

Automated SEO Keyword Agent with Flask, PyTrends & n8n

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Objective

In this project, I aim to develop a lightweight AI agent to generate SEO keywords from a seed term, rank them using search data, and send results to Google Sheets via n8n automation.

Tech Stack

- **Flask** – REST API server
- **PyTrends** – Google Trends wrapper
- **Pandas** – Keyword sorting and filtering
- **n8n.io** – Workflow automation (webhook + Sheets)
- **Google Sheets** – Report storage

Workflow

1. **Input:** User submits { "seed": "..." } to Flask's '/generate'.
2. **Keyword Generation:** PyTrends fetches related keywords or defaults to a fallback list.
3. **Mock Data Enrichment:** Each keyword gets simulated values: `search_volume`, `competition`.
4. **Ranking:**
 - Sort by high search volume and low competition.
 - Top 50 keywords selected.
5. **Push to n8n:** Results sent as JSON to n8n webhook.
6. **n8n Flow:**
 - Webhook → Split Items → Set Fields → Google Sheets Append

Outputs

- JSON response from Flask
- Google Sheet with `keyword`, `volume`, `competition`
- Logs via console/debug

Advantages

- Works with or without live API (fallback ready)
- Lightweight and fast to deploy
- Easily extendable via n8n

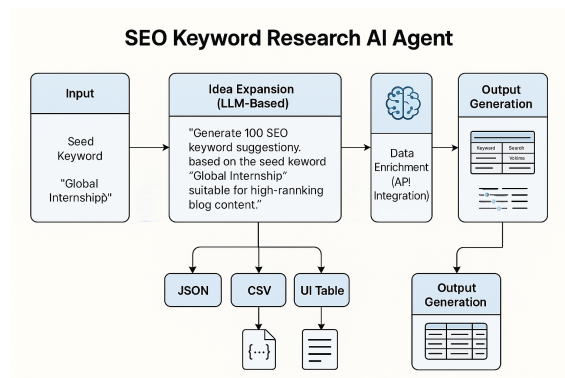


Figure: System Architecture – Flask Backend and n8n Workflow