In [34]: **import** numpy **as** np import matplotlib.pyplot as plt import pandas as pd import yfinance as yf import pandas ta as ta import datetime as dt In [35]: api_key = 'eodhd api key here' api = APIClient(api_key) In [36]: resp = api.financial news(s = "AAPL.US", from date = '2024-01-01', to date = '2024-02-08', limit = 100) df = pd.DataFrame(resp) # converting the json output into datframe df.tail() title link Out[36]: date content symbols tags sentiment \nTravis Hoium | Feb 4, 2024\n **95** 2024-02-04T00:00:00+00:00 The metaverse has lost its luster for a lot of... https://www.fool.com/investing/2024/02/04/3-to... {'polarity': 0.44, 'neg': 0.094, 'neu': 0.735,... [AAPL.US] **96** 2024-02-04T00:00:00+00:00 \nNeil Patel | Feb 4, 2024\n The massive consumer-tech business has proven ... https://www.fool.com/investing/2024/02/04/afte... [AAPL.US] {'polarity': 0, 'neg': 0, 'neu': 1, 'pos': 0} — Facebook parent Meta delivers surprise divid... https://finance.yahoo.com/news/metas-dividend-... [0R2V.IL, AAPL.BA, AAPL.MX, AAPL.NEO, AAPL.SN,... **97** 2024-02-03T19:06:00+00:00 Meta's dividend, Tesla's Musk claps back, Walm... [] {'polarity': 0.988, 'neg': 0.055, 'neu': 0.842... 98 2024-02-03T18:09:49+00:00 11 Best American Defense Stocks To Buy Accordi... In this piece, we will take a look at the 11 b... https://finance.yahoo.com/news/11-best-america... [OBOE.LSE, OJSO.LSE, OK92.LSE, OR3E.LSE, 5UR.F... [] {'polarity': 1, 'neg': 0.043, 'neu': 0.788, 'p... 99 2024-02-03T18:07:00+00:00 Could Apple Acquire Peloton in 2024? 2 Things ... Thanks to its lineup of incredibly popular har... https://finance.yahoo.com/news/could-apple-acq... [AAPL.US, PTON.US] [] {'polarity': 0.994, 'neg': 0.037, 'neu': 0.848... In [37]: #funtion to clean the textual data def clean text(text): cleaned_text = re.sub(r'\s+', ' ', text) return cleaned_text.strip() # Apply the replacement function to the entire column df['content'] = df['content'].apply(clean text) In [38]: | 11m = ChatOpenAI(model = "gpt-3.5-turbo", openai_api_key = 'open ai api key here', temperature = 0) In [39]: template = """ Identify the sentiment towards the Apple(AAPL) stocks from the news article, where the sentiment score should be from -10 to +10 where -10 being the most negative and +10 being the most positive, and 0 being neutral Also give the proper explanation for your answers and how would it effect the prices of different stocks Article : {statement} #forming prompt using Langchain PromptTemplate functionality prompt = PromptTemplate(template = template, input variables = ["statement"]) llm_chain = LLMChain(prompt = prompt, llm = llm) In [40]: | print(llm_chain.run(df['content'][13])) Sentiment score: +8 Explanation: The sentiment towards Apple stocks in this news article is positive. The article mentions that Apple continues to hold onto loyal fans and attract new customers, indicating a positive perception of the company. This positive sentime nt is likely to have a positive effect on the prices of Apple stocks. As more customers are attracted to the brand and loyal fans continue to support the company, it can lead to increased sales and revenue, which in turn can drive up the stock p rices. Investors may view this positive sentiment as a sign of a strong and growing company, potentially leading to increased demand for Apple stocks. In [41]: #A function to count the number of tokens def count_tokens(text): tokens = text.split() return len(tokens) In [42]: # Applying the tokenization function to the DataFrame column df['TokenCount'] = df['content'].apply(count_tokens) In [43]: # Define a token count threshold (for example, keep rows with more than 2 tokens) token_count_threshold = 3500 # Create a new DataFrame by filtering based on the token count new_df = df[df['TokenCount'] < token_count_threshold]</pre> # Drop the 'TokenCount' column from the new DataFrame if you don't need it new_df = new_df.drop('TokenCount', axis = 1) # Resetting the index new_df = new_df.reset_index(drop = True) In [44]: | template_2 = """ Identify the sentiment towards the Apple(AAPL) stocks of the news article from -10 to +10 where -10 being the most negative and +10 being the most positive, and 0 being neutral GIVE ANSWER IN ONLY ONE WORD AND THAT SHOULD BE THE SCORE Article : {statement} #forming prompt using Langchain PromptTemplate functionality prompt_2 = PromptTemplate(template = template_2, input_variables = ["statement"]) In [45]: | 11m_chain_2 = LLMChain(prompt = prompt_2, 11m = 11m) In [46]: print(new_df['content'][2]) print('') print('News sentiment: ', llm_chain_2.run(new_df['content'][2])) In this article, we will be navigating through the 25 largest economies in the world in 2024. If you wish to skip our detailed analysis, you can go directly to the 5 Largest Economies in the World in 2024. 2023: An Uncertain Year for the Global Economy 2023 was the year when the global economy witnessed an uneven recovery from the aftereffects of the COVID-19 pandemic and the war in Ukraine. Overall, the economic activity was unable to return to pre-pandemic levels in the emerging mark et and developing economies. Tightening monetary policies against inflation also played a primary role in limiting a global economic rebound. According to the projections reported by the IMF in October 2023, advanced economies were to experience an economic slowdown in 2023. It was also forecasted that the growth for emerging markets and developing economies would decline modestly. Let's analyze how the world's leading economies such as the United States, China, and India faced economic uncertainty in 2023. The United States performed better than expected due to the resilience shown by its labor market. Although the Federal Reserve continued to engage in interest rate hikes, unemployment was only 3.7% during the third quarter of 2023. Homeowners were also capable of sustaining their net worth amid high home prices. China, the world's second-largest economy, was referred to as a burden to global economic growth in 2023. On December 29, 2023, CNNrepor ted that various challenges restrict progress for China. The slowdown effect on the overall economy in 2023 resulted from the strong lockdowns imposed on Beijing during the pandemic's outbreak. Due to the rising scrutiny, foreign direct investme nt in China experienced a strong decline during the third quarter of 2023. Other limiting factors include a property crisis and high unemployment rates among the youth. Another economic issue relates to demographics such as the declining fertili ty rates which could reduce the labor supply and increase the debt burden for the country in the future. Against the structural problems in the economy, the Chinese government appears to be hopeful for the economy to rebound. Story continues Dur ing a challenging global economic environment, India has emerged as a resilient power which contributed 16% to the world's growth in 2023. On January 15, the World Economic Forumreported that India is all set to become the world's third-largest economy over the next five years. Between 2022 and 2023, the country was successful in achieving the second-highest growth rate among other G20 nations. Apart from fostering innovation and technology, India has also been investing in public infr astructure. Global Economic Outlook for 2024 Asreported by the International Monetary Fund, global economic growth which was estimated at 3.1% in 2023 is expected to remain at 3.1% in 2024. Although this projected growth is higher than the last forecast made in October 2023, it is still lower than the historical annual average of 3.8%. Regional Forecast for Economies in 2024 For advanced economies, the IMF has projected that their economic growth will drop from 1.6% in 2023 to 1.5% in 2024 before slightly going up to 1.8% in 2025. In the case of the United States, growth has been forecasted to drop from 2.5% in 2024. Simultaneously, the euro area is expected to experience a recovery in its growth rate. This re covery will be backed up by circumstances such as real income growth, reduced inflation, and stronger household consumption due to the subsiding effects of the Russian invasion of Ukraine, a conflict that broke out almost two years ago. Due to t he diminishing effects of high energy prices, the United Kingdom will also be witnessing a modest rise in its economic growth in 2024. For the emerging market and developing economies, growth will continue to remain at 4.1% in 2024 before it cli mbs higher in 2025. In Asia, India and China serve to be the leading global powers. Backed up by its domestic demand, the economic growth of India will remain resilient. On the other hand, China's growth has been projected at 4.6% in 2024 which ex ceeds the previously forecasted growth rate due to a higher government spending for tackling natural calamities, and a stronger than expected growth in 2023. Emerging and developing Europe is also expected to improve its economic growth from 2.7% in 2023 to 2.8% in 2024. United States: A Powerful Economic and Business Hub Being an advanced economy, the United States hosts some of the most valuable companies worldwide. Some of the companies thriving in the US and internationally include A mazon.com Inc. (NASDAO:AMZN), Microsoft Corporation (NASDAO:MSFT), and Apple Inc. (NASDAO:AAPL). Let's take a look at what these companies have been up to. Amazon.com Inc. (NASDAO:AMZN) strives to enhance customer experience and foster economic growth using generative AI. On February 8, Amazon.com Inc. (NASDAO:AMZN) reported that it has joined the U.S. Artificial Intelligence Safety Institute Consortium. This collaboration is focused on developing and deploying safe and responsible AI. The firm will also be contributing \$5 million to the National Institute of Standards and Technology which has established the consortium, to ultimately help organizations gauge the safety of their foundation models. Microsoft Corporation (NASDA) 0:MSFT) builds upon innovation to cater to a global digital audience. On February 7, the company reported that it has updated the Microsoft Copilot by improving the overall experience with the use of AI and introducing new suggested prompts and image creation capabilities. Microsoft Copilot has created more than 5 billion chats and 5 billion images up till now. Images generated can also be customized using inline editing. Microsoft Corporation (NASDAQ:MSFT) also plans to launch Designe r GPT inside Copilot which will be offering a canvas for visualizing ideas. As of 2024, Apple Inc.'s (NASDAQ:AAPL) installed base of active devices has exceeded 2.2 billion globally. On February 1, the company reported strong financial results f or the first quarter of fiscal 2024. Apple Inc. (NASDAO:AAPL) reported earnings per share of \$2.18, beating EPS estimate by \$0.08. The company's revenue for the quarter amounted to \$119.58 billion, up 2.07% year-over-year and ahead of revenue co nsensus by \$1.31 billion. With this context, let's take a look at the 25 largest economies in the World in 2024. 25 Largest Economies in the World in 2024 Our Methodology: In order to compile a list of t he 25 largest economies in the world in 2024, we sourced data from the IMF. We selected the Gross Domestic Product (GDP), as of 2023, as our metric. We have also mentioned the GDP per capita for all countries, which was also sourced from the IMF. F. We have ranked the 25 largest economies in the world in 2024 in ascending order of their GDPs, 25 Largest Economies in the World in 2024 25. Sweden GDP: \$597.11 Billion GDP Per Capita: \$55,220 According to the IMF, the GDP of Sweden was \$597. 11 billion and the country had a GDP per capita of \$55,220. Sweden ranks as one of the 25 largest economies in the world in 2024. 24. Argentina GDP: \$621.83 Billion GDP Per Capita: \$13,300 According to the IMF, the GDP of Argentina was \$621.83 b illion in 2023 and the country's GDP per capita was \$13,300. Hence, Argentina is one of the major global economies. 23. Belgium GDP: \$627.51 Billion GDP Per Capita: \$53,660 As reported by the IMF, Belgium's GDP is \$627.51 billion, as of 2023. Fu rthermore, the country has a GDP per capita of \$53,660. 22. Taiwan GDP: \$751.93 Billion GDP per Capita: \$32,340 Taiwan is another large global economy. According to the IMF, the country's GDP was \$751.93 billion in 2023 and it had a GDP per capita ta of \$32,340. 21. Poland GDP: \$842.17 Billion GDP Per Capita: \$22,390 Poland is another European nation that qualifies as one of the 25 largest economies in the world. Real GDP of the country has been forecasted to grow by 2.8% in 2024. As repo rted by the IMF, Poland's GDP was \$842.17 billion in 2023. 20. Switzerland GDP: \$905.68 Billion GDP Per Capita: \$102,870 According to the IMF, Switzerland's GDP was \$905.68 billion in 2023 and the country had a GDP per capita of \$102,870. Hence, Switzerland is another large world economy. 19. Saudi Arabia GDP: \$1.07 Trillion GDP Per Capita: \$32,590 Based on GDP, Saudi Arabia is one of the world's largest economies in 2024. The country's GDP was \$1.07 trillion in 2023. IMF has projected the country's real GDP to grow by 2.7% in 2024. 18. Netherlands GDP: \$1.09 Trillion GDP Per Capita: \$61,770 The Netherlands ranks as one of the 25 largest economies in the world. According to the IMF, the country's GDP was \$1.09 trillion in 202 3. Real GDP of the Netherlands has been forecasted to grow by 0.7% in 2024. 17. Turkey GDP: \$1.15 Trillion GDP Per Capita: \$13,380 As reported by the IMF, Turkey's GDP was \$1.15 trillion in 2023. IMF has projected the country's real GDP to grow by 3.1% in 2024. Hence, Turkey is another large economy in the world. 16. Indonesia GDP: \$1.42 Trillion GDP Per Capita: \$5,110 Indonesia is one of the largest economies in the world. According to the IMF, the country's GDP was \$1.42 trillion in 2023. Real GDP of Indonesia has been forecasted to grow by 5.0% in 2024. 15. Spain GDP: \$1.58 Trillion GDP Per Capita: \$33,090 As reported by the IMF, Spain's GDP was \$1.58 trillion in 2023. Furthermore, the real GDP of the country is expected to o grow by 1.5% in 2024. 14. Australia GDP: \$1.69 Trillion GDP Per Capita: \$63,490 The real GDP of Australia is expected to grow by 1.4% in 2024 which is higher than the forecast last made in October 2023. According to the IMF, the country's GDP was \$1.69 trillion in 2023. 13. South Korea GDP:\$1.71 Trillion GDP Per Capita: \$33,150 As reported by the IMF, South Korea's GDP was \$1.71 trillion in 2023. Real GDP of South Korea is expected to grow by 2.3% in 2024. Hence, South Korea ranks as one of the largest economies in the world. 12. Mexico GDP: \$1.81 Trillion GDP Per Capita:\$13,800 Mexico is another large global economy. According to the IMF, the country's GDP was \$1.81 trillion in 2023. Real GDP of Mexico is expected to grow be y 2.7% in 2024. 11. Russia GDP: \$1.86 Trillion GDP Per Capita: \$13,010 The 25 largest economies in the world include Russia as well. According to the IMF, the country's GDP was \$1.86 trillion in 2023. Real GDP of Russia is expected to grow by 2. 6% in 2024. 10. Canada GDP: \$2.12 Trillion GDP Per Capita: \$53,250 Canada builds upon its developed sectors of manufacturing and services. As reported by the IMF, Canada's GDP was \$2.12 trillion in 2023. The nation's real GDP is expected to grow by 1.4% in 2024. 9. Brazil GDP: \$2.13 Trillion GDP Per Capita: \$10,410 Brazil's real GDP has been forecasted to grow by 1.7% in 2024. According to the IMF, the GDP of the country was \$2.13 trillion in 2023. Hence, Brazil is one of the major glob al economies. 8. Italy GDP: \$2.19 Trillion GDP Per Capita: \$37,150 Italy is one of the largest economies in Europe. As reported by the IMF, the country's GDP was \$2.19 trillion in 2023. It has also been projected that Italy's real GDP will grow by 0.7% in 2024. 7. France GDP:\$3.05 Trillion GDP Per Capita:\$46,320 France is another established and diversified economy. According to the IMF, the country's GDP was \$3.05 trillion in 2023. France's real GDP has been projected to grow by 1% in 2024. 6. United Kingdom GDP: \$3.33 Trillion GDP Per Capita: \$48,910 As reported by the IMF, the GDP of the United Kingdom was \$3.33 trillion in 2023 and the country had a GDP per capita of \$48,910. The capital city of London serves as a global fi nancial center. Click to continue reading and see 5 Largest Economies in the World in 2024. Suggested articles: 30 Most Interesting Cities in America 12 Stocks that Could Skyrocket According to Investment Newsletters 14 Best Cyclical Stocks To I nvest In Disclosure: None. 25 Largest Economies in the World in 2024 is originally published on Insider Monkey. News sentiment: 0 In [47]: x = []for i in range(0, new df.shape[0]): x.append(llm_chain_2.run(new_df['content'][i])) In [48]: **import** matplotlib.pyplot **as** plt dt = pd.DataFrame(x) #Converting into Dataframe column_name = 0 # this is my column name you should change it according to your data value counts = dt[column name].value counts() # Plotting the pie chart plt.pie(value_counts, labels = value_counts.index, autopct = '%1.1f%%', startangle = 140) plt.title(f'Pie Chart') plt.axis('equal') # Equal aspect ratio ensures that the pie is drawn as a circle. # Show the pie chart plt.show() Pie Chart +10 +7 6.1% 11.1% +5 15.2% 36.4% 23.2% 0 In [50]: value to remove = '0' # Remove all rows where the specified value occurs in the column dt_new = dt[dt[0] != value_to_remove] In [51]: value_counts = dt_new[column_name].value_counts() # Plotting the pie chart plt.pie(value counts, labels = value counts.index, autopct = '%1.1f%%', startangle = 140) plt.title(f'Pie Chart') plt.axis('equal') # Equal aspect ratio ensures that the pie is drawn as a circle. # Show the pie chart plt.show() Pie Chart +10 9.5% +8

In []

17.5%

23.8%

36.5%

-5

In [32]: import re

import requests

import pandas as pd
import config as cfg

from eodhd import APIClient

from langchain.chains import LLMChain

from langchain.prompts import PromptTemplate
from langchain.chat models import ChatOpenAI