Project Report: Google Trends Jobs Analytics Dashboard

1. Executive Summary

This report documents the development and deployment of the Google Trends Jobs Analytics Dashboard. This Business Intelligence tool is designed to monitor and analyze search trends related to job market keywords, specifically focusing on roles such as "Data Analyst," "Web Developer," and general job search terms within the Indian market. The dashboard provides real-time insights into search volumes, keyword performance, and geographic distribution, enabling data-driven decisions regarding recruitment strategies and market demand analysis.

As of the last system refresh on **May 12, 2024 (05:04)**, the system tracks a total of approximately 23,000 search instances across historical timelines, with "India Jobs Jobs" being the dominant search term (12,894 instances).

2. Project Overview

The primary objective of this Power BI project is to visualize long-term trends and short-term fluctuations in job-seeker interest. By integrating Google Trends data, the dashboard offers a holistic view of the employment landscape.

- **Tool:** Power BI Desktop / Service
- **Data Source:** Google Trends API / Custom Data Connector
- **Time Scope:** 2004 - 2024 (Historical), Last 7 Days (Real-time)

3. Dashboard Components Analysis

3.1 Overview Page

The Overview Page serves as the entry point, providing a high-level summary of long-term trends.

> **Key Metrics:**
> - **Total Searches Tracked:** 23K

- **Dominant Keyword:** "India Jobs Jobs" (12,894)
- **Secondary Keyword:** "Web Developer" (4,808)

This page features a timeline slider allowing users to filter data between the years 2004 and 2024. An area chart visualizes the search volume over time, highlighting a significant peak in search interest around 2010-2015 for job-related terms. A set of scorecard visuals displays the aggregate volume for individual keywords.

3.2 Detailed Analytics Page

This component focuses on granular analysis of specific timeframes and keywords. It displays a "Total Searches" KPI of 7,665 for the selected context. It includes:

- **Trend Line Charts:** Visualizing daily search volume fluctuations (e.g., Data Analyst searches dipping significantly on June 27th).
- **Top & Rising Tables:** A dedicated section lists related queries, such as "Apprenticeship," "Career," and "Cover letter," categorized by their search volume or "rising" status.
- **Rising Metric:** Specifically highlights keywords with significant recent growth, such as "Cover letter" (+160).

3.3 Geographic Visualization Page

The geographic view offers a global perspective on search intent.

- **Visualization:** A world map centers on the EMEA region, using color intensity to denote search volume.
- **Short-term Analysis:** A "Last 7 Days" card tracks 8K searches, providing a dot-plot chart for daily activity across tracked keywords.
- **Keyword Distribution:** A bar chart compares relative popularity, showing "Data Analyst" capturing 46.0% of the specific segment interest, followed by "The Developer" at 25.0%.

3.4 Jobs Keywords Page

This page provides tabular data for deep-dive analysis into keyword performance.

- **Categorization:** Keywords are split into "Rising" (trending up) and "Top" (highest volume).
- **Triangle Indicators:** Visual cues (upward red/blue triangles) indicate positive momentum for terms like "Cover letter" (160), "Employment" (60), and "Full-time job" (50).
- **Detailed Table:** A comprehensive grid lists Topic Types (e.g., Topic, Occupation, Professional Field) alongside their respective search values.

4. Data Architecture

The data model is built upon a star schema structure, integrating API responses with dimension tables. Based on the data pane, the following tables are utilized:

Table Name	Description & Purpose
Base_API_Country	Stores base location data retrieved from the API.
Base_By_Date	Fact table containing the primary time-series search volume data.
Country_API & Countries with Flags	Dimension tables for geographic mapping, likely including ISO codes and flag URLs.
Keyword & Related_Keyword_Main	Dimension tables storing the list of tracked keywords and their relationships.
Rising_Keywords & Top_Keywords	Aggregated tables specifically for the "Rising" and "Top" visuals to optimize performance.
Dynamic_Date & Refresh_Date	Date dimension tables to handle time intelligence functions and display the last refresh timestamp.

5. Key Features and Visualizations

- **Dynamic Time Slicing:** The timeline slider (2004-2024) allows for flexible period analysis.
- **Geospatial Mapping:** Integration of world maps to pinpoint interest by region.
- **Real-time Indicators:** Specific "Last 7 Days" visuals to monitor immediate trends.
- **Comparative Analysis:** Multi-line charts allowing direct comparison between "Data Analyst," "Web Developer," and generic job searches.
- **Navigation:** Custom navigation buttons (Forward arrows) facilitate a guided user experience through the report pages.

6. Technical Implementation Process

The implementation followed a standard Power BI development lifecycle:

1. **Data Ingestion:** Connection to Google Trends data sources via API calls (evidenced by "_API" table suffixes).
2. **Data Transformation (Power Query):** Cleaning and shaping data, particularly separating "Top" and "Rising" metrics into distinct tables for easier visualization.
3. **Data Modeling:** establishing relationships between the Date dimension, Keyword dimension, and the Fact tables (Search Volumes).
4. **Measure Calculation:** Creating DAX measures for "Total Searches," "Rising Value," and percentage distributions.
5. **UI/UX Design:** Designing the canvas with a clean, light-themed aesthetic, using rounded cards for KPI grouping.

7. Data Sources and Refresh Strategy

Primary Source: Google Trends (inferred from dashboard title and data context).

Refresh Strategy: The dashboard displays a "Last Refresh Date" of **12-May-24, 05:04**. This implies an automated refresh schedule, likely configured on the Power BI Service via a Gateway to fetch updated API data daily or weekly.

8. Key Insights and Findings

- **Keyword Dominance:** "India Jobs Jobs" is the significant outlier, commanding the highest total search volume (12,894), suggesting a very high intent for domestic employment in the dataset context.
- **Role Popularity:** "Web Developer" (4,808) searches significantly outpace "Data Analyst" (3,075) in the long-term historical view, though recent short-term trends might differ.
- **Geographic Focus:** The data appears heavily skewed or filtered towards the Indian market or specific global regions interested in Indian job markets.
- **Emerging Topics:** "Cover letter" is a top rising topic (Value: 160), indicating a user need for application preparation assistance.

9. Recommendations

Based on the analysis of the dashboard and its data:

- **Data Quality Check:** The "Linkdin Jobs" keyword shows 0 searches. This suggests a potential misspelling in the query ("LinkedIn" vs "Linkdin") or a data fetch issue that should be corrected.
- **Drill-down Capabilities:** Enhance the geographic view to allow drilling down from Country to City level for better regional targeting.
- **Correlations:** Consider adding external datasets (e.g., actual job posting volumes from job portals) to correlate "Search Interest" vs "Actual Market Demand."
- **Alerting:** Set up Power BI alerts for when specific "Rising Keywords" cross a certain threshold to notify the recruitment team of emerging trends immediately.