In [1]:
```
pip install pytrends matplotlib seaborn plotly pandas
```

```
Collecting pytrends
  Downloading pytrends-4.9.2-py3-none-any.whl.metadata (13 kB)
Requirement already satisfied: matplotlib in c:\users\afzal\anaconda3\lib\site-
packages (3.7.2)
Requirement already satisfied: seaborn in c:\users\afzal\anaconda3\lib\site-pac
kages (0.12.2)
Requirement already satisfied: plotly in c:\users\afzal\anaconda3\lib\site-pack
ages (5.9.0)
Requirement already satisfied: pandas in c:\users\afzal\anaconda3\lib\site-pack
ages (2.1.4)
Requirement already satisfied: requests>=2.0 in c:\users\afzal\anaconda3\lib\si
te-packages (from pytrends) (2.31.0)
Requirement already satisfied: lxml in c:\users\afzal\anaconda3\lib\site-packag
es (from pytrends) (4.9.3)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\afzal\anaconda3\li
b\site-packages (from matplotlib) (1.0.5)
Requirement already satisfied: cycler>=0.10 in c:\users\afzal\anaconda3\lib\sit
e-packages (from matplotlib) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\afzal\anaconda3\li
b\site-packages (from matplotlib) (4.25.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\afzal\anaconda3\li
b\site-packages (from matplotlib) (1.4.4)
Requirement already satisfied: numpy>=1.20 in c:\users\afzal\anaconda3\lib\sit
e-packages (from matplotlib) (1.24.3)
Requirement already satisfied: packaging>=20.0 in c:\users\afzal\anaconda3\lib\
site-packages (from matplotlib) (23.1)
Requirement already satisfied: pillow>=6.2.0 in c:\users\afzal\anaconda3\lib\si
te-packages (from matplotlib) (10.2.0)
Requirement already satisfied: pyparsing<3.1,>=2.3.1 in c:\users\afzal\anaconda
3\lib\site-packages (from matplotlib) (3.0.9)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\afzal\anaconda
3\lib\site-packages (from matplotlib) (2.8.2)
Requirement already satisfied: tenacity>=6.2.0 in c:\users\afzal\anaconda3\lib\
site-packages (from plotly) (8.2.2)
Requirement already satisfied: pytz>=2020.1 in c:\users\afzal\anaconda3\lib\sit
e-packages (from pandas) (2023.3.post1)
Requirement already satisfied: tzdata>=2022.1 in c:\users\afzal\anaconda3\lib\s
ite-packages (from pandas) (2023.3)
Requirement already satisfied: six>=1.5 in c:\users\afzal\anaconda3\lib\site-pa
ckages (from python-dateutil>=2.7->matplotlib) (1.16.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\afzal\anaco
nda3\lib\site-packages (from requests>=2.0->pytrends) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\users\afzal\anaconda3\lib\sit
e-packages (from requests>=2.0->pytrends) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\afzal\anaconda3\l
ib\site-packages (from requests>=2.0->pytrends) (1.26.16)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\afzal\anaconda3\l
ib\site-packages (from requests>=2.0->pytrends) (2024.2.2)
Downloading pytrends-4.9.2-py3-none-any.whl (15 kB)
Installing collected packages: pytrends
Successfully installed pytrends-4.9.2
Note: you may need to restart the kernel to use updated packages.
```

In [1]:
```
import pandas as pd
from pytrends.request import TrendReq
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px
```

PyTrends Setup aur Keyword Define

In [2]:
```
pytrends = TrendReq(hl='en-US', tz=360)
keyword = "cloud computing"
```

Data Request

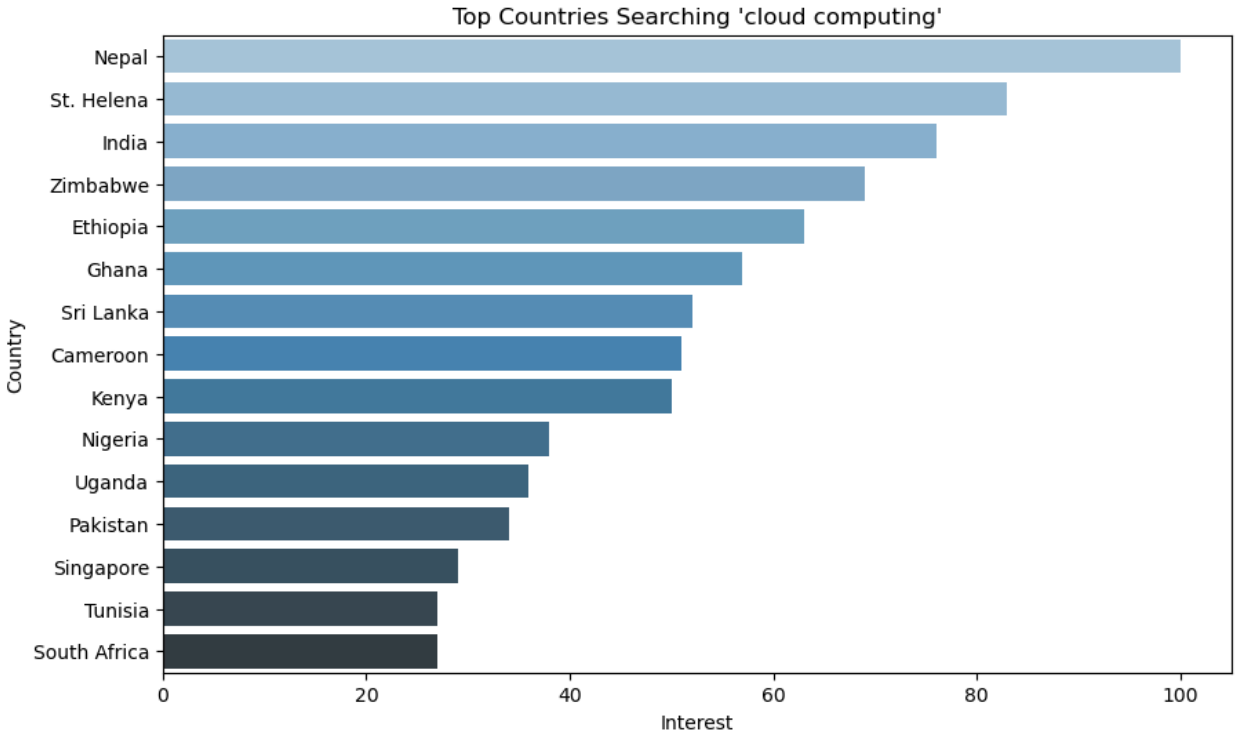
In [3]:
```
pytrends.build_payload([keyword], cat=0, timeframe='today 12-m', geo='', gprop
```

Country-wise Interest

In [4]:
```
region_data = pytrends.interest_by_region()
region_data = region_data.sort_values(by=keyword, ascending=False).head(15)
```

Bar Plot Banana (Top Countries):

In [5]:
```
plt.figure(figsize=(10,6))
sns.barplot(x=region_data[keyword], y=region_data.index, palette='Blues_d')
plt.title(f"Top Countries Searching '{keyword}'")
plt.xlabel("Interest")
plt.ylabel("Country")
plt.show()
```



Choropleth (World Map Plot):

In [6]:
```
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()
```

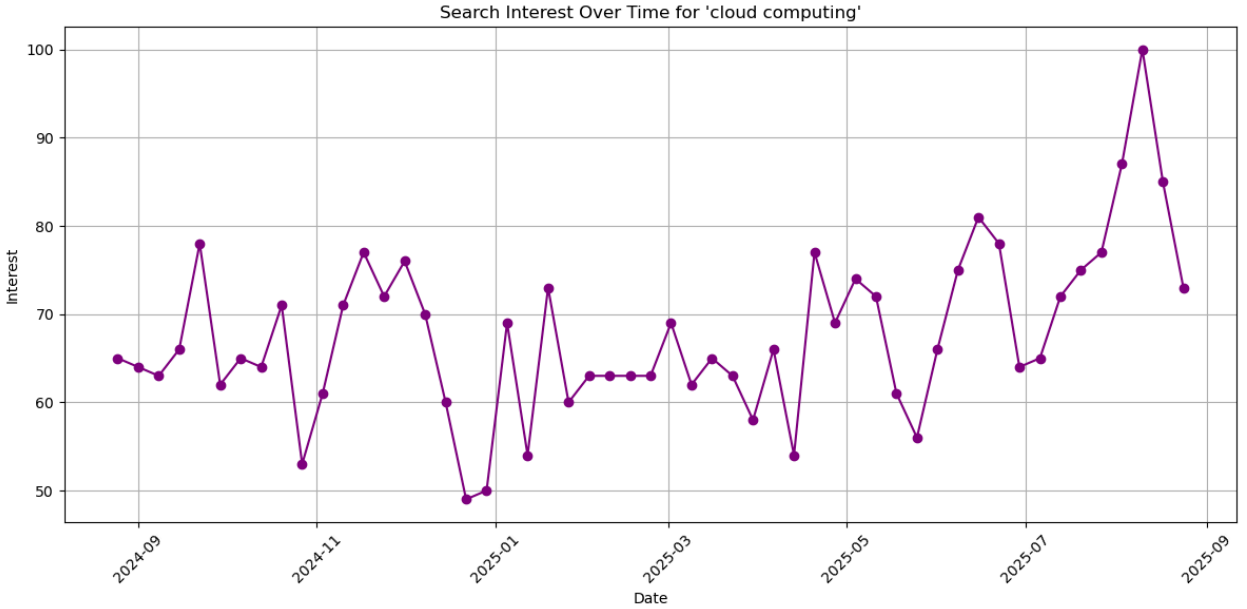
Time-wise Interest

In [7]:
```
time_df = pytrends.interest_over_time()
```

Line Plot (Search Trend Over Time)

In [9]:
```
plt.figure(figsize=(12,6))
plt.plot(time_df.index, time_df[keyword], marker='o', color='purple')
plt.title(f"Search Interest Over Time for '{keyword}'")
```

```
plt.xlabel("Date")
plt.ylabel("Interest")
plt.grid(True)
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```

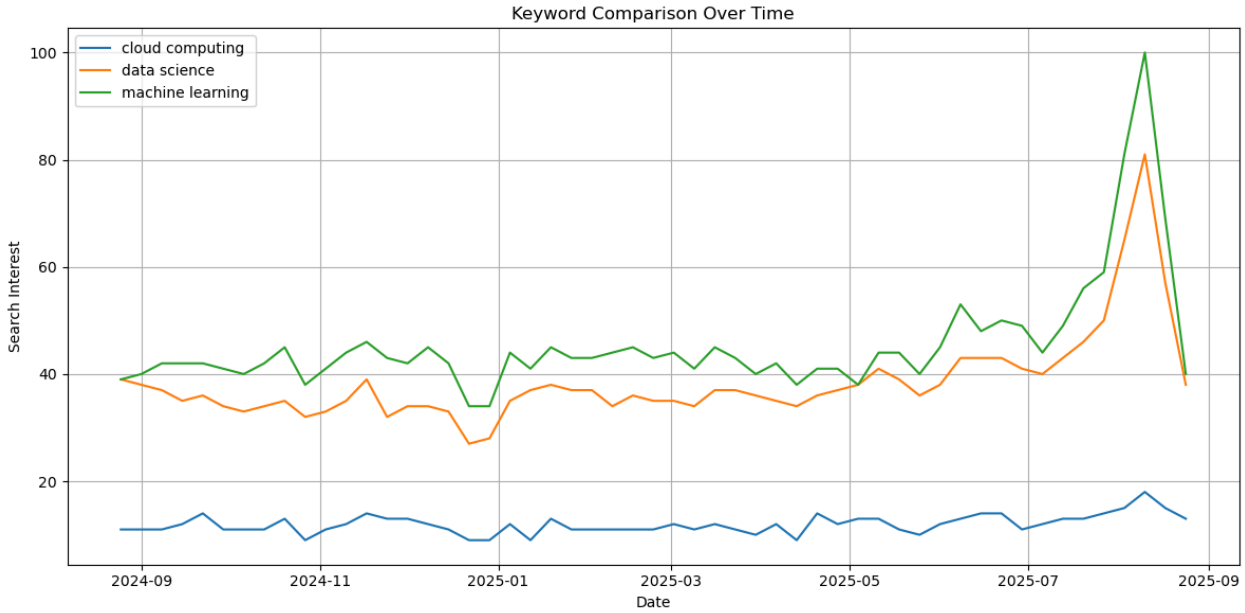


Multiple Keywords Compare

In [10]:
```
kw_list = ["cloud computing", "data science", "machine learning"]
pytrends.build_payload(kw_list, cat=0, timeframe='today 12-m', geo='', gprop='
```

Comparison Plot (Line Plot of All 3 Keywords)

In [11]:
```
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")
plt.ylabel("Search Interest")
plt.legend()
plt.grid(True)
plt.tight_layout()
plt.show()
```


Keyword Comparison Over Time
cloud computing
data science
machine learning
Search Interest
Date
100
80
60
40
20
2024-09
2024-11
2025-01
2025-03
2025-05
2025-07
2025-09

In [ ]: