

# AI-Powered Real Estate Deal Analyzer

**Submitted by:** Praveen A

**Institution:** K.S. Rangasamy College of Technology

**Date:** January 10, 2026

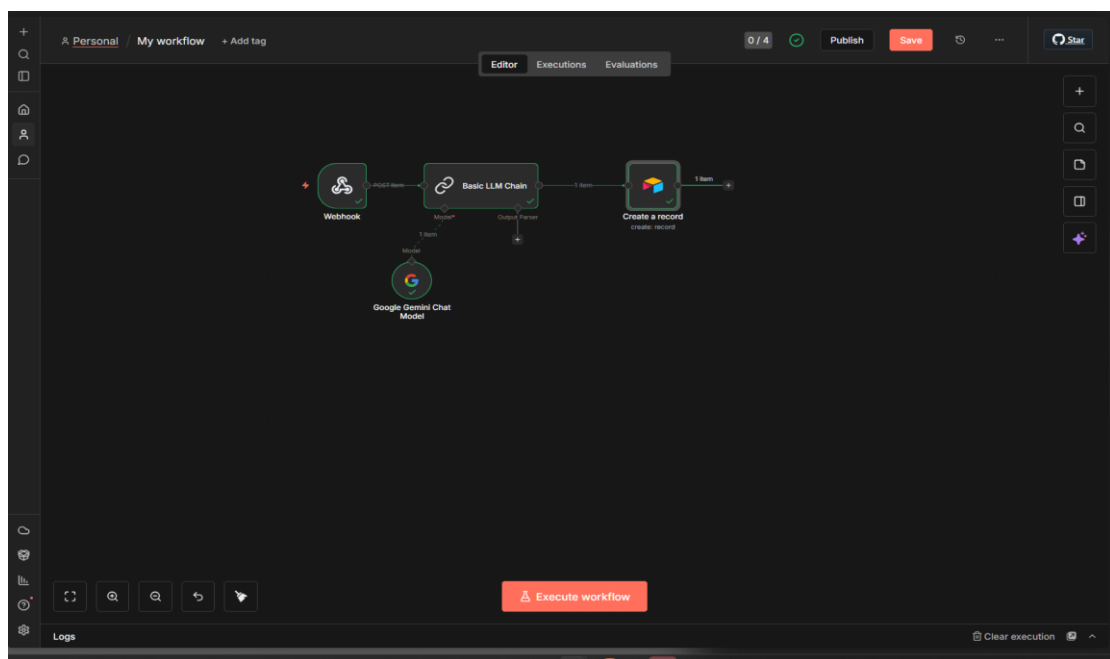
**Project Summary:** An automated pipeline built with n8n, Airtable, and Softr that ingests unstructured property data, analyzes investment viability using Google Gemini AI, and publishes results to a web dashboard.

## 1. System Architecture

The core of this project is an ETL (Extract, Transform, Load) pipeline orchestrated in n8n. The workflow receives data via Webhook, processes it through a custom AI agent, and loads structured data into a relational database.

### Key Technical Decisions:

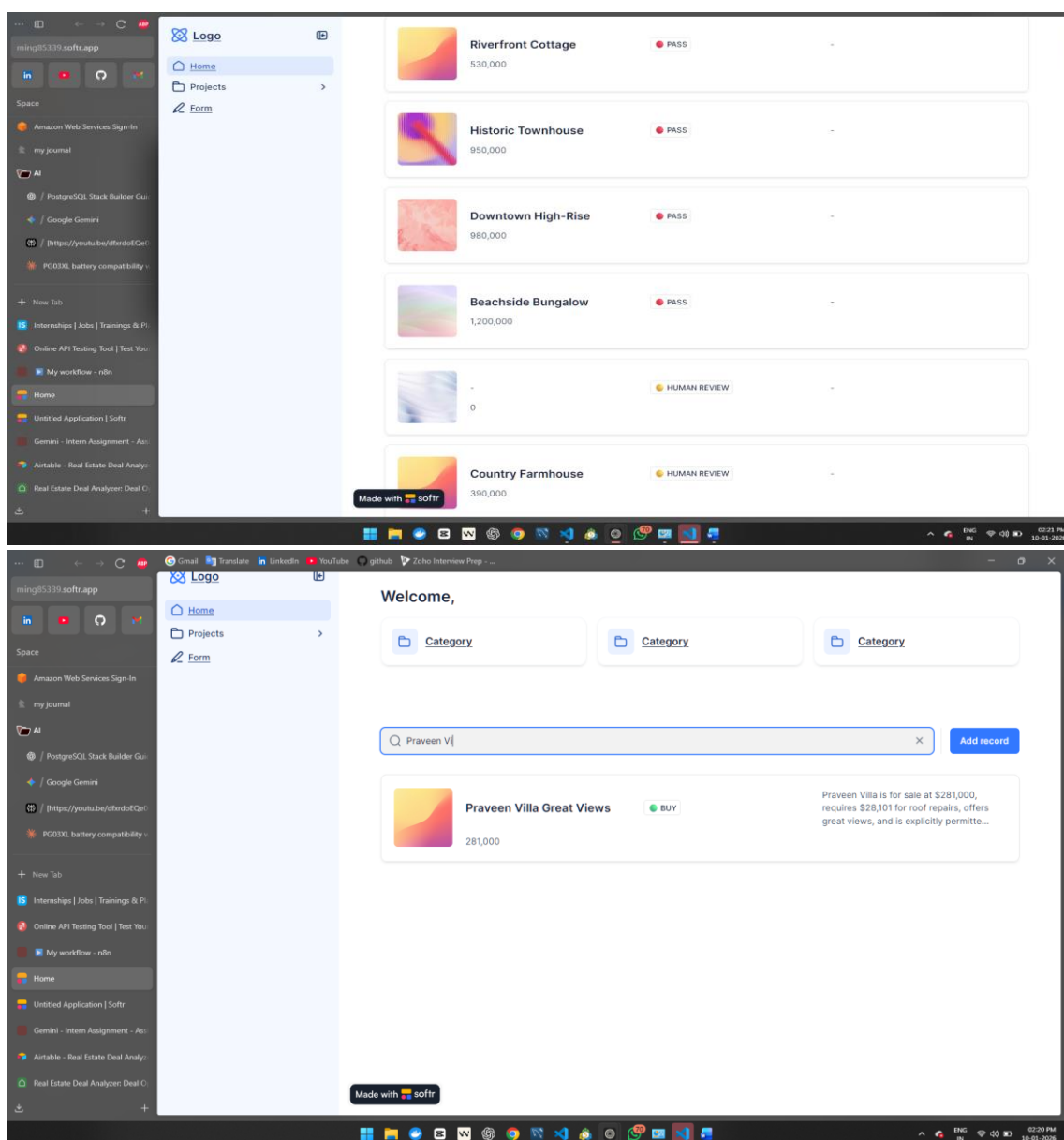
- **Orchestrator:** n8n (Self-hosted/Cloud).
- **AI Model:** Google Gemini Flash (Chosen for high performance-to-cost ratio vs. OpenAI).
- **Database:** Airtable.
- **Frontend:** Softr.
- **Workflow Visualization:**



#### 4. Frontend User Experience (Softr):

The client-facing dashboard is built on Softr, fully integrated with the Airtable backend to ensure real-time data synchronization.

- **Dynamic Visualization:** As shown in the figures below, the dashboard automatically renders visual tags ('BUY', 'PASS', 'HUMAN REVIEW') based on the AI's logic.
- **User Interface:** Investors can instantly see key metrics like Price and Summary without needing to access the raw database. This separation of concerns ensures data security while providing a clean user experience.



#### 5. Database & Logic Verification (Airtable):

Airtable serves as the central relational database. The schema is designed to enforce data types (Currency, Boolean, Text) for consistency.

Evidence of Success: The screenshot below demonstrates the system's robust error handling in action:

- Row 20 & 21 ('Praveen Cabin'): Correctly parsed financial data and assigned a 'BUY' verdict based on the \$400k threshold.
- Row 17 & 18: The system successfully detected missing pricing information and triggered the 'HUMAN REVIEW' flag, preventing automated errors.

Real Estate Deal Analyzer

Data

Automations

Interfaces

Forms

Trial: 12 days left

Launch

Share

Deal Opportunities

+

Add or import

Tools

Grid view

Hide fields

Filter

Group

Sort

Color

Share and sync

	A Property Title	\$ Asking Price	\$ Renovation Estimate	Is Airbnb Legal?	AI Verdict	AI Summary	A Location
5	Mountain Cabin Retreat	\$480,000.00	\$80,000.00	👍	HUMAN REVIEW	Asheville, NC	
6	Urban Condo	\$720,000.00	\$60,000.00	👍	BUY	Required field(s) are... Denver, CO	
7	Suburban Family Home	\$540,000.00	\$40,000.00	👍	HUMAN REVIEW	Plano, TX	
8	Lakefront Villa	\$1,350,000.00	\$250,000.00	👍	BUY	Lake Tahoe, NV	
9	City Studio	\$410,000.00	\$30,000.00	👍	PASS	Required field(s) are... Portland, OR	
10	Country Farmhouse	\$390,000.00	\$70,000.00	👍	HUMAN REVIEW	Hudson Valley, NY	
11	Downtown High-Rise	\$980,000.00	\$90,000.00	👍	PASS	Required field(s) are... Chicago, IL	
12	Desert Modern Home	\$670,000.00	\$110,000.00	👍	BUY	Palm Springs, CA	
13	Ski Chalet	\$1,150,000.00	\$180,000.00	👍	BUY	Breckenridge, CO	
14	Historic Brownstone	\$1,250,000.00	\$220,000.00	👍	BUY	Required field(s) are... Boston, MA	
15	Riverfront Cottage	\$530,000.00	\$60,000.00	👍	PASS	Fredericksburg, TX	
16	Spacious Downtown Cond...	\$320,000.00	\$65,000.00	👍	BUY	{...	
17	Awaiting Property Descripti...	\$0.00	\$0.00	👍	HUMAN REVIEW	Please provide a...	
18	Awaiting Property Descripti...	\$0.00	\$0.00	👍	HUMAN REVIEW	No property descriptio...	
19	Charming 2-bedroom bun...	\$350,000.00	\$30,000.00	👍	BUY	A charming 2-bedroo...	
20	Praveen Cabin	\$280,000.00	\$28,000.00	👍	BUY	Run agent	
21	Praveen Villa Great Views	\$281,000.00	\$28,101.00	👍	BUY	Praveen Villa is for sale...	
+							

+

Add...

21 records

Sum \$13,351,000.00

Sum \$1,861,101.00

### Conclusion:

This project successfully demonstrates an end-to-end ETL (Extract, Transform, Load) pipeline that leverages Generative AI to automate complex real estate investment analysis with high accuracy and fault tolerance.