# **Ad Automation System – High-Level Workflow Structure**

## **Overview**

This automation connects **Airtable, n8n, Claude AI, Gemini, and ImageKit** into a seamless content production pipeline. It handles:

1. Research Data Collection
2. Ad Copy Generation
3. Image Prompt Creation
4. AI Image Production & Hosting

## **Flow 1 – Research Data Update**

* **Trigger:** Airtable button click → Webhook (POST) to n8n
* **Data Passed:** Product info, target audience, pain points, solutions
* **n8n Nodes:**
  1. **Webhook** (Test/Prod URLs, method = POST)
  2. **Claude AI** (role = Market Researcher → outputs structured brand guidelines)
  3. **Update Airtable Record** (stores research data back)

## **Flow 2 – Ad Copy Generation**

* **Trigger:** Airtable “Generate Ad Copy” button → Webhook (POST)
* **Data Passed:** Research values (audience, pain points, solutions)
* **n8n Nodes:**
  1. **Webhook**
  2. **Claude AI** (role = Copywriter → outputs headline, primary text, CTA)
  3. **Update Airtable Record** (writes full ad copy set)

## **Flow 3 – Image Prompt Generation**

* **Trigger:** Airtable “Generate Image Prompt” button → Webhook (POST)
* **Data Passed:** Ad copy fields (headline, text, CTA)
* **n8n Nodes:**
  1. **Webhook**
  2. **Claude AI** (role = Art Director → generates multiple image prompts)
  3. **Batch Processing** (prepares 10 variations for DB insertion)
  4. **Update Airtable Record** (stores all image prompts linked to ad copy)

## **Flow 4 – Image Generation & Hosting**

* **Trigger:** Airtable “Generate Images” button → Webhook (POST)
* **Data Passed:** Selected image prompts + ad copy link
* **n8n Nodes:**
  1. **Webhook**
  2. **HTTP Request (Gemini)** → POST with prompt → returns base64 image
  3. **Edit Fields** → separates base + mime
  4. **Convert to File** → turns base64 into actual image
  5. **HTTP Request (ImageKit)** → Upload file  
     + Header: Authorization: Basic <base64\_api\_key>
  6. **Create Airtable Record** → stores final image URL + metadata

## **Authentication Notes**

* **Claude/Gemini:** API key in headers (Authorization: Bearer <key>)
* **ImageKit:** Private API key Base64 encoded → Basic <encoded\_key>
* **Airtable:** Standard API key or personal access token

## **Best Practices**

* Always **test automations** with Test URLs before switching to Production
* Use **status fields in Airtable** (In Progress, Completed) for error handling
* Keep **AI system prompts** separate (docs/notion) for easy iteration
* Store **logs in n8n** for debugging