```
!pip install pytrends matplotlib pandas seaborn plotly

Defaulting to user installation because normal site-packages is not
writeable
Requirement already satisfied: pytrends in c:\users\shash\appdata\
roaming\python\python313\site-packages (4.9.2)
Requirement already satisfied: matplotlib in c:\users\shash\appdata\
roaming\python\python313\site-packages (3.10.3)
Requirement already satisfied: pandas in c:\users\shash\appdata\
roaming\python\python313\site-packages (2.2.3)
Requirement already satisfied: seaborn in c:\users\shash\appdata\
roaming\python\python313\site-packages (0.13.2)
Requirement already satisfied: plotly in c:\users\shash\appdata\
roaming\python\python313\site-packages (6.1.2)
Requirement already satisfied: requests>=2.0 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from pytrends)
(2.32.3)
Requirement already satisfied: lxml in c:\users\shash\appdata\roaming\
python\python313\site-packages (from pytrends) (5.4.0)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(1.3.2)
Requirement already satisfied: cycler>=0.10 in c:\users\shash\appdata\
roaming\python\python313\site-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(4.58.0)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(1.4.8)
Requirement already satisfied: numpy>=1.23 in c:\users\shash\appdata\
roaming\python\python313\site-packages (from matplotlib) (2.2.4)
Requirement already satisfied: packaging>=20.0 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(24.2)
Requirement already satisfied: pillow>=8 in c:\users\shash\appdata\
roaming\python\python313\site-packages (from matplotlib) (11.2.1)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(3.2.3)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from matplotlib)
(2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in c:\users\shash\appdata\
roaming\python\python313\site-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from pandas) (2025.2)
Requirement already satisfied: narwhals>=1.15.1 in c:\users\shash\
appdata\roaming\python\python313\site-packages (from plotly) (1.41.0)
Requirement already satisfied: six>=1.5 in c:\users\shash\appdata\
```

```
roaming\python\python313\site-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\shash\appdata\roaming\python\python313\site-packages (from requests>=2.0->pytrends) (3.4.1)
Requirement already satisfied: idna<4,>=2.5 in c:\users\shash\appdata\roaming\python\python313\site-packages (from requests>=2.0->pytrends) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\shash\appdata\roaming\python\python313\site-packages (from requests>=2.0->pytrends) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\shash\appdata\roaming\python\python313\site-packages (from requests>=2.0->pytrends) (2025.1.31)
```

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from pytrends.request import TrendReq
import plotly.express as px
```

Setup pytrend library and keyword define

```
pytrends = TrendReq(hl="en-US", tz=360)
keyword = "Data Analyst"
```

Data Request

```
pytrends.build_payload([keyword], cat=0, timeframe="today 12-m", geo = "", gprop="")
```

Country by interst

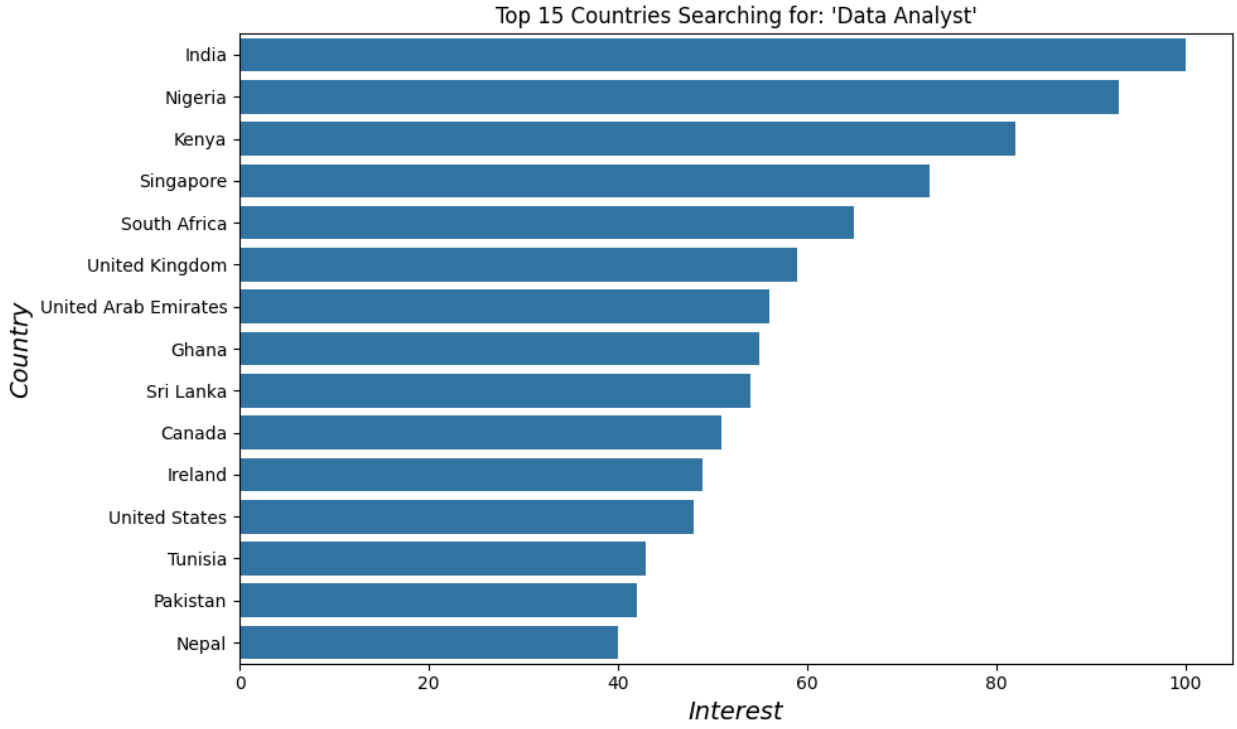
```
region_data = pytrends.interest_by_region()
region_data = region_data.sort_values(by = keyword , ascending = False).head(15)

print(region_data)
```

```
                      Data Analyst
geoName
India                          100
Nigeria                         93
Kenya                           82
Singapore                       73
South Africa                    65
United Kingdom                  59
United Arab Emirates            56
```

```
Ghana                          55
Sri Lanka                      54
Canada                         51
Ireland                        49
United States                  48
Tunisia                        43
Pakistan                       42
Nepal                          40
```

```
plt.figure(figsize=(10, 6))
sns.barplot(x=region_data[keyword], y=region_data.index)
plt.title(f"Top 15 Countries Searching for: '{keyword}'")
plt.xlabel("Interest", color='Black', fontsize=14, style = "italic")
plt.ylabel("Country", color='black', fontsize=14, style = "italic")
plt.tight_layout()
plt.show()
```

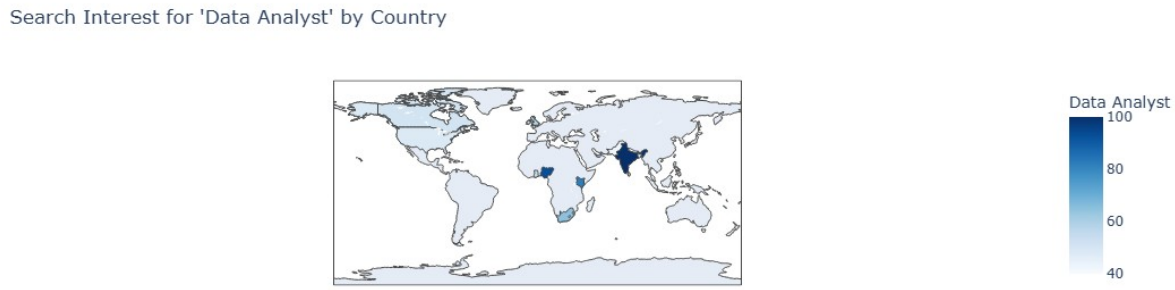


Word Map Plot

```
region_data = region_data.reset_index()
fig = px.choropleth(
    region_data,
    locations="geoName",
    locationmode ="country names",
    color=keyword,
    title=f"Search Interest for '{keyword}' by Country",
    color_continuous_scale="Blues"
```

```
)

fig.show()
```



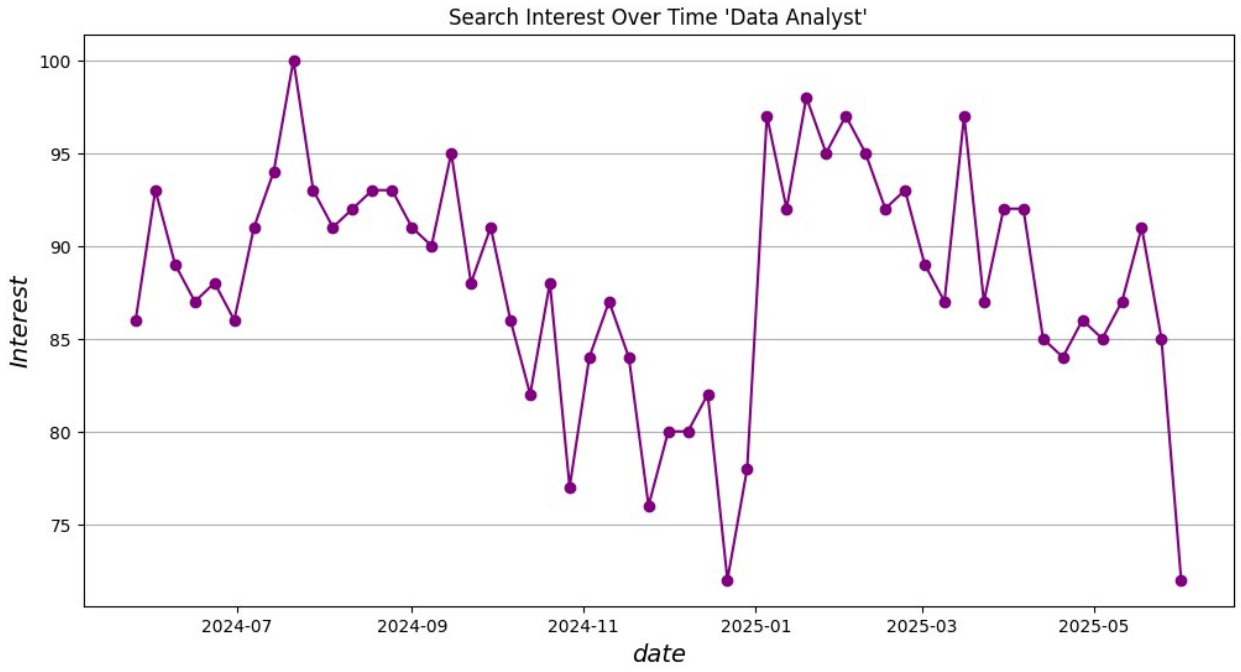
Time Wise Interest

```
time_df = pytrends.interest_over_time()
```

```
C:\Users\shash\AppData\Roaming\Python\Python313\site-packages\
pytrends\request.py:260: FutureWarning:

Downcasting object dtype arrays on .fillna, .ffill, .bfill is
deprecated and will change in a future version. Call
result.infer_objects(copy=False) instead. To opt-in to the future
behavior, set `pd.set_option('future.no_silent_downcasting', True)`
```

```
plt.figure(figsize = (12,6))
plt.plot(time_df.index , time_df[keyword], marker = "o", color =
"purple")
plt.title(f"Search Interest Over Time '{keyword}'")
plt.xlabel("date", fontsize=14, style = "italic")
plt.ylabel("Interest", fontsize=14, style = "italic")
plt.grid(axis = "y")
plt.show()
```



Multiple Keywords Compare

```
kw_list = ["Data Science" , "Data Engineering", "Ai Engineering"]
pytrends.build_payload(kw_list, cat = 0 , timeframe = "today 12-m",
geo = "", gprop = "")

compare_df = pytrends.interest_over_time()
plt.figure(figsize = (12,6))
for kw in kw_list:
    plt.plot(compare_df.index, compare_df[kw] , label = kw)
plt.title("Keyword Comparison over Time")
plt.xlabel("Date", fontsize=14, style = "italic")
plt.ylabel("Interest", fontsize=14, style = "italic")
plt.legend()
plt.grid()
plt.tight_layout()
plt.show()
```

```
C:\Users\shash\AppData\Roaming\Python\Python313\site-packages\
pytrends\request.py:260: FutureWarning:

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```

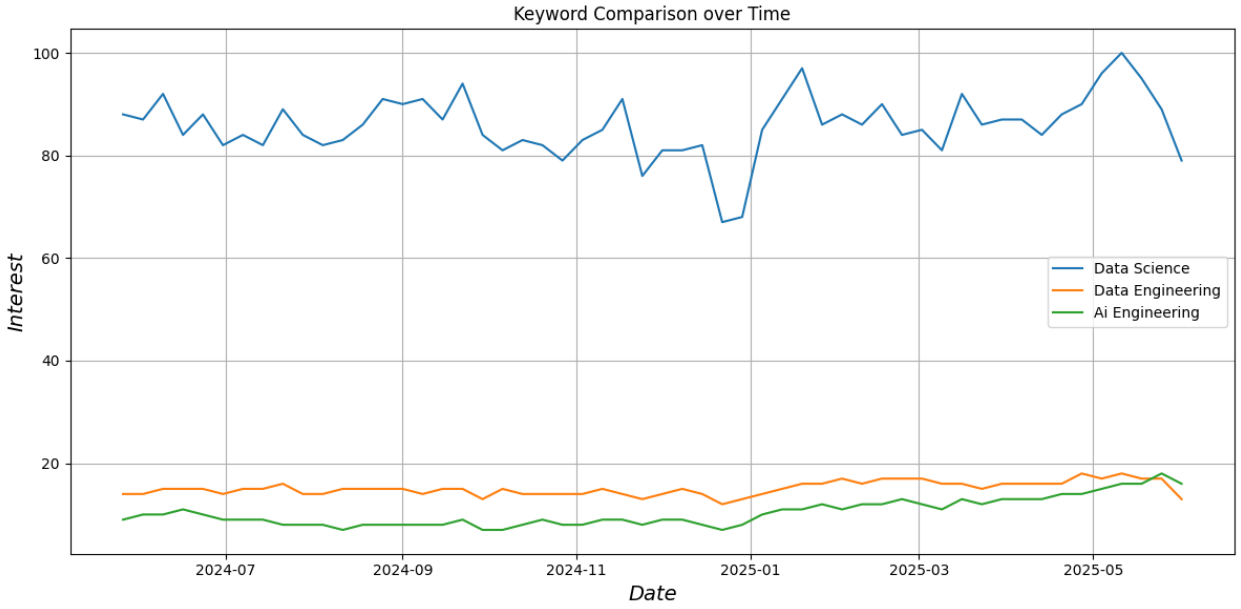
Keyword Comparison over Time
Interest
Date
Data Science
Data Engineering
Ai Engineering
100
80
60
40
20
2024-07
2024-09
2024-11
2025-01
2025-03
2025-05