Keyword Ranking Analysis

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Problem Statement

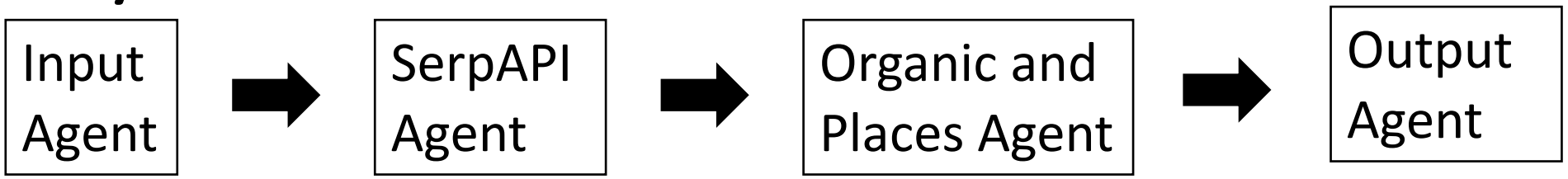
SEO teams need to regularly track keyword rankings to measure website visibility and search performance, but manual checking on Google is time-consuming, inconsistent, and not scalable due to personalization, location bias, and device differences. Tracking both organic search results and local (Google Places) visibility further increases complexity. The lack of automation leads to delayed SEO insights, unreliable performance measurement, and heavy dependency on manual effort, making it difficult for businesses to take timely, data-driven decisions.

Proposed Solutions

- Built an automated keyword ranking analysis system using Python.
- Input provided via Excel file containing: Keywords and Target Url
- The system:

1. Fetches Google search results using an API
2. Identifies organic ranking position
3. Attempts to detect Google Places visibilities
4. Generates a structured Excel report
5. Displays results via a Streamlit dashboard.

System Architecture



1. Agent Responsibilities

- **Input Agent:** Reads excel file and reads the keyword and url.
- **SerpAPI Agent :** API for searching the target url in Google,
- **Organic Rank Agent:** Analyze the rank of link in google links.
- **Place Rank Agent:** Attempt to analyze the rank in Google Places.
- **Report Generator:** Store the data excel file

2. Technology Used

- Python
- SerpAPI (Google Search API)
- Pandas & OpenPyXL
- LangGraph
- Streamlit

Input and Output

Input

- Excel file contains:

1. The Keywords
2. Target URL

Output

- Excel Report

1. Keywords
2. Google Places
3. Google Links
4. Page Number

- Interactive Dashboards

Output Table

keyword	url	google places	google links	page number
home delivery food near me	https://www.omorganickitchen.com/	Not Found	Not Found	N/A
tiffin service provider	https://www.omorganickitchen.com/	Not Found	Not Found	N/A
tiffin service in noida	https://www.omorganickitchen.com/	Not Found	3	Page 1
tiffin service online	https://www.omorganickitchen.com/	Not Found	4	Page 1
healthy food online	https://www.omorganickitchen.com/	5	13	Page 2
organic food near me	https://www.omorganickitchen.com/	Not Found	Not Found	N/A
meal delivery service	https://www.omorganickitchen.com/	1	3	Page 1
food delivery in noida	https://www.omorganickitchen.com/	3	Not Found	N/A
tiffin delivery service	https://www.omorganickitchen.com/	Not Found	12	Page 2
organic food delivery	https://www.omorganickitchen.com/	4	4	Page 1
corporate tiffin services	https://www.omorganickitchen.com/	Not Found	1	Page 1
online tiffin service in noida	https://www.omorganickitchen.com/	7	3	Page 1
corporate lunch menu	https://www.omorganickitchen.com/	20	1	Page 1
organic food menu	https://www.omorganickitchen.com/	Not Found	1	Page 1
organic tiffin services	https://www.omorganickitchen.com/	1	2	Page 1
corporate food catering	https://www.omorganickitchen.com/	Not Found	8	Page 1
meals delivered to your home	https://www.omorganickitchen.com/	1	5	Page 1
organic lunch near me	https://www.omorganickitchen.com/	24	Not Found	N/A
organic meal delivery	https://www.omorganickitchen.com/	1	4	Page 1
organic meal subscription	https://www.omorganickitchen.com/	1	4	Page 1

Challenges

- Google Places ranking detection. It results varies by:

1. Location Precision
2. User proximity
3. Google Maps signals

- API Limitations

1. SerpAPI gives structured data but may not always match UI results.

- Other APIs explored

1. Bing API (limited access)
2. Playwright scraping (blocked by CAPTCHA, unsafe)

Limitation

- Google search results vary due to personalization, location, and real-time signals that APIs cannot fully replicate.
- Google Places rankings are highly dynamic and depend on proximity, reviews, and user behavior
- API-based results may differ from live Google UI due to ads, maps, and featured elements.
- Free API usage limits restrict the number of keywords and pages analyzed per run.

Future Enhancement

- Historical rank tracking
- Daily/weekly automation
- Location-based comparison

THANK YOU