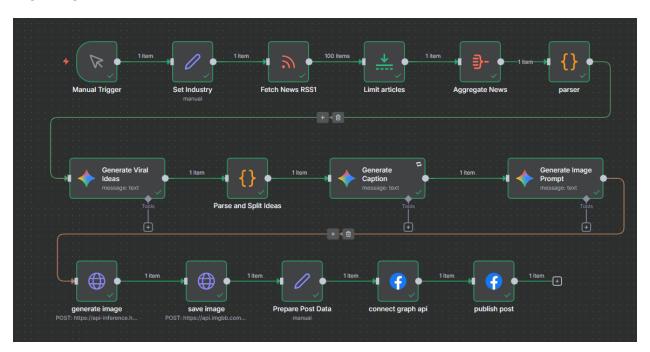
Task – Al Development Assignment

The Al-powered automation assignment described in the file involves building a workflow that:

- Scrapes the internet for the top 1 news articles in a chosen industry (e.g., Healthcare).
- Generates 1 viral post ideas based on these news articles.
- Creates Instagram post images and captions for these ideas.
- The workflow utilizes n8n automation platform, integrating AI models (Google Gemini) for generating captions, image prompts, and ideas.

Note: only 1 because of rate limiting and open source issues

WORKFLOW:

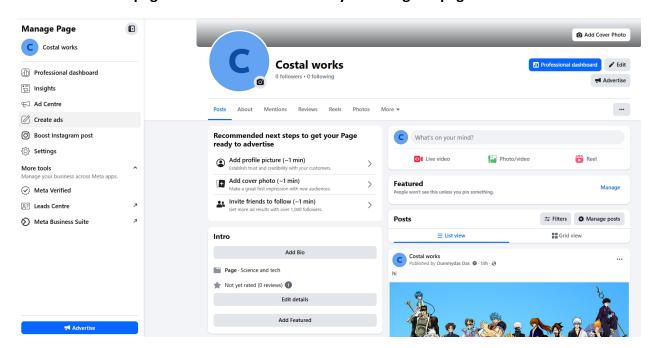


Challenges

- Ensuring the images contain clear and readable text overlays that are eye-catching and fit Instagram's style.
- Handling API integration and authentication with multiple services such as Google Gemini API and image hosting/upload APIs.

- Parsing AI model responses accurately to extract relevant ideas and prevent JSON parsing errors.
- Generating viral post content that is authentic, engaging, and relevant to the chosen industry.
- Coordinating multiple asynchronous API calls in a single automated workflow.
- Managing token limits and retries for AI model API calls to maintain workflow stability.

Note: Main challenge was with the facebook graph api setup which needs to create a verifies facebook page which should be owned by an Instagram page



Upgrades/Features

- Use of advanced AI language models (Google Gemini 2.5) for viral idea generation, caption writing, and image description prompts.
- Integration of image generation services via Hugging Face API to create Instagram-ready images based on generated prompts.
- Automatic image upload and post creation using Facebook Graph API for Instagram publishing.
- Code nodes in n8n to parse and split the AI JSON response into individual viral post ideas.

- Use of RSS feed scraping for dynamically fetching fresh news articles in a specific industry.
- Limit node to restrict the number of fetched news items for optimized processing.
- Aggregation and formatting of news articles into consumable input for AI models.
- Processing and preparation of post data including image URLs and captions before final publishing.

Resources Used

- n8n automation platform as the core workflow orchestrator.
- Google Gemini 2.5 language models (flash and pro) via Google PaLM API for text-based AI tasks.
- RSS feed from Google News for fetching industry news.
- Hugging Face inference API for AI-based image generation.
- IMGBB API for image hosting and URL generation.
- Facebook Graph API for Instagram post creation and publishing.
- Custom JavaScript/TypeScript code nodes for handling complex parsing and data transformation tasks within the workflow.

NOTE: GIBBERISH ENGLISH IS BECAUSE OF OPEN SOURCE IMAGE GENERATION MODEL
BUT THE CAPTIONS ARE GOOD BECAUSE OF GEMINI MODEL

NEED TO USE OPENAI FOR CAPTIONS INSTEAD OF GEMINI AND GPT-5 FOR ACCURATE AND ADVANCED IMAGE GENERATION.

CONCEPTS LEARNT:

- 1. N8N WORKFLOW (first time working with n8n)
- 2. Facebook for developers(first time working with this too)

