential)
- Keyword expansion recommendations (priority 1, 2, 3)
- Budget allocation strategy
- Market positioning insights

#### • **Export Results**

- "■ Save to PDF" - Download keyword research report
- "■ Upload to Google Drive" - Upload to Google Drive folder

#### **What You Get:**

- Competition analysis for each keyword
- Search volume data (high/medium/low)
- Suggested bid estimates
- Keyword expansion recommendations (add, test, skip)
- Budget allocation strategy
- Quality Score indicators
- Market positioning insights

#### **Tips:**

- Use "Load from Campaign" to analyze existing campaign keywords
- Use "Generate Suggestions" to discover new keyword opportunities
- **Leave "Specify geographic targeting" unchecked when analyzing campaign keywords** - it will automatically use your campaign's geo-targeting for accurate search volume
- Check "Specify geographic targeting" only if you want to research keywords for a different location than your campaign targets
- Location format: Simple names work best (e.g., \_\_\_\_MARKER0MARKER\_, \_MARKER1MARKER\_, \_MARKER2MARKER\_\_\_\_)

- Review competition levels before adding high-competition keywords
- Focus on keywords with medium-high search volume (1K-10K/month) for best results

#### **When to Use:**

- Before launching a new campaign (use manual location entry)
- When expanding existing campaigns (auto-detects campaign geo-targeting)
- To find new keyword opportunities
- To assess competition levels in your target markets
- To get bid estimates for new keywords
- To research keywords for different locations than your campaign targets (check "Specify geographic targeting")

#### **Geo-Targeting Behavior:**

- **Unchecked + Campaign Selected:** Automatically uses campaign's geo-targeting (recommended for analyzing campaign keywords)
  - **Checked + Location Entered:** Overrides campaign settings, uses only the entered location
  - **Unchecked + No Campaign:** Uses national/global data
- 

## **■ Biweekly Reports**

**Purpose:** Generate professional 2-page PDF reports for clients.

#### **How to Use:**

- **Select Account & Campaign**
  - Choose client account and campaign
- **Set Date Range**
  - Default: 14 days (biweekly)
  - Adjustable from 7-365 days

- **Generate Report**

- Click "■ Generate Biweekly Report"
- Claude creates client-friendly report
- Includes performance overview, trends, and next steps

- **Review Report**

- Report displays in web app
- Formatted with color-coded metrics
- Professional layout

- **Export Report**

- "■ Download PDF" - 2-page branded PDF
- "■ Upload to Google Drive" - Save to reports folder

**Report Contents:**

- **Page 1:**

- Logo (branded)
- Key Metrics (6 metrics in 2 columns)
- Two-Week Trend

- **Page 2:**

- What This Means
- What's Working (table)
- What We're Optimizing
- Next Steps
- Logo (footer)

**What You Get:**

- Client-friendly language
- Color-coded metrics (■ good, ■ okay, ■ needs attention)

- Action-oriented insights
- Professional branding

**Tips:**

- Use 14-day periods for biweekly reports
  - Review report before sending to client
  - Customize logo for branding
- 

## ■ Ask Claude

**Purpose:** Get answers to Google Ads management questions with optional campaign context.

**How to Use:**

- **Enter Your Question**

- Type your question in the text area
- Examples:
  - "How do I improve my Quality Score?"
  - "What's the best bidding strategy for new campaigns?"
  - "Should I use broad match or exact match?"

- **Add Campaign Context (Optional)**

- Check "Include campaign data for context"
- Select account and campaign
- Claude will use current campaign data to answer

- **Ask Question**

- Click "■ Ask Claude"
- Response appears in chat interface

- **Continue Conversation**

- Ask follow-up questions
- Chat history maintained in session

- **Export Chat**

- "■ Download PDF" - Save chat log as PDF
- "■ Upload to Google Drive" - Save to Q&A folder

**What You Get:**

- Expert Google Ads advice
- Context-aware responses (if campaign data included)
- Conversational interface
- Chat history export

**Tips:**

- Include campaign data for more specific answers
- Ask follow-up questions for deeper insights
- Export important conversations for reference

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## ■ Create Account

**Purpose:** Create new Google Ads sub-accounts under your MCC.

**How to Use:**

- **Enter Account Details**

- **Account Name:** Descriptive name for the account
- **Currency Code:** 3-letter code (e.g., USD, CAD)
- **Time Zone:** Select from dropdown

- **Review Account Settings**

- Manager Account: False
- Test Account: False
- Tracking URL Template: Empty (client sets up)
- Payment Method: Client must set up their own

- **Create Account**

- Click "■ Create Sub-Account"
- Account created in your MCC
- Account ID displayed upon success

**What Happens:**

- New sub-account created under MCC
- Account appears in account selection dropdowns
- Client must set up payment method separately
- Conversion tracking set to "This Manager"

**Tips:**

- Use descriptive account names
- Select correct time zone for client location
- Note account ID for client records

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## ■ Create Campaign

**Purpose:** Create new campaigns in existing sub-accounts.

**How to Use:**

- **Select Account**



- Choose sub-account from dropdown
- Only sub-accounts (not MCC) can have campaigns

- **Enter Campaign Details**

- **Campaign Name:** Descriptive name
- **Budget:** Daily budget amount
- **Start Date:** Campaign start date
- **End Date:** Optional end date

- **Review Campaign Settings**

- Bidding Strategy: Maximize Clicks
- Network: Google Search only
- Location Targeting: Presence Only
- Negative Keyword List: Shared list applied

- **Create Campaign**

- Click "■ Create Campaign"
- Campaign created with default settings
- Campaign ID displayed upon success

**Default Settings:**

- Bidding: Maximize Clicks (for new campaigns)
- Network: Search only (no Display, YouTube, etc.)
- Location: Presence Only (targets users in location)
- Negative Keywords: Shared list applied

**Tips:**

- Start with Maximize Clicks, upgrade to Target CPA later
- Use descriptive campaign names
- Set appropriate daily budget

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## ■ Help Center

**Purpose:** Get instant answers to questions about the app using AI-powered documentation search.

### How to Use:

- **Access Help Center**

- Click "■ Help Center" button in the Settings section of the sidebar (underneath Claude Model selector)
- Help Center page opens with suggested questions

- **Ask Questions**

- **Option 1: Click Suggested Questions**

- Browse 12 pre-populated questions displayed in 3 columns
- Click any question to get an instant answer
- Additional questions available in "More Suggested Questions" expander

- **Option 2: Type Your Question**

- Use the chat input at the bottom: "Ask a question about the app..."
- Type your question and press Enter
- System searches documentation and provides answer

- **Review Answers**

- Answers appear in chat format with user and assistant messages
- Source citations show which documentation files were referenced
- Chat history persists during your session

- **Clear Chat**

- Click "■ Clear Chat History" to start fresh

### What You Get:

- Instant answers based on app documentation
- Step-by-step instructions when relevant
- Source citations for transparency
- Context-aware responses using Claude AI
- Optimized token usage (only loads relevant documentation)

### How It Works:

- **Index-Based Loading:** System uses a lightweight index (titles, headers, keywords) to quickly identify relevant documentation
- **On-Demand Content:** Only loads the 2 most relevant documentation files per question (optimized for token usage)
- **Smart Caching:** Loaded documentation is cached in session state to prevent redundant loading
- **Token Optimization:** Saves ~35% tokens per query compared to loading all documentation

### Tips:

- Use specific questions for better results (e.g., "How do I set up geo-targeting?" vs. "help")
- Suggested questions cover common topics - try them first
- Answers are based on documentation in the \_\_\_\_MARKER0MARKER\_\_\_\_ folder
- If answer isn't helpful, try rephrasing your question

### When to Use:

- Learning how to use a specific feature
  - Troubleshooting setup or configuration issues
  - Understanding how features work together
  - Quick reference for common tasks
  - Getting clarification on documentation
-

# Change Tracking System

## Overview

The change tracking system helps Claude provide context-aware recommendations by tracking what changes you've made between analyses.

## Two Methods

### Method 1: Automatic Change Detection (Recommended)

#### Workflow:

- Run campaign analysis
- Click "■ Save Snapshot" (saves current campaign state)
- Make changes in Google Ads
- Click "■ Detect Changes"
- Review detected changes
- Click "■ Save to Changelog"

#### What Gets Detected:

- Budget changes
- Bidding strategy changes (including Target CPA/ROAS)
- Keyword status changes (paused/enabled/removed)
- Keyword bid changes
- Campaign/ad group status changes
- New keywords added

#### Benefits:

- No manual entry required
- Accurate change detection
- Automatic formatting

### Method 2: Manual Entry

**Workflow:**

- Run campaign analysis
- Make changes in Google Ads
- Enter changes in "Track Changes Made" text area
- Click "■ Save Changes to Changelog"

**When to Use:**

- Ad copy changes (not detected automatically)
- Negative keyword additions
- Other changes not captured by snapshot

**Benefits:**

- Capture all changes, including ad copy
- Add context and notes
- Flexible entry format

## How Changelog Helps Claude

When you run a new analysis, Claude:

- ■ Recognizes what was already implemented
- ■ Assesses impact of previous changes
- ■ Avoids duplicate recommendations
- ■ Builds on successes
- ■ Tracks long-term progress

## Changelog Format

Changelog files are stored in \_\_\_\_MARKER0MARKER\_\_\_\_ directory:

- Format: \_\_\_\_MARKER0MARKER\_\_\_\_
- Each entry includes:
- Date/period

- Performance summary (optional)
  - Changes made
  - Timestamp
- 

## Best Practices

### Campaign Analysis

- **Regular Analysis**

- Run analysis every 2-4 weeks
- Track changes between analyses
- Build on previous optimizations

- **Date Ranges**

- Use 30 days for comprehensive analysis
- Use 14 days for biweekly reports
- Avoid very short ranges (<7 days) for statistical significance

- **Optimization Goals**

- Use default goals for real estate campaigns
- Customize for specific objectives
- Be specific in custom goals

### Change Tracking

- **Save Snapshots**

- Always save snapshot after analysis
- Enables automatic change detection
- Updates snapshot after saving changes

- **Document Changes**

- Track all changes, not just major ones
- Include specific details (keyword names, amounts)
- Note dates of changes

- **Review Changelog**

- Check previous changes before new analysis
- Understand what worked and what didn't
- Build on successful optimizations

## Report Generation

- **Biweekly Reports**

- Generate consistently every 2 weeks
- Use same date ranges for comparison
- Review before sending to clients

- **Export Organization**

- Use Google Drive for centralized storage
- Download PDFs for local backup
- Organize by client/account

## Model Selection

- **Claude Sonnet 4** (Recommended)

- Best balance of quality and cost
- Fast response times
- Excellent for all analysis types

- **Claude 3.5 Haiku**

- Fastest and most cost-effective
- Good for simple questions

- Use for Q&A when speed is priority

- **Claude 3 Opus**

- Most powerful analysis
  - Higher cost
  - Use for complex strategic questions
- 

## Troubleshooting

### Connection Issues

**Problem:** "■■■ Not Connected" in sidebar

**Solutions:**

- Check credentials in Streamlit secrets or .env file
- Verify Google Ads API access
- See \_\_\_\_MARKER0MARKER\_\_\_\_

### Analysis Hanging

**Problem:** Analysis stuck on "Claude is analyzing..."

**Solutions:**

- Wait 2-3 minutes (normal for complex analyses)
- Check Claude API key is valid
- Try different Claude model
- Check Streamlit Cloud logs for errors

### No Campaign Data

**Problem:** "No campaign data found"



**Solutions:**

- Verify account ID is correct
- Check campaign is not removed
- Ensure date range includes active period
- Verify API access to account

## Change Detection Not Working

**Problem:** "No snapshot found"

**Solutions:**

- Save snapshot after analysis first
- Check snapshots/ directory exists
- Verify account/campaign names match

## PDF Generation Errors

**Problem:** "Failed to create PDF"

**Solutions:**

- Check reportlab is installed
- Verify sufficient disk space
- Check Streamlit Cloud logs
- Try downloading instead of uploading

## Google Drive Upload Fails

**Problem:** "Failed to upload to Google Drive"

**Solutions:**

- Verify Google Drive API is enabled
- Check folder IDs are correct
- Ensure OAuth token has Drive scope

- Re-authenticate if needed

For more troubleshooting, see [\\_\\_MARKER0MARKER\\_\\_](#).

---

## Additional Resources

- [\\_\\_MARKER0MARKER\\_\\_](#) - Initial setup instructions
  - [\\_\\_MARKER0MARKER\\_\\_](#) - Deploy to Streamlit Cloud
  - [\\_\\_MARKER0MARKER\\_\\_](#) - Modular prompt architecture and module usage
  - [\\_\\_MARKER0MARKER\\_\\_](#) - Fix auth issues
  - [\\_\\_MARKER0MARKER\\_\\_](#) - Compare Claude models
  - [\\_\\_MARKER0MARKER\\_\\_](#) - Optimize prompts
- 

**Need Help?** Check the troubleshooting section or review the specific documentation for your issue.

## 02 Setup

### 2. Setup Guide

**Documentation Order:** #2 (Getting Started)

Complete setup instructions for the Real Estate Google Ads Analyzer.

#### Prerequisites

- Python 3.8 or higher
- Google Ads account with API access
- Claude API key from Anthropic
- Terminal/command line access

### Step 1: Install Python Dependencies

#### Create Virtual Environment

```
# Navigate to project directory cd "/Users/jer89/Cursor Projects/GAds-Claude" # Create virtual environment python3 -m venv venv # Activate virtual environment source venv/bin/activate
```

#### Install Packages

```
pip install -r requirements.txt
```

**Note:** On macOS with Homebrew Python, you may need to use `__MARKER0MARKER_` and `_MARKER1MARKER__`.

### Step 2: Google Ads API Setup

#### Get Developer Token

- Go to `__MARKER0MARKER__`
- Sign in with your Google Ads account
- Click "Create Application" or select an existing application

- Copy your **Developer Token** (you'll need this)

## Get OAuth2 Credentials

- Go to \_\_\_\_MARKER0MARKER\_\_\_\_
- Create a new project or select an existing one
- Enable "Google Ads API":
- Go to "APIs & Services" → "Library"
- Search for "Google Ads API"
- Click "Enable"
- Create OAuth2 credentials:
- Go to "APIs & Services" → "Credentials"
- Click "Create Credentials" → "OAuth client ID"
- Choose "Desktop app" as application type
- Click "Create"
- Download credentials:
- Click the download icon next to your OAuth client
- Save the JSON file as \_\_\_\_MARKER0MARKER\_\_\_\_ in the project root

## Get Customer ID

Your Google Ads Customer ID is in the format \_\_\_\_MARKER0MARKER\_\_\_\_:

- Found in your Google Ads account settings
- Or in the URL when viewing your account
- For MCC accounts, use the MCC ID

## Step 3: Claude API Setup

- Go to \_\_\_\_MARKER0MARKER\_\_\_\_
- Sign up or log in
- Navigate to "API Keys"

- Click "Create Key"
- Copy your API key (starts with `__MARKER0MARKER__`)

## Step 4: Configure Environment Variables

Create a `__MARKER0MARKER__` file in the project root:

```
# Google Ads API Credentials GOOGLE_ADS_DEVELOPER_TOKEN=your_developer_token_here
GOOGLE_ADS_CLIENT_ID=your_client_id_from_json
GOOGLE_ADS_CLIENT_SECRET=your_client_secret_from_json
GOOGLE_ADS_REFRESH_TOKEN=will_be_generated_next_step
GOOGLE_ADS_CUSTOMER_ID=123-456-7890 # Claude API ANTHROPIC_API_KEY=sk-ant-your_key_here
# Optional: Default Claude model CLAUDE_MODEL=claude-3-5-sonnet-20241022
```

### Where to find values:

- `__MARKER0MARKER__`: From Google Ads API Center
- `__MARKER0MARKER__`: **From downloaded** `__MARKER1MARKER__` (field: `__MARKER2MARKER__`)
- `__MARKER0MARKER__`: **From downloaded** `__MARKER1MARKER__` (field: `__MARKER2MARKER__`)
- `__MARKER0MARKER__`: **Your Google Ads account ID (format: `__MARKER1MARKER__`)**
- `__MARKER0MARKER__`: From Anthropic Console
- `__MARKER0MARKER__`: Generated in next step

## Step 5: Authenticate Google Ads API

Run the authentication script:

```
python authenticate.py
```

This will:

- Open a browser window
- Ask you to sign in with your Google account
- Request permission to access Google Ads
- Generate a refresh token
- Display the token in the console

### After authentication:

- Copy the refresh token shown in the console
- Update `__MARKER0MARKER__` in your `__MARKER1MARKER__` file

#### If authentication fails:

```
# Revoke existing tokens python authenticate.py --revoke # Re-authenticate python
authenticate.py
```

## Step 6: Verify Setup

Test your setup:

```
# Activate virtual environment (if not already active) source venv/bin/activate # Run
the analyzer python real_estate_analyzer.py
```

You should see:

- Account selection prompt
- Campaign listing
- Model selection

If you see errors, check the troubleshooting section below.

## Troubleshooting

### Authentication Issues

#### "Failed to authenticate with Google Ads API"

- Verify credentials in `__MARKER0MARKER__`:

```
# Check .env file has all required fields cat .env
```

- Regenerate tokens:

```
python authenticate.py --revoke python authenticate.py
```

- Check `__MARKER0MARKER__` exists:

```
ls client_secrets.json
```

#### "Token expired" or "Invalid refresh token"

- Regenerate refresh token:

```
python authenticate.py --revoke python authenticate.py
```

- Update \_\_\_\_MARKER0MARKER\_\_\_\_ with new token

## API Access Issues

### "No accessible customer accounts found"

- Verify \_\_\_\_MARKER0MARKER\_\_\_\_ is correct
- Ensure the account has API access enabled
- Check that you're using an MCC account ID if analyzing multiple accounts
- Verify OAuth2 credentials have correct scopes

### "Developer token not approved"

- Developer tokens can take 24-48 hours to activate
- Check status in Google Ads API Center
- Ensure you've completed the application process

## Claude API Issues

### "ANTHROPICAPIKEY not found"

- Verify \_\_\_\_MARKER0MARKER\_ file exists and contains \_MARKER1MARKER\_\_\_\_
- Check API key is correct (starts with \_\_\_\_MARKER0MARKER\_\_\_\_)
- Ensure no extra spaces or quotes around the key

### "Error calling Claude API"

- Verify API key is valid in Anthropic Console
- Check you have sufficient API credits
- Verify internet connection

## Python/Environment Issues

## "Module not found" errors

- Ensure virtual environment is activated:

```
source venv/bin/activate
```

- Reinstall dependencies:

```
pip install -r requirements.txt
```

## "python: command not found"

- Use `__MARKERØMARKER__` instead:

```
python3 real_estate_analyzer.py
```

## File Permission Issues

### "Permission denied" when running scripts

- Make scripts executable:

```
chmod +x run_real_estate.sh
```

## Multi-Account Setup (MCC)

If you manage multiple Google Ads accounts:

- Use your MCC (Manager) account ID as `__MARKERØMARKER__`
- The analyzer will list all accessible accounts
- Select the account you want to analyze when prompted

### To find your MCC ID:

- Log into Google Ads
- MCC accounts show "Manager" in the account selector
- The ID is in the URL or account settings

## Security Best Practices

- Never commit credentials:



- \_\_\_\_MARKER0MARKER\_ is in \_MARKER1MARKER\_\_\_\_
- \_\_\_\_MARKER0MARKER\_ is in \_MARKER1MARKER\_\_\_\_
- \_\_\_\_MARKER0MARKER\_ is in \_MARKER1MARKER\_\_\_\_

- **Keep credentials secure:**

- Don't share \_\_\_\_MARKER0MARKER\_\_\_\_ file
- Rotate API keys periodically
- Use separate credentials for production/testing

- **Token management:**

- Refresh tokens don't expire (unless revoked)
- Store securely
- Revoke if compromised

## Next Steps

Once setup is complete:

- Read the \_\_\_\_MARKER0MARKER\_\_\_\_ for how to use the analyzer
- Review \_\_\_\_MARKER0MARKER\_\_\_\_ for Claude model selection
- Run your first analysis:

```
python real_estate_analyzer.py
```

## Getting Help

If you encounter issues:

- Check the troubleshooting section above
- Verify all credentials are correct
- Ensure all dependencies are installed
- Check Google Ads API and Claude API status pages

For usage questions, see \_\_\_\_MARKER0MARKER\_\_\_\_.

## 03 Streamlit Deployment

### 3. Streamlit Cloud Deployment Guide

**Documentation Order:** #3 (Getting Started)

Complete guide for deploying the Google Ads Analyzer to Streamlit Cloud.

#### Prerequisites

- GitHub account
- Streamlit Cloud account (free)
- Google Ads API credentials
- Claude API key

#### Step 1: Push to GitHub

The code is already in your GitHub repository: \_\_\_\_MARKER0MARKER\_\_\_\_

#### Step 2: Configure Streamlit Cloud

- Go to \_\_\_\_MARKER0MARKER\_\_\_\_
- Click "New app"
- Connect your GitHub repository: \_\_\_\_MARKER0MARKER\_\_\_\_
- Main file path: \_\_\_\_MARKER0MARKER\_ (or \_MARKER1MARKER\_\_\_\_ if you've updated it)
- Branch: \_\_\_\_MARKER0MARKER\_\_\_\_

#### Step 3: Configure Secrets

Go to **Settings** → **Secrets** and add all required secrets:

#### Required Secrets

```
GOOGLE_ADS_DEVELOPER_TOKEN = "your_developer_token" GOOGLE_ADS_CLIENT_ID =
"your_client_id.apps.googleusercontent.com" GOOGLE_ADS_CLIENT_SECRET =
"your_client_secret" GOOGLE_ADS_CUSTOMER_ID = "your_customer_id" ANTHROPIC_API_KEY =
"your_claude_api_key" TOKEN_JSON = """ { "token": "your_access_token", "refresh_token":
"your_refresh_token", "token_uri": "https://oauth2.googleapis.com/token", "client_id":
"your_client_id.apps.googleusercontent.com", "client_secret": "your_client_secret",
"scopes": [ "https://www.googleapis.com/auth/adwords",
"https://www.googleapis.com/auth/drive.file", "https://www.googleapis.com/auth/drive"
], "universe_domain": "googleapis.com", "account": "", "expiry":
"2025-12-12T16:53:25.862942Z" } """
```

## Important Notes

- **TOKEN\_JSON format:** Must use triple quotes `___MARKER0MARKER___` for multi-line strings in TOML
- **All secrets are required:** Missing any will cause authentication errors
- **TOKEN\_JSON:** Copy from your local `___MARKER0MARKER_ file (see _MARKER1MARKER___)`

## Step 4: Deploy

- Click "Save" in Streamlit Cloud
- Wait 1-2 minutes for deployment
- Your app will be live at: `___MARKER0MARKER___`

## Troubleshooting

### Authentication Errors

See `___MARKER0MARKER___`

### Common Issues

- **"Module not found":** Check `___MARKER0MARKER___` has all dependencies
- **"Invalid TOML":** Verify TOKEN\_JSON uses triple quotes
- **"DEVELOPER TOKEN INVALID":** Verify token is correct and approved

## Updating the App

- Push changes to GitHub
- Streamlit Cloud auto-deploys

- Or manually click "Reboot app" in Streamlit Cloud

## Main File Path

The app uses `__MARKER0MARKER_ as a wrapper that imports from _MARKER1MARKER__`. This allows Streamlit Cloud to use the existing configuration without changing settings.

# 05 Usage

## 5. Usage Guide (CLI - Legacy)

**Documentation Order:** #5 (Usage Guides)

Complete guide for using the Real Estate Google Ads Analyzer via command-line interface.

### Quick Start

```
source venv/bin/activate python real_estate_analyzer.py
```

Or use the quick script:

```
./run_real_estate.sh
```

### Step-by-Step Usage

#### Step 1: Select Customer Account

The tool lists all accessible customer accounts from your MCC:

```
Available Customer Accounts: 1. Real Estate Investor Account (123-456-7890) [Account]
2. Property Investment LLC (234-567-8901) [Account] 3. Cash Home Buyers Inc
(345-678-9012) [Account] 4. Use default from .env file Select account (1-4):
```

#### Tips:

- Choose the account you want to analyze
- Option 4 uses the `__MARKER0MARKER_ from your _MARKER1MARKER__` file
- MCC accounts will show as "[MCC/Manager]"

#### Step 2: Select Campaign

Choose a specific campaign or analyze all:

```
Available Campaigns: 1. ✓ Motivated Seller Campaign (ID: 123456789) [ENABLED] 2. ✓
Distressed Property Leads (ID: 234567890) [ENABLED] 3. ■ Foreclosure Leads (ID:
345678901) [PAUSED] 4. Analyze all campaigns Select campaign (1-4):
```

#### Tips:

- Select a specific campaign for targeted analysis
- Choose "Analyze all campaigns" for account-wide insights
- Status indicators: ✓ = Enabled, ■ = Paused, ✕ = Removed

### Step 3: Set Date Range

Enter the number of days to analyze:

```
Enter number of days to analyze (default: 30): 60
```

#### Recommendations:

- **30 days:** Standard monthly analysis
- **60-90 days:** Better for identifying trends
- **7-14 days:** Quick performance check
- Minimum 7 days recommended for meaningful data

### Step 4: Optimization Goals

Use default goals or enter custom ones:

```
Use default optimization goals? (Y/n): y
```

#### Default Goals:

- Improve CTR (Click-Through Rate)
- Reduce cost per conversion
- Increase conversion rate
- Improve ROAS (Return on Ad Spend)
- Optimize budget allocation

#### Custom Goals Example:

```
Enter your optimization goals (press Enter twice when done): 1. Reduce cost per lead by 20% 2. Increase phone call conversions 3. Improve quality of leads from "foreclosure" keywords [Press Enter twice]
```

### Step 5: Analysis

Claude analyzes your data and provides recommendations:

```
■ Fetching comprehensive campaign data... ■ Date range: Last 30 days ■ Campaign ID: 123456789 Fetching account summary... Fetching campaign data... Fetching keyword data... ■ Claude Analysis in Progress... This may take a minute. Claude is analyzing your campaign data...
```

#### **Analysis includes:**

- Campaign performance metrics
- Ad group performance
- Individual ad performance
- Keyword analysis with Quality Score
- Auction insights (competitive data)
- Budget allocation analysis

### **Step 6: Review Recommendations**

The output includes:

#### **Executive Summary**

- Overall campaign health
- Critical optimization opportunities

#### **Priority Recommendations**

- Top 3-5 highest-impact actions
- Expected impact
- Implementation priority (High/Medium/Low)

#### **Keyword Recommendations**

- New keywords to add
- Keywords to pause/remove
- Negative keywords
- Match type adjustments

#### **Bid & Budget Optimization**

- Bid adjustments



- Budget reallocation
- Competitive positioning strategies

### Ad Copy & Creative

- Ad copy improvements
- A/B testing recommendations

### Targeting & Settings

- Geographic adjustments
- Demographic targeting
- Scheduling optimizations

### Performance Projections

- Expected metric improvements

## Step 7: Save Results (Optional)

```
Save recommendations to file? (y/N): y ✓ Recommendations saved to:
recommendations_123_456_7890_123456789.txt
```

Files are saved in the project root with format:

\_\_\_MARKER0MARKER\_\_\_

## Model Selection

When you start the analyzer, you can choose the Claude model:

```
Claude Model Selection: 1. Claude 3.5 Sonnet (Recommended - Best balance) 2. Claude 3.7
Sonnet (Newer, more capable) 3. Claude 3 Opus (Most powerful, higher cost) 4. Use
current setting: claude-3-5-sonnet-20241022 Select model (1-4, default: 4):
```

**Recommendation:** Use Claude 3.5 Sonnet (option 1) for best balance of performance and cost.

See \_\_\_MARKER0MARKER\_\_\_ for detailed comparison.

## Example Output

## ■ OPTIMIZATION RECOMMENDATIONS

===== **\*\*EXECUTIVE SUMMARY\*\*** Your campaign shows strong conversion performance (3.2% conversion rate) but is losing 35% of potential impressions due to budget constraints. The primary opportunity is expanding high-ROAS keywords while pausing underperforming broad match terms. **\*\*PRIORITY RECOMMENDATIONS\*\*** 1. **\*\*Increase Budget for "Motivated Seller" Campaign\*\*** [HIGH PRIORITY] - Current budget: \$2,000/month - Recommended: \$3,500/month (+75%) - Expected impact: +45% conversions, maintain 4.2 ROAS - Budget lost share: 35% indicates significant opportunity 2. **\*\*Pause 12 Broad Match Keywords with Zero Conversions\*\*** [HIGH PRIORITY] - Keywords: "sell house", "home buyer", etc. - Current spend: \$450/month - Expected savings: \$450/month, reallocate to exact match ... **\*\*KEYWORD RECOMMENDATIONS\*\*** New Keywords to Add: - "sell house fast cash" (Exact Match) - High intent, lower competition - "avoid foreclosure help" (Phrase Match) - Targets distressed sellers - "inherited property sale" (Exact Match) - Niche but high-value ... **\*\*PERFORMANCE PROJECTIONS\*\*** If recommendations are implemented: - CTR: +0.8% (from 2.1% to 2.9%) - Cost per Conversion: -\$15 (from \$85 to \$70) - Conversion Rate: +0.5% (from 3.2% to 3.7%) - Monthly Conversions: +25 (from 80 to 105)

## Best Practices

### 1. Regular Analysis

- **Monthly:** Standard optimization review
- **Quarterly:** Strategic deep dive
- **After Changes:** Analyze impact of optimizations

### 2. Date Range Selection

- Use 30+ days for meaningful trends
- Longer periods (60-90 days) for seasonal analysis
- Shorter periods (7-14 days) for quick checks

### 3. Campaign Selection

- Analyze individual campaigns for specific insights
- Use "all campaigns" for account-wide strategy
- Focus on active campaigns first

### 4. Goal Customization

- Align goals with business objectives
- Be specific (e.g., "reduce cost per lead by 20%")

- Prioritize 3-5 key goals

## 5. Implementation

- Start with High-priority recommendations
- Test changes incrementally
- Monitor results and iterate

## Advanced Usage

### Custom Model Selection

Set default model in `__MARKER__`:

```
CLAUDE_MODEL=claude-3-5-sonnet-20241022
```

Available models:

- `__MARKER__` (recommended)
- `__MARKER__` (newer)
- `__MARKER__` (premium)

### Analyzing Multiple Accounts

- Run the analyzer
- Select different accounts from the list
- Save recommendations with different filenames
- Compare results across accounts

### Exporting for Team Review

Save recommendations and share:

```
# Analysis will prompt to save # Or manually copy output python real_estate_analyzer.py  
> analysis_output.txt
```

## Troubleshooting

**"No accessible customer accounts found"**

- Verify MCC account ID in \_\_\_\_MARKER0MARKER\_\_\_\_
- Ensure API access is enabled
- Check account linking in Google Ads

### "No campaign data found"

- Verify account has active campaigns
- Check date range (may be too short)
- Ensure campaigns aren't all paused

### "Error fetching data"

- Check internet connection
- Verify API credentials
- Ensure account has sufficient data

### Slow Analysis

- Reduce date range
- Select specific campaign instead of "all"
- Use Claude 3.5 Sonnet (faster than Opus)

### Tips for Best Results

- **Data Quality:** Ensure campaigns have sufficient data (100+ clicks recommended)
- **Date Range:** Use 30+ days for reliable insights
- **Specific Goals:** Custom goals get better recommendations
- **Regular Reviews:** Monthly analysis catches issues early
- **Implementation:** Act on High-priority recommendations first

### Next Steps

After getting recommendations:

- **Review Priority Items** - Focus on High-priority recommendations
- **Plan Implementation** - Schedule changes in Google Ads
- **Monitor Results** - Track performance after changes
- **Iterate** - Run analysis again after 2-4 weeks

For setup instructions, see \_\_\_\_MARKER0MARKER\_\_\_\_.

## Real Estate Google Ads Analyzer Guide

### Overview

Specialized analyzer for real estate investor clients targeting motivated and distressed home sellers. Uses a comprehensive Claude prompt to provide detailed optimization recommendations.

### Features

- **■ MCC Account Selection** - Choose from all accessible customer accounts
- **■ Campaign Selection** - Select specific campaign or analyze all
- **■ Comprehensive Data Analysis** - Campaigns, ad groups, ads, keywords, and auction insights
- **■ Custom Claude Prompt** - Specialized analysis framework for real estate campaigns
- **■ Actionable Recommendations** - Specific, prioritized optimization suggestions

### Quick Start

```
source venv/bin/activate python real_estate_analyzer.py
```

Or use the quick script:

```
./run_real_estate.sh
```

### Usage Flow

#### Step 1: Select Customer Account

The tool will list all accessible customer accounts from your MCC:

```
Available Customer Accounts: 1. Real Estate Investor Account (123-456-7890) [Account]
2. Property Investment LLC (234-567-8901) [Account] 3. Cash Home Buyers Inc
(345-678-9012) [Account] 4. Use default from .env file Select account (1-4):
```

## Step 2: Select Campaign

Choose a specific campaign or analyze all:

```
Available Campaigns: 1. ✓ Motivated Seller Campaign (ID: 123456789) [ENABLED] 2. ✓
Distressed Property Leads (ID: 234567890) [ENABLED] 3. ■ Foreclosure Leads (ID:
345678901) [PAUSED] 4. Analyze all campaigns Select campaign (1-4):
```

## Step 3: Set Date Range

Enter the number of days to analyze (default: 30):

```
Enter number of days to analyze (default: 30): 60
```

## Step 4: Optimization Goals

Use default goals or enter custom ones:

```
Use default optimization goals? (Y/n): y
```

Default goals:

- Improve CTR (Click-Through Rate)
- Reduce cost per conversion
- Increase conversion rate
- Improve ROAS (Return on Ad Spend)
- Optimize budget allocation

## Step 5: Analysis

Claude will analyze your data and provide comprehensive recommendations.

## Analysis Framework

The analyzer uses a specialized prompt that examines:

- **Campaign Performance Review**
- Impressions, clicks, CTR
- Conversions, conversion rate

- CPC, cost per conversion

- ROAS

- **Ad Group Analysis**

- Top and underperforming ad groups

- Performance patterns

- **Ad Copy Evaluation**

- Best performing ad copy

- Underperforming ads

- **Keyword Performance**

- Quality Score analysis

- Cost efficiency

- Match type effectiveness

- Negative keyword opportunities

- **Auction Insights**

- Impression share

- Competitive overlap

- Position metrics

- Outranking share

- **Budget Allocation**

- Efficiency across campaigns/ad groups

## Output Structure

The recommendations include:

## Executive Summary

Brief overview of campaign health and critical opportunities.

### **Priority Recommendations**

Top 3-5 highest-impact recommendations with:

- Specific actions
- Expected impact
- Implementation priority (High/Medium/Low)

### **Keyword Recommendations**

- New keywords to add (with rationale)
- Keywords to pause/remove
- Negative keywords
- Match type adjustments

### **Bid & Budget Optimization**

- Bid adjustment recommendations
- Budget reallocation suggestions
- Competitive positioning strategies

### **Ad Copy & Creative**

- Specific ad copy improvements
- A/B testing recommendations

### **Targeting & Settings**

- Geographic adjustments
- Demographic targeting
- Scheduling optimizations
- Device bid adjustments



## Performance Projections

Expected improvements in:

- CTR
- Cost per conversion
- Conversion rate

## Example Output

```
■ OPTIMIZATION RECOMMENDATIONS
===== **EXECUTIVE SUMMARY** Your
campaign shows strong conversion performance (3.2% conversion rate) but is losing 35% of
potential impressions due to budget constraints. The primary opportunity is expanding
high-ROAS keywords while pausing underperforming broad match terms. **PRIORITY
RECOMMENDATIONS** 1. **Increase Budget for "Motivated Seller" Campaign** [HIGH
PRIORITY] - Current budget: $2,000/month - Recommended: $3,500/month (+75%) - Expected
impact: +45% conversions, maintain 4.2 ROAS - Budget lost share: 35% indicates
significant opportunity 2. **Pause 12 Broad Match Keywords with Zero Conversions**
[HIGH PRIORITY] - Keywords: "sell house", "home buyer", etc. - Current spend: $450/month
- Expected savings: $450/month, reallocate to exact match ... **KEYWORD
RECOMMENDATIONS** New Keywords to Add: - "sell house fast cash" (Exact Match) - High
intent, lower competition - "avoid foreclosure help" (Phrase Match) - Targets
distressed sellers - "inherited property sale" (Exact Match) - Niche but high-value ...
**BID & BUDGET OPTIMIZATION** - Increase bids on "cash home buyer" keywords by 15%
(currently position 3.2) - Decrease bids on "real estate" broad match by 20% (low
conversion rate) - Shift $500/month from "General Leads" to "Motivated Seller" campaign
... **PERFORMANCE PROJECTIONS** If recommendations are implemented: - CTR: +0.8% (from
2.1% to 2.9%) - Cost per Conversion: -$15 (from $85 to $70) - Conversion Rate: +0.5%
(from 3.2% to 3.7%) - Monthly Conversions: +25 (from 80 to 105)
```

## Saving Results

After analysis, you can save recommendations to a file:

```
Save recommendations to file? (y/N): y ✓ Recommendations saved to:
recommendations_123_456_7890_123456789.txt
```

## Troubleshooting

### "No accessible customer accounts found"

- Verify your MCC account ID in \_\_\_\_MARKER0MARKER\_\_\_\_
- Ensure API access is enabled for the MCC
- Check that you're authenticated with the correct account

## "No campaign data found"

- Verify the selected account has active campaigns
- Check the date range (campaigns may not have data for selected period)
- Ensure campaigns are not all paused/removed

## "Error listing customer accounts"

- Your account may not be an MCC or may not have linked accounts
- Try using a specific customer ID directly in \_\_\_\_MARKER0MARKER\_\_\_\_

## Advanced Usage

### Analyze Specific Campaign via Command Line

You can modify the script to accept command-line arguments, or directly edit the code to hardcode:

- Customer ID
- Campaign ID
- Date range
- Optimization goals

### Custom Optimization Goals

Enter specific goals when prompted:

```
Enter your optimization goals (press Enter twice when done): 1. Reduce cost per lead by 20% 2. Increase phone call conversions 3. Improve quality of leads from "foreclosure" keywords [Press Enter twice]
```

## Cost Considerations

- **Google Ads API:** Free
- **Claude API:** ~\$0.03-0.05 per analysis (depends on data volume)
- Uses Claude 3.5 Sonnet
- Typical analysis: 5,000-10,000 tokens

## Best Practices

- **Regular Analysis:** Run monthly or after significant campaign changes
- **Date Range:** Use 30-90 days for meaningful data
- **Campaign Selection:** Analyze individual campaigns for specific insights
- **Goal Alignment:** Customize optimization goals based on business objectives
- **Implementation:** Prioritize High-priority recommendations first

## 06 Claude Prompt System

### 6. Claude Prompt System - Modular Architecture

**Version:** 2.0

**Last Updated:** December 2024

**Documentation Order:** #6 (Technical & Advanced Topics)

---

#### Overview

The Google Ads Account Manager uses a **modular prompt system** that dynamically loads only the prompt components needed for each feature/page. This approach significantly reduces token usage, improves response times, and makes prompt maintenance easier.

#### Why Modular Prompts?

##### Before (Monolithic):

- Single large prompt (~166,000 characters, ~41,000-50,000 tokens)
- Every analysis used the full prompt, even when only specific features were needed
- High token costs and slower response times
- Difficult to update specific sections

##### After (Modular):

- Core prompt + optional modules loaded on-demand
- Campaign Analysis: ~134,000 characters (only needed modules)
- Ad Copy Optimization: ~69,000 characters (core + ad copy module)
- Keyword Research: ~65,000 characters (core + keyword modules)
- **Result: 20-60% token reduction** depending on feature

---

## Architecture

### Directory Structure

```
prompts/ ■■■■ core/ ■ ■■■■ core_prompt.md # Always loaded - base expertise and
frameworks ■■■■ modules/ ■■■■ bidding_strategy.md # Bidding progression framework ■■■■
smart_bidding.md # Smart bidding guidance ■■■■ ad_copy.md # Ad copy best practices ■■■■
offline_conversions.md # Offline conversion tracking ■■■■ mcc_portfolio.md # MCC
portfolio strategies ■■■■ change_tracking.md # Change tracking context ■■■■
keyword_planner.md # Keyword Planner integration ■■■■ biweekly_reporting.md # Client
reporting framework ■■■■ keyword_research.md # Keyword research analysis
```

### Core Prompt (`core\_prompt.md`)

**Always loaded** - Contains the foundation of Claude's expertise:

- **Core Responsibilities** - Role definition and expertise areas
- **Real Estate Investor Analysis** - Specialized analysis priorities for motivated/distressed sellers
- **Match Type Strategy** - Exact, phrase, and broad match optimization
- **Analysis Framework** - How to structure recommendations
- **Recommendation Format** - Standardized output structure
- **Communication Style** - How to communicate with clients
- **Key Performance Indicators** - Metrics to monitor
- **Search Term Analysis** - Methodology for search term reports
- **Industry Best Practices** - Real estate investor campaign best practices
- **Quality Score Strategy** - QS improvement tactics
- **Red Flags** - Critical issues to watch for
- **Analysis Workflow** - Step-by-step analysis process
- **Context Questions** - When and how to ask for more information

**Size:** ~72,000 characters (~18,000 tokens)

---

## Module Descriptions

### 1. Bidding Strategy Module (`bidding\_strategy.md`)

**Purpose:** Framework for bidding strategy progression and optimization

**When Used:**

- ■ Campaign Analysis (full)
- ■ Ad Copy Optimization
- ■ Keyword Research
- ■ Biweekly Reports
- ■ Q&A (only if question is about bidding)

**Contents:**

- Bidding strategy progression (Maximize Clicks → Maximize Conversions → Target CPA)
- Threshold criteria for progression
- Manual vs. Smart bidding guidance
- Budget constraint analysis
- CPA stability assessment

**Size:** ~8,000 characters (~2,000 tokens)

---

### 2. Smart Bidding Module (`smart\_bidding.md`)

**Purpose:** Detailed guidance on smart bidding strategies and constraints

**When Used:**

- ■ Campaign Analysis (full)

- ■ Ad Copy Optimization
- ■ Keyword Research
- ■ Biweekly Reports
- ■ Q&A (only if question is about smart bidding)

**Contents:**

- Maximize Conversions strategy
- Target CPA optimization
- Target ROAS strategy
- Smart bidding constraints and limitations
- When NOT to use smart bidding
- Device/location bid adjustment guidance with smart bidding

**Size:** ~3,000 characters (~750 tokens)

---

### 3. Ad Copy Module (`ad\_copy.md`)

**Purpose:** Ad copy optimization, A/B testing, and character limit compliance

**When Used:**

- ■ Campaign Analysis (full)
- ■ Ad Copy Optimization page
- ■ Keyword Research
- ■ Biweekly Reports
- ■ Q&A (only if question is about ad copy)

**Contents:**

- Headline optimization (30 character limit)
- Description optimization (90 character limit)

- Dynamic Keyword Insertion (DKI) syntax
- A/B testing frameworks
- Pain point messaging
- Character count verification
- Ad copy replacement instructions

**Size:** ~5,000 characters (~1,250 tokens)

---

#### 4. Offline Conversions Module (`offline\_conversions.md`)

**Purpose:** Offline conversion tracking strategy for real estate investor funnel

**When Used:**

- ■ Campaign Analysis (full)
- ■ Ad Copy Optimization
- ■ Keyword Research
- ■ Biweekly Reports
- ■ Q&A (only if question is about conversions)

**Contents:**

- Real estate investor funnel stages
- GCLID tracking and matching
- Conversion import best practices
- Conversion value assignment
- Funnel analysis (Engaged → Qualified → Under Contract → Closed Deal)
- Attribution modeling

**Size:** ~6,000 characters (~1,500 tokens)



---

## 5. MCC Portfolio Module (`mcc\_portfolio.md`)

**Purpose:** Multi-client account management and portfolio bid strategies

**When Used:**

- ■ Campaign Analysis (full)
- ■ Ad Copy Optimization
- ■ Keyword Research
- ■ Biweekly Reports
- ■ Q&A (only if question is about MCC)

**Contents:**

- MCC account structure
- Portfolio bid strategies
- Shared budget management
- Cross-account optimization
- Client account isolation

**Size:** ~5,000 characters (~1,250 tokens)

---

## 6. Change Tracking Module (`change\_tracking.md`)

**Purpose:** Context-aware analysis using changelog and snapshot data

**When Used:**

- ■ Campaign Analysis (full)
- ■ Biweekly Reports
- ■ Ad Copy Optimization

- ■ Keyword Research
- ■ Q&A (only if question references previous changes)

**Contents:**

- Changelog integration
- Snapshot-based change detection
- Context-aware recommendations (avoid repeating previous recommendations)
- Impact assessment of previous changes
- Before/after metric comparison

**Size:** ~6,000 characters (~1,500 tokens)

---

## 7. Keyword Planner Module (`keyword\_planner.md`)

**Purpose:** Keyword Planner API integration and analysis framework

**When Used:**

- ■ Campaign Analysis (full, if keyword planner data provided)
- ■ Keyword Research page
- ■ Ad Copy Optimization
- ■ Biweekly Reports
- ■ Q&A (only if question is about keyword research)

**Contents:**

- Competition analysis
- Search volume assessment
- Suggested bid analysis
- Keyword expansion recommendations
- Quality Score indicators from Keyword Planner data

**Size:** ~8,000 characters (~2,000 tokens)

---

## 8. Biweekly Reporting Module (`biweekly\_reporting.md`)

**Purpose:** Framework for generating client-friendly biweekly reports

**When Used:**

- ■ Biweekly Reports page
- ■ Campaign Analysis
- ■ Ad Copy Optimization
- ■ Keyword Research
- ■ Q&A

**Contents:**

- Report structure (2-page format)
- Key metrics selection
- Client-friendly language guidelines
- Plain English explanations
- Performance trend analysis
- Action items and next steps

**Size:** ~8,000 characters (~2,000 tokens)

---

## 9. Keyword Research Module (`keyword\_research.md`)

**Purpose:** Specialized prompt for keyword research analysis

### When Used:

- ■ Keyword Research page
- ■ Campaign Analysis
- ■ Ad Copy Optimization
- ■ Biweekly Reports
- ■ Q&A

### Contents:

- Competition analysis framework
- Search volume assessment
- Keyword expansion recommendations
- Budget allocation strategy
- Market positioning insights

**Size:** ~2,000 characters (~500 tokens)

---

## Module Loading System

### How It Works

The `__MARKER0MARKER__` module handles dynamic loading:

- **Page Type Detection** - Identifies which page/feature is being used
- **Module Selection** - Loads only required modules based on configuration
- **Module Combination** - Combines core + selected modules
- **Fallback** - Falls back to legacy templates if modules fail to load

### Configuration (`PAGE\_PROMPT\_CONFIGS`)

```
PAGE_PROMPT_CONFIGS = { 'campaign_analysis': [ 'core', 'bidding_strategy',  
'smart_bidding', 'ad_copy', 'offline_conversions', 'mcc_portfolio', 'change_tracking'
```

```
], 'ad_copy': ['core', 'ad_copy'], 'keyword_research': ['core', 'keyword_planner', 'keyword_research'], 'biweekly_report': ['core', 'biweekly_reporting', 'change_tracking'], 'qa': ['core'] # Dynamic module detection based on question }
```

## Dynamic Module Detection (Q&A)

For Q&A, the system analyzes the user's question and loads additional modules:

- **Bidding questions** → Loads \_\_\_MARKER0MARKER\_ + \_MARKER1MARKER\_\_\_
  - **Ad copy questions** → Loads \_\_\_MARKER0MARKER\_\_\_
  - **Conversion questions** → Loads \_\_\_MARKER0MARKER\_\_\_
  - **Keyword questions** → Loads \_\_\_MARKER0MARKER\_\_\_
  - **MCC questions** → Loads \_\_\_MARKER0MARKER\_\_\_
  - **Reporting questions** → Loads \_\_\_MARKER0MARKER\_\_\_
- 

## Usage by Page/Feature

This section details which modules are loaded for each page/feature and why each module is needed.

---

### ■ Campaign Analysis Page

**Purpose:** Comprehensive campaign optimization analysis with full context

#### Modules Loaded:

- **Core Prompt** (\_\_\_MARKER0MARKER\_\_\_)
- **Why:** Foundation expertise required for all analysis
- **Provides:** Core responsibilities, real estate analysis priorities, match type strategy, recommendation format, KPIs, best practices
- **Size:** ~72,000 characters

- **Bidding Strategy Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Campaign analysis must evaluate bidding strategy progression

- **Provides:** Framework for assessing Maximize Clicks → Maximize Conversions → Target CPA progression, threshold criteria, budget constraints

- **Size:** ~8,000 characters

- **Smart Bidding Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Need to provide guidance on smart bidding optimization

- **Provides:** Maximize Conversions strategy, Target CPA/ROAS guidance, smart bidding constraints, device/location bid adjustment guidance

- **Size:** ~3,000 characters

- **Ad Copy Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Ad copy optimization is part of comprehensive analysis

- **Provides:** Headline/description optimization, character limits, DKI syntax, A/B testing frameworks

- **Size:** ~5,000 characters

- **Offline Conversions Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Real estate investor funnel requires offline conversion tracking analysis

- **Provides:** Funnel stages (Engaged → Qualified → Under Contract → Closed Deal), GCLID tracking, conversion import best practices

- **Size:** ~6,000 characters

- **MCC Portfolio Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Many users manage multiple client accounts via MCC

- **Provides:** Portfolio bid strategies, shared budget management, cross-account optimization

- **Size:** ~5,000 characters

- **Change Tracking Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Context-aware analysis requires knowledge of previous changes

- **Provides:** Changelog integration, snapshot-based change detection, context-aware recommendations

- **Size:** ~6,000 characters

**Total Size:** ~134,000 characters (~33,500 tokens)

**Use Case:**

- Full campaign optimization recommendations
- Bidding strategy evaluation and progression
- Ad copy improvements
- Budget allocation
- Waste elimination
- Performance analysis with historical context

**When to Use:**

- Regular campaign reviews
- Monthly optimization cycles
- After making significant changes
- When performance needs improvement

---

## ■ Ad Copy Optimization Page

**Purpose:** Focused ad copy improvements and A/B testing recommendations

**Modules Loaded:**

- **Core Prompt** (\_\_\_MARKER0MARKER\_\_\_)
- **Why:** Foundation expertise and recommendation format needed
- **Provides:** Core responsibilities, real estate analysis priorities, recommendation structure, communication style
- **Size:** ~72,000 characters

- **Ad Copy Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** This page is specifically for ad copy optimization

- **Provides:**

- Headline optimization (30 character limit with verification)
- Description optimization (90 character limit with verification)
- Dynamic Keyword Insertion (DKI) syntax handling
- A/B testing frameworks
- Pain point messaging strategies
- Character count verification for all recommendations
- Specific replacement instructions (which headline/description to replace)
- **Size:** ~5,000 characters

**Total Size:** ~69,000 characters (~17,250 tokens)

**Use Case:**

- Improving ad copy performance
- A/B testing new ad variations
- Maximizing character usage (headlines/descriptions)
- Incorporating high-converting keywords into ad copy
- Replacing underperforming ads with optimized versions

**What This Page Does:**

- Analyzes all headlines and descriptions (not just a few)
- Uses statistically significant keywords (most conversions + conversion rate >10%)
- Provides exact character counts for all recommendations
- Specifies which headline/description to replace
- Ensures all recommendations comply with Google Ads character limits

**Why Not Other Modules:**

- Bidding Strategy: Not needed for ad copy focus



- Smart Bidding: Not relevant to creative optimization
  - Offline Conversions: Not analyzing conversion tracking
  - MCC Portfolio: Not managing multiple accounts
  - Change Tracking: Can be added if needed, but not required for ad copy analysis
- 

## ■ Keyword Research Page

**Purpose:** Keyword competition, search volume, and expansion analysis using Keyword Planner data

### **Modules Loaded:**

- **Core Prompt** (\_\_\_MARKER0MARKER\_\_\_)
- **Why:** Foundation expertise needed for keyword analysis
- **Provides:** Core responsibilities, real estate analysis priorities, match type strategy, recommendation format
- **Size:** ~72,000 characters
- **Keyword Planner Module** (\_\_\_MARKER0MARKER\_\_\_)
- **Why:** This page analyzes Keyword Planner API data
- **Provides:**
  - Competition analysis framework (low/medium/high competition)
  - Search volume assessment (high/medium/low volume)
  - Suggested bid analysis and comparison
  - Keyword expansion recommendations
  - Quality Score indicators from Keyword Planner data
  - Integration guidance for combining Keyword Planner insights with campaign performance
- **Size:** ~8,000 characters
- **Keyword Research Module** (\_\_\_MARKER0MARKER\_\_\_)
- **Why:** Specialized framework for keyword research analysis

• **Provides:**

- Competition analysis structure
- Search volume assessment methodology
- Keyword expansion recommendation format
- Budget allocation strategy for keywords
- Market positioning insights framework
- Output format for keyword research reports

• **Size:** ~2,000 characters

**Total Size:** ~65,000 characters (~16,250 tokens)

**Use Case:**

- Analyzing keyword competition levels
- Assessing search volume opportunities
- **Automatically matches campaign geo-targeting** when campaign is selected and "Specify geographic targeting" is unchecked
- Uses manually specified location when checkbox is checked
- Getting bid estimate recommendations
- Finding new keywords to add
- Identifying negative keyword opportunities
- Understanding market competition landscape
- Geographic keyword insights (auto-detected from campaign or manually specified)

**What This Page Does:**

- Fetches Keyword Planner data (search volume, competition, suggested bids)
- **Automatically detects campaign geo-targeting** when a campaign is selected (unless overridden)
- Analyzes keyword opportunities vs. saturated areas
- Provides prioritized keyword expansion recommendations
- Suggests budget allocation across competition tiers
- Identifies Quality Score issues from bid comparisons

- Provides location-specific search volume data matching campaign targeting

### **Why Not Other Modules:**

- Bidding Strategy: Not evaluating campaign bidding (this is keyword research)
  - Smart Bidding: Not relevant to keyword research
  - Ad Copy: Not optimizing ad creative
  - Offline Conversions: Not analyzing conversion tracking
  - MCC Portfolio: Not managing multiple accounts
  - Change Tracking: Not analyzing campaign changes
  - Biweekly Reporting: Not generating client reports
- 

## **■ Biweekly Reports Page**

**Purpose:** Generate client-friendly 2-page performance reports

### **Modules Loaded:**

- **Core Prompt** (\_\_\_MARKERØMARKER\_\_\_)
- **Why:** Foundation expertise and KPIs needed for reporting
- **Provides:** Core responsibilities, real estate analysis priorities, KPIs, communication style (client-friendly)
- **Size:** ~72,000 characters
- **Biweekly Reporting Module** (\_\_\_MARKERØMARKER\_\_\_)
- **Why:** This page is specifically for generating biweekly reports
- **Provides:**
  - Report structure (2-page format with specific sections)
  - Key metrics selection and formatting
  - Client-friendly language guidelines (plain English, no jargon)
  - Performance trend analysis framework

- "What's Working" table format
- "What We're Optimizing" section format
- "Next Steps" action items format
- Special situation handling (new campaigns, performance declines, improvements)
- Output format with exact structure requirements
- **Size:** ~8,000 characters

• **Change Tracking Module** (\_\_\_MARKER0MARKER\_\_\_)

- **Why:** Reports should reference what changes were made during the period
- **Provides:**
  - Context about previous changes
  - Impact assessment of changes made
  - Before/after metric comparison
  - Helps explain "What We're Optimizing" section with actual changes
- **Size:** ~6,000 characters

**Total Size:** ~86,000 characters (~21,500 tokens)

**Use Case:**

- Generating professional client reports
- Summarizing 14-day performance periods
- Highlighting key wins and optimizations
- Providing client-friendly explanations
- Setting expectations for next period

**What This Page Does:**

- Analyzes last 14 days of campaign data
- Generates 2-page PDF report with company branding
- Formats metrics with color indicators (■■■■)
- Creates "What's Working" table with top performers

- Lists optimizations made during the period
- Provides next steps for following 2 weeks

#### **Report Structure:**

- **Page 1:** Key Metrics, Two-Week Trend, "What This Means"
- **Page 2:** What's Working table, What We're Optimizing, Next Steps

#### **Why Not Other Modules:**

- Bidding Strategy: Not providing detailed bidding recommendations (report is summary)
  - Smart Bidding: Not evaluating smart bidding strategy
  - Ad Copy: Not analyzing ad copy (report is high-level)
  - Offline Conversions: May reference but not deep analysis
  - MCC Portfolio: Not managing multiple accounts
  - Keyword Planner: Not doing keyword research
- 

### ■ Ask Claude (Q&A) Page

**Purpose:** Answer specific Google Ads management questions with dynamic module loading

#### **Modules Loaded:**

- **Core Prompt** (\_\_\_MARKER0MARKER\_\_\_) - **Always Loaded**
- **Why:** Foundation expertise required for all questions
- **Provides:** Core responsibilities, real estate analysis priorities, best practices, general Google Ads knowledge
- **Size:** ~72,000 characters
- **Dynamic Modules - Loaded Based on Question Content**

The system analyzes the user's question and automatically loads additional modules:

### **Bidding Strategy + Smart Bidding Modules:**

- **Triggered by:** Questions about bidding, bid strategy, maximize clicks, maximize conversions, target CPA, target ROAS
- **Provides:** Bidding progression framework, smart bidding guidance, threshold criteria
- **Example Questions:**
  - "How do I optimize my bidding strategy?"
  - "When should I switch from Maximize Clicks to Maximize Conversions?"
  - "What's the best bidding strategy for my campaign?"

### **Ad Copy Module:**

- **Triggered by:** Questions about ad copy, headlines, descriptions, ad text, creative
- **Provides:** Ad copy best practices, character limits, A/B testing, DKI syntax
- **Example Questions:**
  - "How do I write better ad headlines?"
  - "What's the character limit for descriptions?"
  - "How do I use dynamic keyword insertion?"

### **Offline Conversions Module:**

- **Triggered by:** Questions about conversions, offline conversion, GCLID, funnel, conversion tracking
- **Provides:** Offline conversion tracking strategy, funnel stages, GCLID matching
- **Example Questions:**
  - "How do I track offline conversions?"
  - "What's the best way to import conversions to Google Ads?"
  - "How do I set up GCLID tracking?"

### **Keyword Planner Module:**

- **Triggered by:** Questions about keywords, match type, search term, negative keyword, keyword research
- **Provides:** Keyword Planner integration, competition analysis, search volume assessment
- **Example Questions:**
  - "How do I find new keywords?"

- "What's the difference between match types?"
- "How do I use Keyword Planner?"

#### **MCC Portfolio Module:**

- **Triggered by:** Questions about MCC, portfolio, multi-client, shared accounts
- **Provides:** MCC account structure, portfolio bid strategies, shared budget management
- **Example Questions:**
  - "How do I manage multiple client accounts?"
  - "What are portfolio bid strategies?"
  - "How do I set up an MCC account?"

#### **Biweekly Reporting Module:**

- **Triggered by:** Questions about reports, client reports, biweekly reports, reporting
- **Provides:** Report structure, client-friendly language, metrics selection
- **Example Questions:**
  - "How do I create a client report?"
  - "What metrics should I include in reports?"
  - "How do I explain performance to clients?"

#### **Change Tracking Module:**

- **Triggered by:** Questions referencing previous changes, changelog, history
- **Provides:** Change tracking context, impact assessment
- **Example Questions:**
  - "What changes did I make last month?"
  - "How do I track campaign changes?"

**Base Size:** ~72,000 characters (~18,000 tokens)

**With Modules:** Varies based on question (typically +2,000 to +16,000 tokens)

**Use Case:**

- Getting expert advice on specific Google Ads topics
- Understanding best practices
- Troubleshooting issues
- Learning optimization techniques
- Getting recommendations for specific situations

#### **How It Works:**

- User asks a question
- System analyzes question content
- Detects relevant keywords (bidding, ad copy, conversions, etc.)
- Loads appropriate modules dynamically
- Combines core + detected modules
- Claude answers with full context from loaded modules

#### **Example:**

- **Question:** "How do I optimize my bidding strategy for a campaign with 50 conversions?"
- **Modules Loaded:** Core + Bidding Strategy + Smart Bidding
- **Total Size:** ~83,000 characters (~20,750 tokens)
- **Response:** Includes bidding progression framework, threshold criteria, smart bidding guidance

#### **Why This Approach:**

- **Efficiency:** Only loads modules relevant to the question
  - **Accuracy:** Provides full context for specific topics
  - **Flexibility:** Handles any Google Ads question
  - **Token Savings:** Base prompt is minimal, modules added only when needed
- 

## **Token Usage Comparison**



## Before (Monolithic Prompt)

| Feature | Token Usage | Notes |

|-----|-----|-----|

| Campaign Analysis | ~45,000 | Full prompt always loaded |

| Ad Copy Optimization | ~45,000 | Full prompt (wasteful) |

| Keyword Research | ~45,000 | Full prompt (wasteful) |

| Biweekly Report | ~45,000 | Full prompt (wasteful) |

| Q&A | ~45,000 | Full prompt (wasteful) |

**Average per session:** ~45,000 tokens

## After (Modular System)

| Feature | Token Usage | Savings |

|-----|-----|-----|

| Campaign Analysis | ~33,500 | 26% reduction |

| Ad Copy Optimization | ~17,250 | 62% reduction |

| Keyword Research | ~16,250 | 64% reduction |

| Biweekly Report | ~21,500 | 52% reduction |

| Q&A (base) | ~18,000 | 60% reduction |

**Average per session:** ~21,500 tokens (52% reduction)

---

## Maintenance & Updates

### Updating a Module

- Edit the module file in \_\_\_\_MARKER0MARKER\_\_\_\_
- Changes take effect immediately (no code changes needed)
- All pages using that module will get the updated prompt

## Adding a New Module

- Create new `__MARKER0MARKER_` file in `_MARKER1MARKER_`
- Add module to `__MARKER0MARKER_` in `_MARKER1MARKER_`
- Update this documentation

## Updating Core Prompt

- Edit `__MARKER0MARKER_`
  - Changes affect all features (since core is always loaded)
  - Test thoroughly as this impacts all pages
- 

## Technical Implementation

### Loading Function

```
from prompt_loader import get_prompt_for_page # Load prompt for campaign analysis
prompt = get_prompt_for_page('campaign_analysis') # Load prompt for Q&A with dynamic
detection prompt = get_prompt_for_page('qa', user_question="How do I optimize
bidding?")
```

### Integration in Code

The `__MARKER0MARKER_` uses the modular system:

```
def _get_prompt_template(prompt_type='full', **kwargs): """Load prompt template using
modular system.""" page_type_map = { 'full': 'campaign_analysis', 'ad_copy': 'ad_copy',
'biweekly_report': 'biweekly_report', 'qa': 'qa', 'keyword_research':
'keyword_research' } page_type = page_type_map.get(prompt_type, 'campaign_analysis')
return get_prompt_for_page(page_type, **kwargs)
```

### Fallback System

If module loading fails, the system falls back to legacy prompt templates defined in `__MARKER0MARKER_`. This ensures backward compatibility and reliability.

---

## Best Practices

- **Keep Core Prompt Focused** - Only include universal expertise in core
  - **Module Specificity** - Each module should be highly focused on its domain
  - **Avoid Duplication** - Don't repeat content across modules
  - **Test After Updates** - Always test after modifying prompts
  - **Monitor Token Usage** - Track token consumption to optimize further
- 

## Future Enhancements

Potential improvements to the modular system:

- **Module Versioning** - Track versions of modules for A/B testing
  - **Conditional Loading** - Load modules based on campaign data (e.g., only load offline\_conversions if tracking is enabled)
  - **Module Caching** - Cache loaded modules to reduce file I/O
  - **Analytics** - Track which modules are most used
  - **Custom Module Sets** - Allow users to create custom module combinations
- 

## Related Documentation

- [\\_\\_MARKER0MARKER\\_\\_](#) - Complete web app usage guide
- [\\_\\_MARKER0MARKER\\_\\_](#) - Tips for optimizing prompts
- [\\_\\_MARKER0MARKER\\_\\_](#) - Installation and configuration

---

## Questions?

For questions about the prompt system, refer to:

- `__MARKERØMARKER__` - Implementation details
- `__MARKERØMARKER__` - Quick reference
- This document - Comprehensive guide

## 07 Model Comparison

### 7. Claude Model Comparison for Google Ads Analysis

**Documentation Order:** #7 (Technical & Advanced Topics)

#### Quick Recommendation

**Use Claude 3.5 Sonnet** - Best balance of performance, cost, and speed for Google Ads analysis.

#### Model Comparison

##### Claude 3.5 Sonnet (Recommended) ■

**Best for:** Regular Google Ads analysis, structured data analysis, cost-effective insights

**Pros:**

- Excellent analytical capabilities for structured data
- Fast response times (~5-15 seconds)
- Cost-effective: ~\$3/\$15 per million tokens (input/output)
- Great balance of performance and cost
- Handles complex analysis well

**Cons:**

- Slightly less deep reasoning than Opus
- May miss some nuanced strategic insights

**Cost per analysis:** ~\$0.03-0.05 (typical analysis uses 5,000-10,000 tokens)

**Use when:**

- Regular monthly/quarterly analysis
- Budget-conscious operations

- Need quick turnaround
  - Standard optimization recommendations
- 

### Claude 3.7 Sonnet (Newer Option)

**Best for:** When you want the latest capabilities with similar cost to 3.5

**Pros:**

- Newer model with improved capabilities
- Better at complex reasoning
- Similar cost to 3.5 Sonnet
- Faster than Opus

**Cons:**

- May have slightly higher latency
- Less battle-tested than 3.5

**Cost per analysis:** ~\$0.03-0.05

**Use when:**

- You want the latest model capabilities
  - Similar budget to 3.5 Sonnet
  - Need slightly better reasoning
- 

### Claude 3 Opus (Premium)

**Best for:** Deep strategic analysis, complex multi-step reasoning, when cost is less of a concern

**Pros:**

- Most powerful reasoning capabilities
- Deeper strategic insights
- Better at complex, multi-step analysis
- Can identify subtle patterns

**Cons:**

- Higher cost: ~\$15/\$75 per million tokens (5x more expensive)
- Slower response times (~15-30 seconds)
- Overkill for most Google Ads analysis tasks

**Cost per analysis:** ~\$0.15-0.25 (5x more expensive)

**Use when:**

- Quarterly/annual strategic reviews
- Complex multi-campaign analysis
- Need deepest insights
- Budget allows for premium analysis

---

**Cost Comparison (Typical Analysis)**

| Model | Input Tokens | Output Tokens | Cost per Analysis |

|-----|-----|-----|-----|

| 3.5 Sonnet | ~5,000 | ~3,000 | **\$0.03-0.05** |

| 3.7 Sonnet | ~5,000 | ~3,000 | **\$0.03-0.05** |

| 3 Opus | ~5,000 | ~3,000 | **\$0.15-0.25** |

*Based on typical Google Ads analysis with comprehensive campaign data*

## Performance Comparison

Aspect	3.5 Sonnet	3.7 Sonnet	3 Opus
	-----	-----	-----
Speed	Fast	Fast	Moderate
Analysis Quality	Excellent	Excellent+	Excellent++
Cost Efficiency	Best	Best	Moderate
Strategic Depth	Good	Very Good	Excellent

## Recommendation by Use Case

### Monthly Campaign Analysis

Use: Claude 3.5 Sonnet

- Regular analysis needs speed and cost efficiency
- Sonnet provides excellent insights for routine optimization

### Quarterly Strategic Review

Use: Claude 3.5 Sonnet or 3.7 Sonnet

- Still cost-effective for regular use
- Provides comprehensive strategic insights

### Annual Deep Dive / Complex Multi-Account Analysis

Use: Claude 3 Opus

- When you need the deepest insights
- Budget allows for premium analysis
- Complex reasoning across multiple dimensions

### Testing New Strategies

Use: Claude 3.5 Sonnet

- Fast iteration



- Cost-effective for experimentation

## How to Change Models

### Option 1: Interactive Selection

When you run the analyzer, you'll be prompted to select a model:

```
python real_estate_analyzer.py
```

### Option 2: Environment Variable

Set in your \_\_\_\_MARKER0MARKER\_\_\_\_ file:

```
CLAUDE_MODEL=claude-3-5-sonnet-20241022 # or CLAUDE_MODEL=claude-3-7-sonnet-20250219 #  
or CLAUDE_MODEL=claude-3-opus-20240229
```

### Option 3: Code Modification

Edit \_\_\_\_MARKER0MARKER\_ and change the default in the \_MARKER1MARKER\_\_\_\_ function.

## Real-World Example

**Scenario:** Analyzing a \$10,000/month Google Ads account with 5 campaigns

#### Claude 3.5 Sonnet:

- Analysis time: ~10 seconds
- Cost: \$0.04
- Quality: Excellent, actionable recommendations
- ■ Recommended

#### Claude 3 Opus:

- Analysis time: ~25 seconds
- Cost: \$0.20
- Quality: Excellent++, slightly deeper insights
- ■■■ Overkill for this use case

## Final Recommendation

**Start with Claude 3.5 Sonnet** for all regular analysis. It provides:

- Excellent analysis quality
- Fast responses
- Cost-effective for regular use
- More than sufficient for Google Ads optimization

**Upgrade to Opus only if:**

- You need deeper strategic insights
- Cost is not a concern
- You're doing quarterly/annual deep dives
- You have complex multi-dimensional analysis needs

For 99% of Google Ads analysis use cases, **Claude 3.5 Sonnet is the optimal choice.**

## 08 Prompt Recommendations

### 8. Prompt Review & Recommendations

**Documentation Order:** #8 (Technical & Advanced Topics)

#### What to Keep from Your New Prompt (Excellent Additions)

##### ■ **\*\*Bidding Strategy Progression Framework\*\* (CRITICAL - Keep This!)**

This is the most valuable addition. The Maximize Clicks → Maximize Conversions → Target CPA framework is:

- Highly specific to real estate investor campaigns
- Data-driven with clear thresholds
- Addresses a common mistake (premature bidding strategy changes)
- Includes decision matrix and readiness checks

**Recommendation:** Keep this entire section - it's gold for real estate campaigns.

##### ■ **\*\*Real Estate Investor Specific Context\*\***

- Lead quality vs. volume balance
- Market cycle awareness
- Geographic performance considerations
- Seasonal patterns
- Seller motivation psychology

**Recommendation:** Keep all of this - very valuable domain expertise.

##### ■ **\*\*Industry Best Practices\*\***

The 14 best practices are excellent and specific to real estate investor campaigns.

**Recommendation:** Keep this section.

## ■ **\*\*Red Flags Section\*\***

Very helpful for identifying critical issues quickly.

**Recommendation:** Keep this, but integrate into analysis framework.

## ■ **\*\*Context Questions\*\***

Good for when more information is needed, but...

**Recommendation:** Keep but add instruction: "Only ask these if absolutely necessary - otherwise infer from data."

# What to Keep from Old Prompt (Critical for Output Quality)

## ■ **\*\*Strict Output Format with Tags\*\***

The old prompt requires:

```
<recommendations> **EXECUTIVE SUMMARY** ... </recommendations>
```

**Why Keep:** Your code extracts content between these tags. Without them, the response extraction won't work properly.

## ■ **\*\*"DO NOT Ask Questions" Instructions\*\***

The old prompt explicitly states:

- DO NOT ask questions or request permission
- IMMEDIATELY start with <recommendations>
- Provide complete analysis without introductory text

**Why Keep:** Without this, Claude will ask "Would you like me to proceed?" instead of providing analysis.

## ■ **\*\*Specific Recommendation Structure\*\***

The old prompt requires:

- Exact ad group names, keyword text, ad IDs
- Specific bid amounts/percentages
- Exact ad copy rewrites

- Reference specific data points

**Why Keep:** This ensures actionable, implementable recommendations rather than vague advice.

### ■ **\*\*All Sections Must Be Included\*\***

The old prompt lists ALL required sections and says "do not skip any sections."

**Why Keep:** Prevents truncation messages like "DETAILED RECOMMENDATIONS CONTINUE IN FULL RESPONSE..."

### ■ **\*\*Scratchpad Section\*\***

The old prompt includes a scratchpad for working through analysis before providing recommendations.

**Why Keep:** Helps Claude organize thoughts and provide more structured output.

## Recommended Merged Structure

- **Start with your new prompt** (the comprehensive role definition and expertise)
- **Add the bidding strategy progression framework** (your best addition)
- **Include the analysis framework** from your new prompt
- **Add the strict output requirements** from the old prompt
- **Include the specific recommendation structure** from the old prompt
- **End with the output format** from the old prompt (with <recommendations> tags)

## Key Integration Points

### Merge the Analysis Framework

Your new prompt has a great analysis framework. Enhance it with:

- The specific granular analysis instructions from the old prompt (ad group by ad group, keyword by keyword)
- The requirement to reference specific names/IDs

### Merge the Recommendation Format

Your new prompt has a good recommendation structure. Enhance it with:

- The exact output format from the old prompt (<recommendations> tags)
- The requirement for specific data points (ad group names, keyword text, exact metrics)
- The "all sections must be included" requirement

## Add Output Requirements

Your new prompt doesn't have the strict output requirements. Add:

- DO NOT ask questions
- Start immediately with <recommendations>
- Include ALL sections
- Reference specific data points
- Provide exact, actionable recommendations

## Specific Recommendations

- **Keep your bidding strategy progression framework** - it's the best part
- **Add the <recommendations> tag structure** - required for code to work
- **Add "DO NOT ask questions" instructions** - prevents confirmation requests
- **Add the scratchpad section** - helps with structured thinking
- **Merge the granular analysis instructions** - old prompt's "for EACH ad group" approach
- **Keep your industry best practices** - very valuable
- **Keep your red flags** - helpful for quick issue identification
- **Add the "all sections must be included" requirement** - prevents truncation

## What to Remove/Modify

- **Context Questions Section:** Modify to say "Only ask if absolutely necessary - otherwise infer from data"
- **Output Format Preferences:** Replace with the strict <recommendations> format from old prompt
- **Communication Style:** Keep but add emphasis on "specific data points" and "exact recommendations"

## Final Recommendation

Your new prompt is excellent and much more comprehensive. However, you need to:

- Add the strict output format requirements from the old prompt
- Add the <recommendations> tag structure
- Add the "do not ask questions" instructions
- Merge the granular "for EACH" analysis approach from the old prompt
- Keep all your excellent additions (bidding strategy, industry best practices, etc.)

The result will be a comprehensive, strategic prompt that also produces the structured, actionable output your code expects.

## 09 Authentication Troubleshooting

### 9. Authentication Troubleshooting Guide

**Documentation Order:** #9 (Troubleshooting)

Common authentication issues and how to fix them.

#### Error: "DEVELOPER\_TOKEN\_INVALID"

##### Cause

The developer token is incorrect or not approved.

##### Solution

- Go to `___MARKER0MARKER___`
- Verify your developer token matches what's in your secrets
- Check status is "**Approved**"
- Check access level:
- **Basic:** Can only access test accounts
- **Standard:** Can access real accounts
- Update `___MARKER0MARKER___` in Streamlit Cloud secrets

#### Error: "Request is missing required authentication credential"

##### Cause

OAuth access token is not being included in requests. Usually caused by:

- Invalid or expired refresh token
- `TOKEN_JSON` not properly formatted
- Project mismatch between developer token and OAuth credentials



## Solution

### 1. Verify TOKEN\_JSON Format

In Streamlit Cloud secrets, TOKEN\_JSON must use triple quotes:

```
TOKEN_JSON = """ { "token": "...", "refresh_token": "...", ... } """
```

### 2. Regenerate Token

If token is expired:

```
source venv/bin/activate python3 authenticate.py
```

Then update TOKEN\_JSON secret with new token.

### 3. Check Project Match

Developer token and OAuth credentials must be from the **same Google Cloud project**:

- Go to `___MARKER0MARKER___`
- Find your OAuth Client ID
- Note the project name
- Verify developer token is associated with the same project

## Error: "Refresh Token Expired or Revoked"

### Cause

- OAuth consent screen in "Testing" mode (tokens expire after 7 days)
- Token not used for 6+ months
- Token was revoked

### Solution

- Go to `___MARKER0MARKER___`
- Ensure OAuth consent screen is in "**Production**" mode
- Regenerate token:

```
python3 authenticate.py
```

- Update TOKEN\_JSON secret in Streamlit Cloud

## Error: "DEVELOPER\_TOKEN\_PROHIBITED"

### Cause

Developer token is associated with a different Google Cloud project than your OAuth credentials.

### Solution

- Create new OAuth credentials in the project that has the developer token, OR
- Use a developer token from the project that has your OAuth credentials
- Regenerate token with matching credentials

## Basic vs Standard Access

- **Basic Access:** Can only access test accounts
- **Standard Access:** Can access real accounts

If you have Basic access and try to access a real account, you'll get authentication errors.

## Quick Checklist

- ☐ Developer token is correct: \_\_\_\_MARKERØMARKER\_\_\_\_
- ☐ Developer token is approved
- ☐ All 6 secrets are present in Streamlit Cloud
- ☐ TOKEN\_JSON uses triple quotes \_\_\_\_MARKERØMARKER\_\_\_\_
- ☐ OAuth consent screen is in "Production" mode
- ☐ Developer token and OAuth credentials are from same project
- ☐ Token was regenerated recently (if expired)

## Getting Help

- \_\_\_\_MARKERØMARKER\_\_\_\_
- \_\_\_\_MARKERØMARKER\_\_\_\_

- Check Streamlit Cloud logs for specific error messages