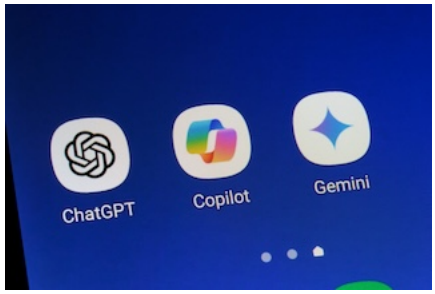
You are a data analyst working for a tech company closely monitoring the AI tools market. You want to understand the evolving popularity of three major AI tools, ChatGPT, Gemini, and Microsoft Copilot, and identify which tool is gaining the most traction and how they compare over time.



You'll work with real-world time series data that captures the global interest in these tools over several weeks. Your goal is to analyze this data, uncover patterns, and provide actionable insights to help your company make informed decisions. This might include determining where to focus marketing efforts, predicting future trends, or identifying potential areas for improvement.

Are you ready to help your company stay ahead of the curve in the competitive AI tools market? Let's get started!

The Data

The Google Trends data is available as a CSV file `ai_tools_comparison.csv`. The data contains the number of worldwide searches for chatGpt, Gemini, and Microsoft Copilot over the past 12 months as of September 2024.

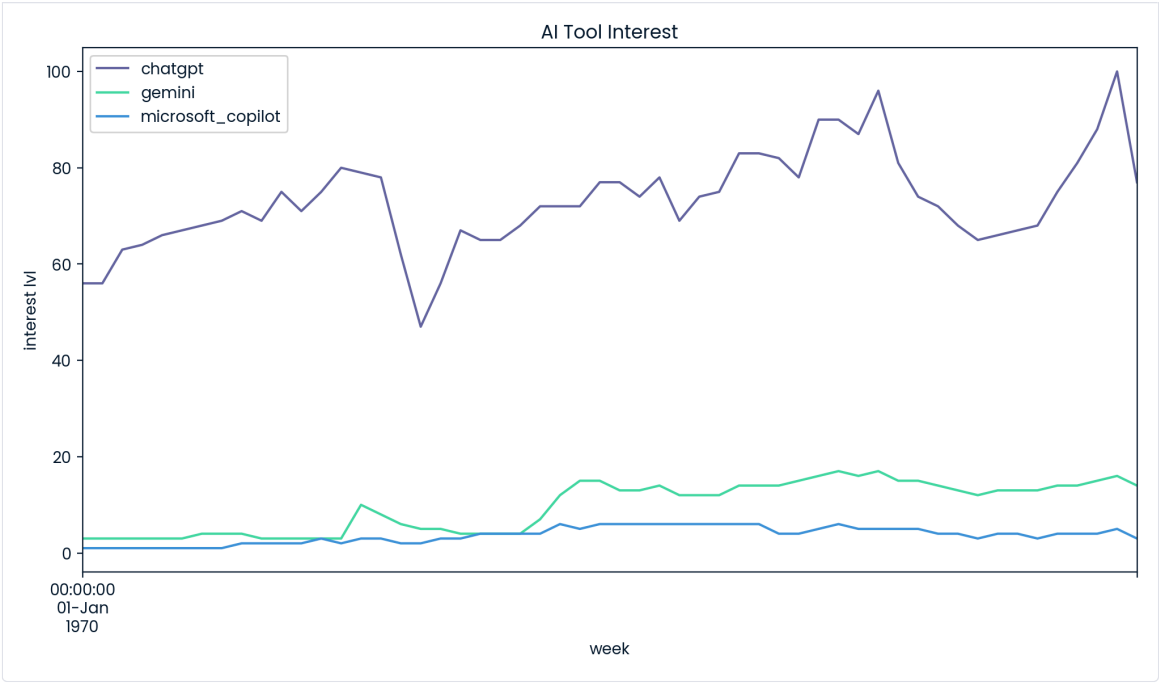
```
import pandas as pd
import matplotlib.pyplot as plt

# Load the data
trends = pd.read_csv('ai_tools_comparison.csv')

# Inspect the data
trends.head()
```

index	week	chatgpt	gemini	microsoft_copilot
0	2023-08-27	56	3	
1	2023-09-03	56	3	
2	2023-09-10	63	3	
3	2023-09-17	64	3	
4	2023-09-24	66	3	

Rows: 5 Expand

```
# Start coding here
# Use as many cells as you need

# convert trends week column into datetime
trends['week'] = pd.to_datetime(trends.index)
trends.set_index('week', inplace=True)
# trends.head()

pct_change = trends[['chatgpt', 'gemini', 'microsoft_copilot']].pct_change().fillna(0).mul(100)
print(pct_change)

std_growth = pct_change.std()
most_consistent_tool = std_growth.idxmin()
print(most_consistent_tool)

trends_copy = trends.copy()
import matplotlib.pyplot as plt
trends_copy[['chatgpt', 'gemini', 'microsoft_copilot']].plot(figsize=(12,6))
plt.title('AI Tool Interest')
plt.xlabel('week')
plt.ylabel('interest lvl')
plt.legend()
plt.show()

gpt_dip = 'March 1970'
```

```
                             chatgpt      gemini  microsoft_copilot
week
1970-01-01 00:00:00.000000000   0.000000    0.000000           0.000000
1970-01-01 00:00:00.000000001   0.000000    0.000000           0.000000
1970-01-01 00:00:00.000000002  12.500000    0.000000           0.000000
1970-01-01 00:00:00.000000003   1.587302    0.000000           0.000000
1970-01-01 00:00:00.000000004   3.125000    0.000000           0.000000
1970-01-01 00:00:00.000000005   1.515152    0.000000           0.000000
1970-01-01 00:00:00.000000006   1.492537   33.333333           0.000000
1970-01-01 00:00:00.000000007   1.470588    0.000000           0.000000
1970-01-01 00:00:00.000000008   2.898551    0.000000         100.000000
1970-01-01 00:00:00.000000009  -2.816901  -25.000000           0.000000
1970-01-01 00:00:00.000000010   8.695652    0.000000           0.000000
1970-01-01 00:00:00.000000011  -5.333333    0.000000           0.000000
1970-01-01 00:00:00.000000012   5.633803    0.000000          50.000000
1970-01-01 00:00:00.000000013   6.666667    0.000000         -33.333333
1970-01-01 00:00:00.000000014  -1.250000  233.333333          50.000000
1970-01-01 00:00:00.000000015  -1.265823  -20.000000           0.000000
1970-01-01 00:00:00.000000016 -20.512821  -25.000000         -33.333333
1970-01-01 00:00:00.000000017 -24.193548  -16.666667           0.000000
1970-01-01 00:00:00.000000018  19.148936    0.000000          50.000000
1970-01-01 00:00:00.000000019  19.642857  -20.000000           0.000000
1970-01-01 00:00:00.000000020  -2.985075    0.000000          33.333333
1970-01-01 00:00:00.000000021   0.000000    0.000000           0.000000
1970-01-01 00:00:00.000000022   4.615385    0.000000           0.000000
1970-01-01 00:00:00.000000023   5.882353   75.000000           0.000000
1970-01-01 00:00:00.000000024   0.000000   71.428571          50.000000
1970-01-01 00:00:00.000000025   0.000000   25.000000         -16.666667
1970-01-01 00:00:00.000000026   6.944444    0.000000          20.000000
```


AI Tool Interest
chatgpt
gemini
microsoft_copilot
interest lvl
100
80
60
40
20
0
00:00:00
01-Jan
1970
week