



Lambton College

A Report On: -
News Insights on Companies of China

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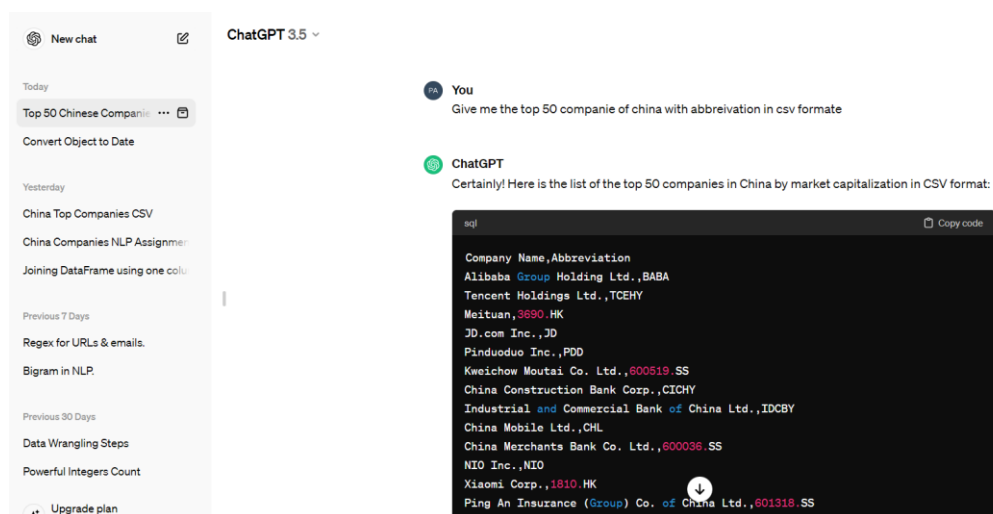
Objective

Extracting the Data like News Articles of top 50 companies of China and then apply the sentiment analysis on the News Article. The Dataset are created using the Yahoo Finance Api in python and then apply Natural Language Processing Technique from the news article to get the Sentiment of the News. This report gives the step by step guide through the process of gathering data and analyzing it according to the news sentiment.

Data Extraction

1) Extracting Top companies from ChatGPT

- Extracted Top 50 companies of china using the ChatGPT in CSV format.



- Then Load the dataset in the Excel and using the pandas library of python import the dataset in the jupyter note book.

```
In [53]: # get the Dataset
data=pd.read_csv('Book2.csv')
```

```
In [54]: data.head()
```

Out[54]:

	Company Name,Abbreviation
0	Alibaba Group Holding Limited,BABA
1	Tencent Holdings Limited,TCEHY
2	China Mobile Communications Corporation,CHL
3	Industrial and Commercial Bank of China,IDCBY
4	China Construction Bank Corporation,CICBY

2) Extracting News from Yahoo finance

- Importing the Yahoo Finance Api to extract the news .

```
from yahoo_fin import news as yahoo_news
```

- Fetching the news from the Yahoo Finance Api about the companies.

```
all_news_df = pd.concat(news_dataset)
```

```
In [237]: all_news_df
```

```
Out[237]:
```

	Title	Content	published_date	Company
0	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	Wed, 14 Feb 2024 18:01:33 +0000	BABA
1	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	Wed, 14 Feb 2024 12:55:23 +0000	BABA
2	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e-...	Tue, 13 Feb 2024 16:11:00 +0000	BABA
3	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	Tue, 13 Feb 2024 14:00:10 +0000	BABA
4	13 Best Metaverse Stocks To Buy Right Now	In this article, we discuss 13 best metaverse ...	Mon, 12 Feb 2024 17:24:38 +0000	BABA
...
15	Country Garden to Make CNY3.07 Billion Dispos...	Chinese property giant Country Garden will sel...	Thu, 14 Dec 2023 01:16:00 +0000	2007.HK
16	Country Garden sells stake in Dalian Wanda uni...	HONG KONG (Reuters) -China's embattled Country...	Thu, 14 Dec 2023 00:37:15 +0000	2007.HK
17	UPDATE 1-Country Garden has remitted funds to ...	Embattled Chinese developer Country Garden Hol...	Wed, 13 Dec 2023 12:00:25 +0000	2007.HK
18	Country Garden repays US\$111 million bond in f...	Embattled property developer Country Garden Ho...	Wed, 13 Dec 2023 09:30:00 +0000	2007.HK
19	Trending tickers: Arm Jumia Country Garden...	The latest investor updates on stocks that are...	Thu, 23 Nov 2023 09:59:54 +0000	2007.HK

227 rows x 4 columns

3) News Data

- The final Dataset Contaning the news Titel, content and the Sentiment Analysis of the Dataset.

```
In [231]: merge_data
```

```
Out[231]:
```

	Title	Content	Abbreviation	date	Company_Name	titel_Sentiment	Content_Sentiment
0	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	BABA	2024-02-14	Alibaba Group Holding Limited	1	1
1	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	BABA	2024-02-14	Alibaba Group Holding Limited	-1	1
2	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e-...	BABA	2024-02-13	Alibaba Group Holding Limited	0	0
3	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	BABA	2024-02-13	Alibaba Group Holding Limited	-1	1
4	13 Best Metaverse Stocks To Buy Right Now	In this article, we discuss 13 best metaverse ...	BABA	2024-02-12	Alibaba Group Holding Limited	1	1
...
222	Country Garden to Make CNY3.07 Billion Dispos...	Chinese property giant Country Garden will sel...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	0	-1
223	Country Garden sells stake in Dalian Wanda uni...	HONG KONG (Reuters) -China's embattled Country...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	0	-1
224	UPDATE 1-Country Garden has remitted funds to ...	Embattled Chinese developer Country Garden Hol...	2007.HK	2023-12-13	Country Garden Holdings Company Limited	1	-1
225	Country Garden repays US\$111 million bond in f...	Embattled property developer Country Garden Ho...	2007.HK	2023-12-13	Country Garden Holdings Company Limited	1	1
226	Trending tickers: Arm Jumia Country Garden...	The latest investor updates on stocks that are...	2007.HK	2023-11-23	Country Garden Holdings Company Limited	0	1

227 rows x 7 columns

Data Validation

1. Companies Validation

- Five companies from the dataset for the validation to check the companies are present in real or not.

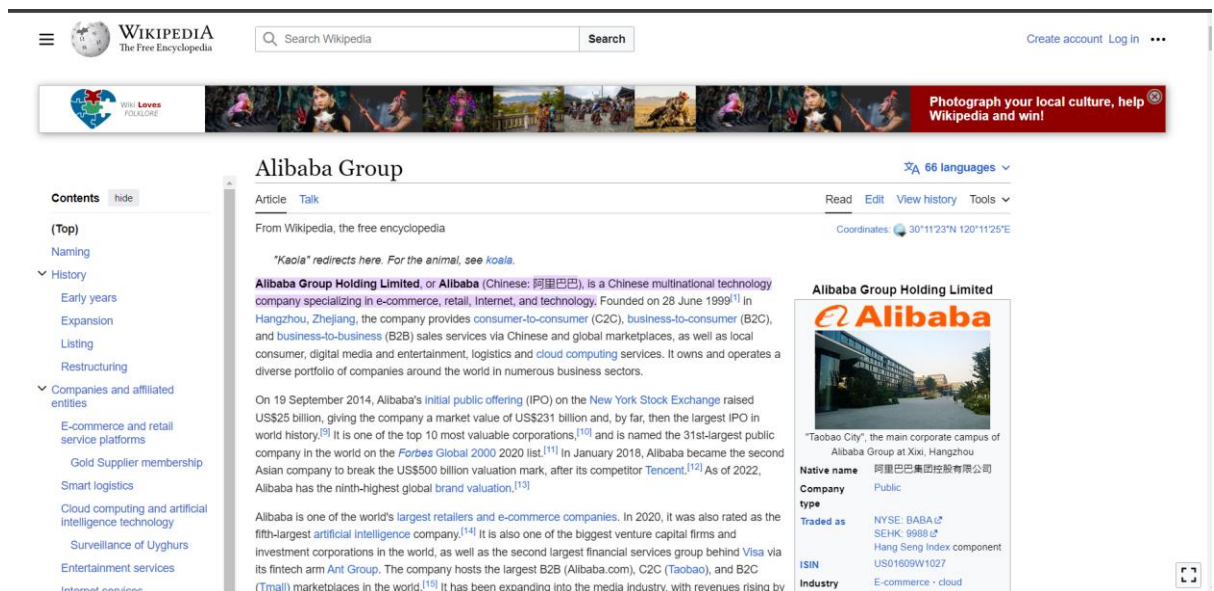
```
In [42]: # copy Data on the Root dataset
data.head()
```

Out[42]:

	Company_Name	Abbreviation
0	Alibaba Group Holding Limited	BABA
1	Tencent Holdings Limited	TCEHY
2	China Mobile Communications Corporation	CHL
3	Industrial and Commercial Bank of China	IDCBY
4	China Construction Bank Corporation	CICHY

a) Alibaba Group Holding Limited

- Alibaba company is multi billion dollar company from China working in various field like e-commerce, retail, Internet and Technology.



The screenshot shows the Wikipedia page for Alibaba Group. The page is in English and includes a search bar at the top. The main content area contains a detailed description of the company, its history, and its business operations. The sidebar on the right includes a photo of the company's headquarters and a table with company details.

Alibaba Group Holding Limited

Alibaba Group Holding Limited, or Alibaba (Chinese: 阿里巴巴), is a Chinese multinational technology company specializing in e-commerce, retail, Internet, and technology. Founded on 28 June 1999^[1] in Hangzhou, Zhejiang, the company provides consumer-to-consumer (C2C), business-to-consumer (B2C), and business-to-business (B2B) sales services via Chinese and global marketplaces, as well as local consumer, digital media and entertainment, logistics and cloud computing services. It owns and operates a diverse portfolio of companies around the world in numerous business sectors.

On 19 September 2014, Alibaba's initial public offering (IPO) on the New York Stock Exchange raised US\$25 billion, giving the company a market value of US\$231 billion and, by far, then the largest IPO in world history.^[9] It is one of the top 10 most valuable corporations,^[10] and is named the 31st-largest public company in the world on the *Forbes Global 2000* 2020 list.^[11] In January 2018, Alibaba became the second Asian company to break the US\$500 billion valuation mark, after its competitor *Tencent*.^[12] As of 2022, Alibaba has the ninth-highest global brand valuation.^[13]

Alibaba is one of the world's largest retailers and e-commerce companies. In 2020, it was also rated as the fifth-largest artificial intelligence company.^[14] It is also one of the biggest venture capital firms and investment corporations in the world, as well as the second largest financial services group behind *Visa* via its fintech arm *Ant Group*. The company hosts the largest B2B (Alibaba.com), C2C (Taobao), and B2C (Tmall) marketplaces in the world.^[15] It has been expanding into the media industry, with revenues rising by

Alibaba Group Holding Limited

Native name 阿里巴巴集团控股有限公司

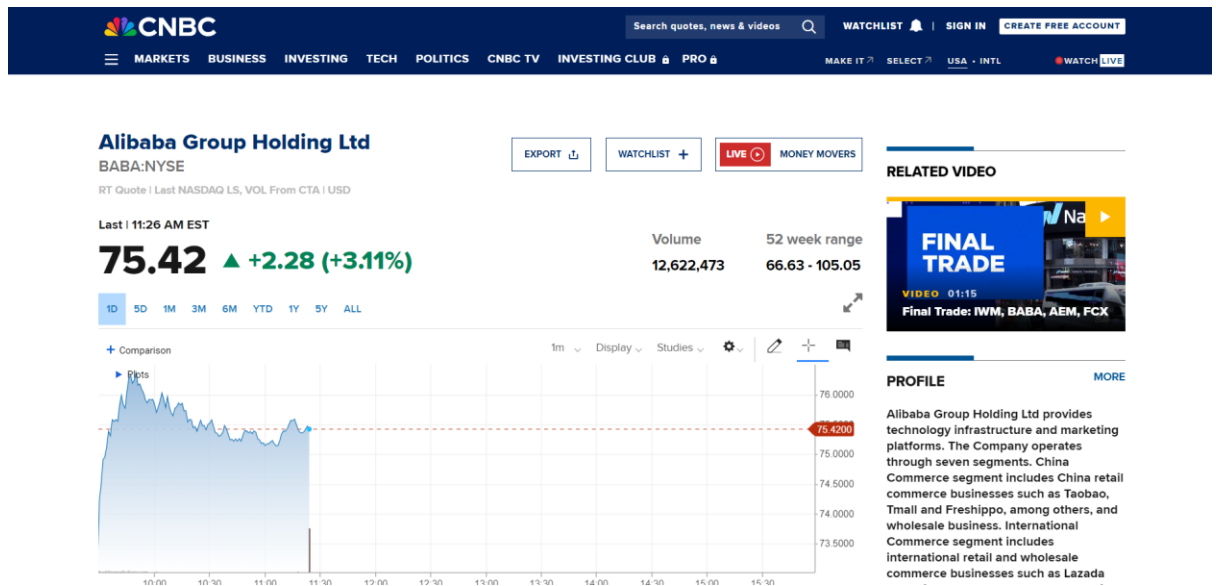
Company type Public

Traded as NYSE: BABA^[2] SEHK: 9988^[3] Hang Seng Index component

ISIN US01609W1027

Industry E-commerce · cloud

- This company also register in the us stock exchange and the proof is given on the cnbc news.



b) Tencent Holdings Limited

- The Tencent has the world's largest video game company based on the Tencent games according to the Wikipedia.

WIKIPEDIA
The Free Encyclopedia

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Create account Log in

Tencent 54 languages

Article Talk

From Wikipedia, the free encyclopedia

Tencent Holdings Ltd. (Chinese: 腾讯; pinyin: *Téngxùn*) is a Chinese multinational technology conglomerate and holding company headquartered in Shenzhen. It is one of the highest grossing multimedia companies in the world based on revenue. It is also the world's largest company in the video game industry based on its equity investments, with Tencent Games being the subdivision of Tencent Interactive Entertainment Group (IEG) focused on publishing of games.^[4]

Founded in 1998, its subsidiaries globally market various Internet-related services and products, including in entertainment, artificial intelligence, and other technology.^[5] Its twin-skyscraper headquarters, **Tencent Seafront Towers** (also known as Tencent Binhai Mansion) are based in the Nanshan District of Shenzhen.^[6]

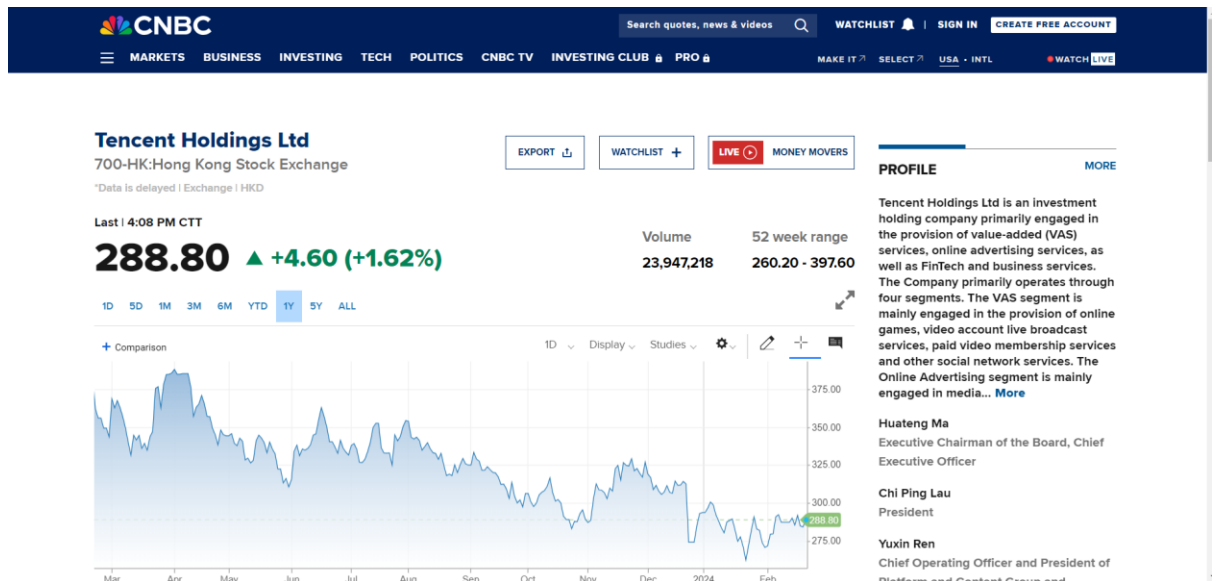
Tencent is the world's largest video game vendor,^[7] as well as one of the most financially valuable companies.^[8] It is among the largest social media,^[9] venture capital, and investment corporations.^{[10][11]} Its services include social networks, music, web portals, e-commerce, mobile games, Internet services, payment systems, smartphones, and multiplayer online games.^[12] It operates the instant messengers Tencent QQ and WeChat, and QQ.com.^[13] It also owns Tencent Music.

The company surpassed a market value of US\$500 billion in 2018, becoming the first Asian technology company to cross this valuation mark.^{[14][15][16]} It has since then emerged as the most valuable publicly traded company in China, and is the world's tenth most valuable company by market value as of February

Tencent Holdings Ltd.
Tencent 腾讯

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- The company is also listed in the stock exchange and the proof is from the cnbc news.



c) China Mobile Communications Corporation

- The China Mobile Communications Corporation is the telecommunication company in main land China and Hong Kong with around 1 billion user.

WIKIPEDIA The Free Encyclopedia

Search Wikipedia

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China Mobile

38 languages

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Hong Kong

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Singapore

Network

See also

Article Talk

From Wikipedia, the free encyclopedia

You can help expand this article with text translated from the corresponding article in Chinese. (October 2017) Click [show] for important translation instructions.

China Mobile is the trade name of both **China Mobile Limited** (Chinese: 中国移动有限公司; pinyin: Zhōngguó Yídòng Yóu Xiǎn Gōngsī) and its ultimate controlling shareholder, **China Mobile Communications Group Co., Ltd.** (Chinese: 中国移动通信集团有限公司; pinyin: Zhōngguó Yídòng Tōngxìn Jítuán Gōngsī), formerly known as China Mobile Communications Corporation, "CMCC"), a Chinese state-owned^[1] company. China Mobile Limited provides mobile voice and multimedia services through its nationwide mobile telecommunications network across mainland China and Hong Kong.^[2] China Mobile is the largest wireless carrier in China, with 945.50 million subscribers as of June 2021.^[8] China Mobile was ranked #25 in Forbes' Global 2000 in 2023.^[9]

China Mobile Limited is listed on the Hong Kong Stock Exchange.^[2] It is the world's largest mobile network operator by total number of subscribers.^[10]

As of 31 October 2020, China Mobile Limited's total market value stood at HK\$965 billion, which is the largest red chip company.^[11]

History [edit]

China Mobile Limited
中国移动有限公司

中国移动
China Mobile

- The company is detail also present in the forbes list.



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China Construction Bank

33 languages

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From Wikipedia, the free encyclopedia

China Construction Bank Corporation (CCB) is one of the "big four" banks in China. In 2015, CCB was the 2nd largest bank in the world by market capitalization and 6th largest company in the world.^{[3][4]} The bank has approximately 13,629 domestic branches. In addition, it maintains overseas branches in London, Barcelona, Frankfurt, Luxembourg, Hong Kong, Johannesburg, New York City, Seoul, Singapore, Tokyo, Melbourne, Kuala Lumpur, Santiago de Chile, Brisbane, Sydney and Auckland. Its total assets reached CN¥ 8.7 trillion in 2009,^[5] and it is considered a systemically important bank by the Financial Stability Board. Its headquarters is in Xicheng District, Beijing.^[6]

History



CCB was founded on 1 October 1954 under the name of People's Construction Bank of China (Chinese: 中国人民建设银行; pinyin: *Zhōngguó Rénmín Jiànshè Yínháng*), and later changed to China Construction Bank on 26 March 1996. It was established to focus on financing for investments, in the context of the People's Bank of China beginning to spin off its commercial banking functions.^{[7][225]}

In January 2002, CCB chairman Wang Xuebing resigned from the bank after being charged with accepting bribes while he was employed with Bank of China; he was sentenced to 12 years in

China Construction Bank



Headquarters in Beijing

Native name 中国建设银行

2. Abbreviation Validation

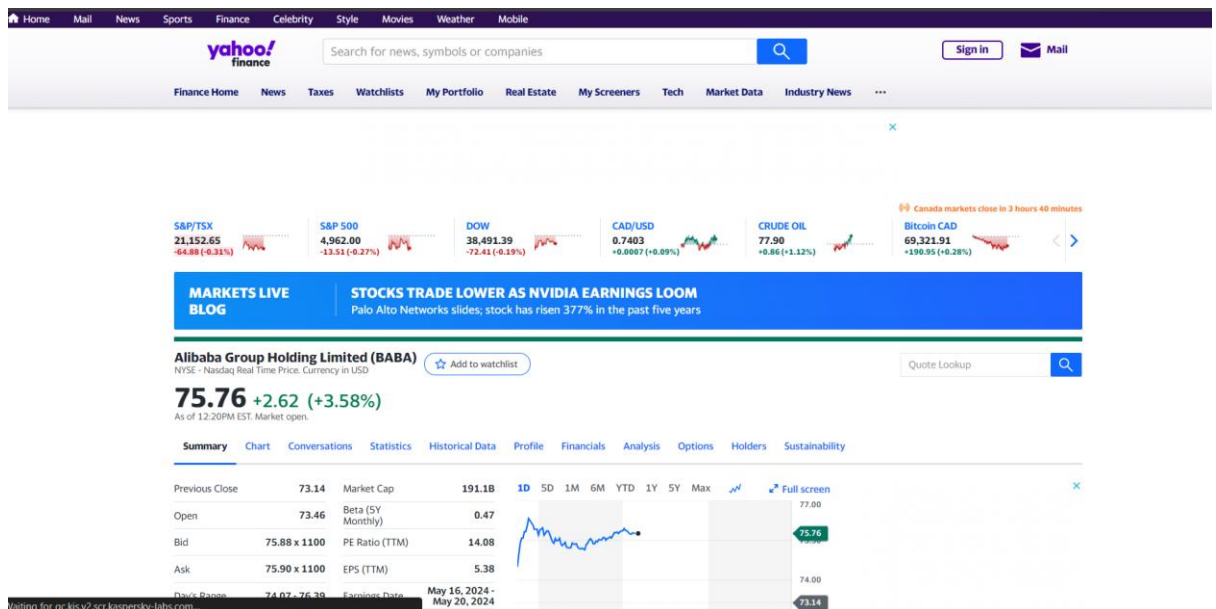
a. BABA

- BABA is the abbreviations for the Alibaba company it is given to the company for the unique identification of the Company.

```
In [7]: data[data['Abbreviation']=='BABA']
```

```
Out[7]:
```

	Company_Name	Abbreviation
0	Alibaba Group Holding Limited	BABA



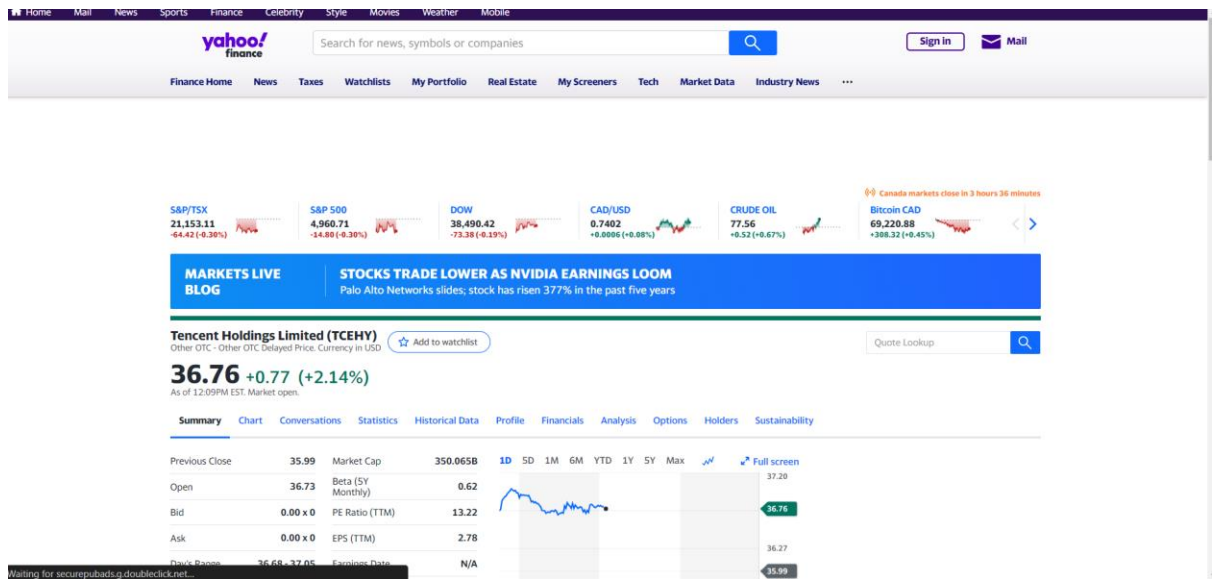
b. TCEHY

- Tcehy is the abbreviation given to the Tencent company for the unique identification of the stock.

```
In [8]: data[data['Abbreviation']=='TCEHY']
```

```
Out[8]:
```

	Company_Name	Abbreviation
1	Tencent Holdings Limited	TCEHY



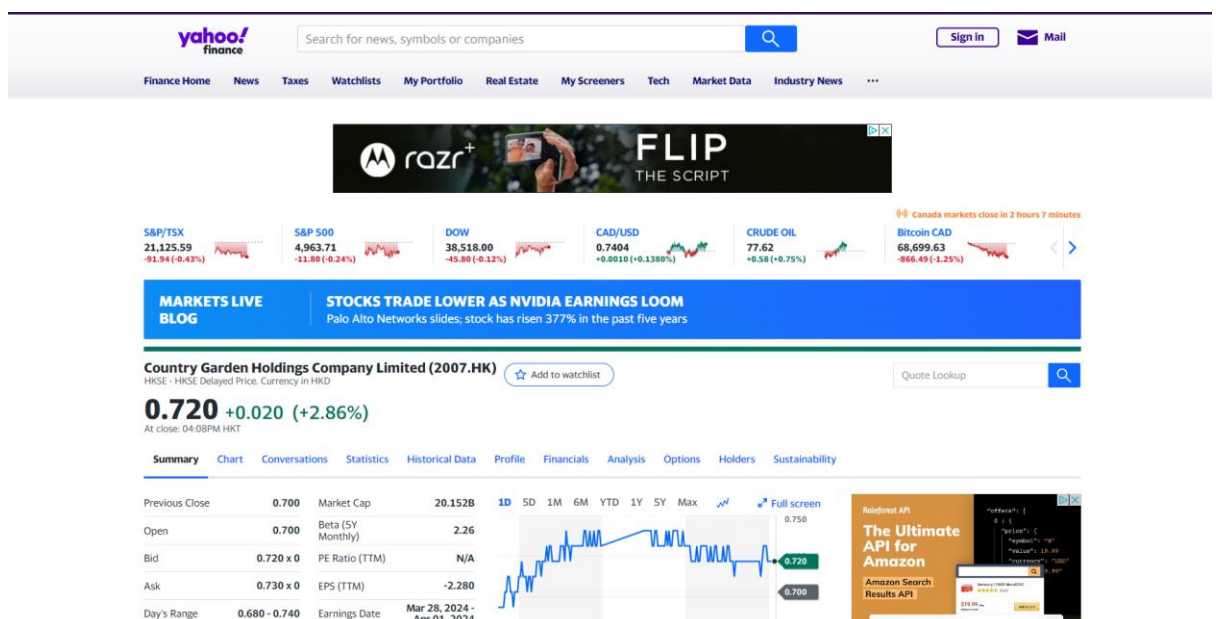
c. 2007.HK

- 2007.hk is the abbreviation for the Country Garden Holdings Company Limited the same abbreviation is used in the code for extracting the news and present in the yahoo finance web page.

In [9]: `data[data['Abbreviation']=='2007.HK']`

Out[9]:

	Company_Name	Abbreviation
45	Country Garden Holdings Company Limited	2007.HK



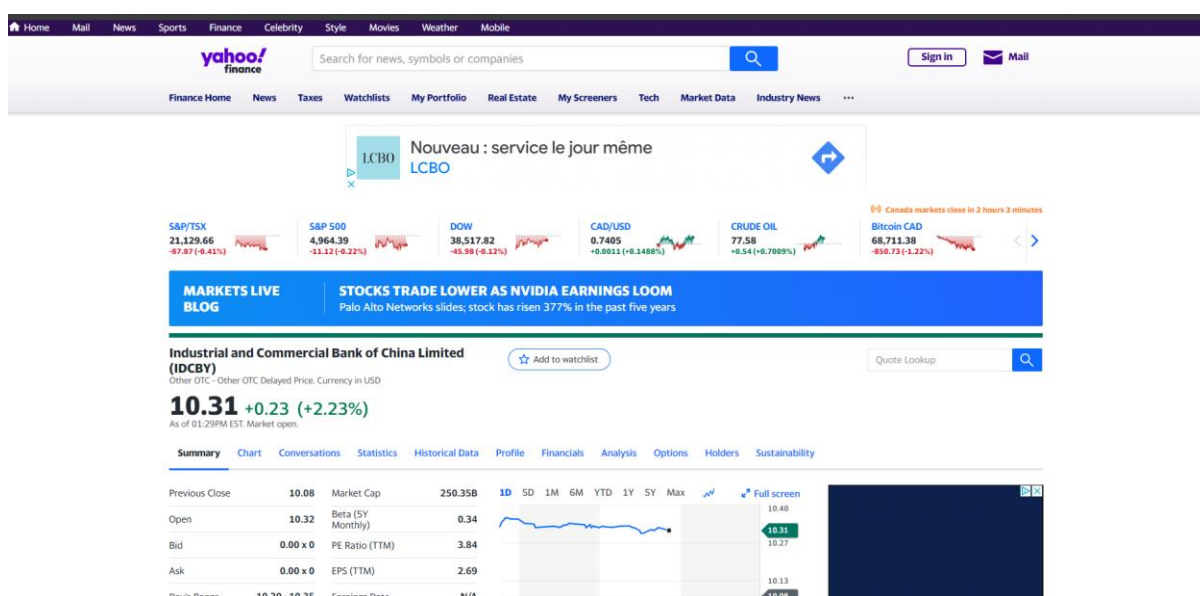
d. IDCBY

- The Industrial and Commercial Bank of China have the abbreviation name the IDCBY for the unique identification in the stock market.

```
In [10]: data[data['Abbreviation']=='IDCBY']
```

```
Out[10]:
```

	Company_Name	Abbreviation
3	Industrial and Commercial Bank of China	IDCBY



e. CICHY

- The CICHY is unique identification for the China Construction Bank Corporation.

```
In [11]: data[data['Abbreviation']=='CICHY']
```

```
Out[11]:
```

	Company_Name	Abbreviation
4	China Construction Bank Corporation	CICHY

yahoo!

finance

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...

S&P/TSX

21,124.15

-93.38 (-0.44%)

S&P 500

4,959.80

-35.71 (-0.72%)

DOW

38,482.69

-81.11 (-0.21%)

CAD/USD

0.7403

+0.0004 (+0.05%)

CRUDE OIL

77.73

+0.69 (+0.89%)

Bitcoin CAD

68,700.88

-837.50 (-1.23%)

Canada markets close in 1 hour 59 minutes

MARKETS LIVE

STOCKS TRADE LOWER AS NVIDIA EARNINGS LOOM

Palo Alto Networks slides; stock has risen 377% in the past five years

China Construction Bank Corporation (CICHY)

Other OTC - Other OTC Delayed Price. Currency in USD

Add to watchlist

Quote Lookup

12.41

+0.22

(+1.76%)

As of 01:42PM EST. Market open.

Summary

Chart

Conversations

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Options

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Sustainability

Previous Close	12.20	Market Cap	159.793B	1D	5D	1M	6M	YTD	1Y	5Y	Max	Full screen
Open	12.42	Beta (5Y Monthly)	0.44									
Bid	N/A x N/A	PE Ratio (TTM)	3.41									
Ask	N/A x N/A	EPS (TTM)	3.64									
Dividend	12.38 - 12.45	Ex-dividend Date	N/A									

Realtor API

Put Us To The Test!

The Ultimate Amazon Data API

Waiting for content.quantcount.com...

3. Yahoo Finance API News for Five Companies

1) Alibaba Group Holding Limited :

- News fetched from the yahoo finance Dataset.

```
In [254]: all_news_df[all_news_df['Abbreviation']=='BABA']
```

```
Out[254]:
```

	Title	Content	published_date	Abbreviation	date
0	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	Wed, 14 Feb 2024 18:01:33 +0000	BABA	2024-02-14
1	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	Wed, 14 Feb 2024 12:55:23 +0000	BABA	2024-02-14
2	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e-...	Tue, 13 Feb 2024 16:11:00 +0000	BABA	2024-02-13
3	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	Tue, 13 Feb 2024 14:00:10 +0000	BABA	2024-02-13
4	13 Best Metaverse Stocks To Buy Right Now	In this article, we discuss 13 best metaverse ...	Mon, 12 Feb 2024 17:24:38 +0000	BABA	2024-02-12
5	What Temu's Super Bowl Push Means for Alibaba...	Investors looking for a read on trends had a f...	Mon, 12 Feb 2024 15:23:00 +0000	BABA	2024-02-12
6	11 Most Promising Chinese Stocks According to ...	In this article, we discuss 11 most promising ...	Sat, 10 Feb 2024 22:34:48 +0000	BABA	2024-02-10
7	Could Alibaba Stock Help You Become a Milliona...	The Chinese tech giant faces tough long-term c...	Sat, 10 Feb 2024 13:15:00 +0000	BABA	2024-02-10
8	Got \$5,000? These 3 Stocks Are Near Their 52-W...	These stocks all trade at less than 17 times t...	Sat, 10 Feb 2024 10:03:00 +0000	BABA	2024-02-10
9	Alibaba (BABA) Q3 Earnings Miss Estimates, Rev...	Alibaba's (BABA) third-quarter fiscal 2024 res...	Fri, 09 Feb 2024 16:50:00 +0000	BABA	2024-02-09
10	Alibaba (BABA) Is Considered a Good Investment...	Based on the average brokerage recommendation ...	Fri, 09 Feb 2024 14:30:05 +0000	BABA	2024-02-09
11	\$200 Million Insider Bet, Massive Buybacks Poi...	The company is unleashing potential with insid...	Fri, 09 Feb 2024 13:01:46 +0000	BABA	2024-02-09
12	Alibaba Group Holding Limited Earnings Missed ...	Alibaba Group Holding Limited (NYSE:BABA) sh...	Fri, 09 Feb 2024 10:49:04 +0000	BABA	2024-02-09
13	Why Alibaba Stock Tanked Today	Even the addition of \$25 billion to its existi...	Thu, 08 Feb 2024 22:51:23 +0000	BABA	2024-02-08

- News on the Yahoo finance Website

The screenshot shows the Yahoo Finance website interface. At the top, there's a search bar and navigation links for 'Sign in' and 'Mail'. The main content area displays several news articles related to Alibaba Group Holding Limited (BABA). The first article is titled 'Michael Burry's Strategic Exits and New Positions Highlight Q4 Moves, Stellantis NV Takes a -7. ...' with a sub-headline 'Insight into the Latest 13F Filing Reveals Burry's Investment Adjustments'. Below it is an advertisement for the 2024 Toyota Tundra. The second article is 'Alibaba Stock Has Little to Celebrate During Lunar New Year, According to History' from Barrons.com, dated 10 hours ago. The third article is 'Alibaba Group Holding Limited (BABA) Is a Trending Stock: Facts to Know Before Betting on It' from Zacks, dated yesterday. On the right side, there's a section titled 'People Also Watch' listing stocks like META, NVDA, NFLX, PYPL, and BIDU. Below that is a 'Similar to BABA' section listing AMZN. The bottom of the page shows a weather widget indicating -2°C and 'Mostly sunny'.

2) Tencent Holdings Limited

a) News fetched from the yahoo finance Dataset.

In [259]: `all_news_df[all_news_df['Abbreviation']=='TCEHY']`

Out[259]:

	Title	Content	published_date	Abbreviation	date
0	South Korea's major video gaming companies bet...	A version of this article was first published ...	Wed, 14 Feb 2024 09:30:00 +0000	TCEHY	2024-02-14
1	ByteDance's China Chief Resigns After CEO Seek...	(Bloomberg) -- The head of ByteDance Ltd.'s Ch...	Wed, 07 Feb 2024 08:20:42 +0000	TCEHY	2024-02-07
2	Tencent-backed video game live-streamers Douyu...	Chinese video game live-streaming platform Dou...	Tue, 06 Feb 2024 09:30:00 +0000	TCEHY	2024-02-06
3	China's generative video race heats up	On Monday, Tencent, the Chinese internet giant...	Tue, 06 Feb 2024 07:10:30 +0000	TCEHY	2024-02-06
4	Tencent working on mobile version of hit conso...	China's Tencent Holdings has been working to a...	Tue, 06 Feb 2024 05:22:51 +0000	TCEHY	2024-02-06
5	High-Risk, High-Reward: 7 OTC Stocks That Coul...	I cannot stress enough how risky OTC stocks or...	Mon, 05 Feb 2024 22:16:31 +0000	TCEHY	2024-02-05
6	Tencent takes control of Chinese gaming studio...	Chinese social media and gaming giant Tencent ...	Mon, 05 Feb 2024 09:30:00 +0000	TCEHY	2024-02-05
7	Next-Level Gaming: 3 Stocks to Buy for the Boo...	The eSports gaming stocks have captured the at...	Sun, 04 Feb 2024 22:00:00 +0000	TCEHY	2024-02-04
8	China gaming: Beijing approves Dungeon & Fight...	In a surprise move, China's gaming regulator a...	Fri, 02 Feb 2024 09:30:00 +0000	TCEHY	2024-02-02
9	Tencent axes Square Enix 'Nier' mobile game as...	Tencent halted the development of a highly ant...	Fri, 02 Feb 2024 05:29:52 +0000	TCEHY	2024-02-02
10	Tencent, Nexon Soar After Surprise Approval fo...	(Bloomberg) -- Tencent Holdings Ltd. and Nexon...	Fri, 02 Feb 2024 03:38:05 +0000	TCEHY	2024-02-02
11	Senators speak out against tech CEOs on child ...	Multiple tech CEOs, including Meta's Mark Zuck...	Thu, 01 Feb 2024 17:02:34 +0000	TCEHY	2024-02-01
12	Viral 'Pokemon with guns' game Palworld sparks...	A popular video game developed by a Japanese s...	Thu, 01 Feb 2024 09:30:00 +0000	TCEHY	2024-02-01
13	ByteDance's CEO is mad at his employees for mi...	The company's CEO Liang Rubo said ByteDance wa...	Thu, 01 Feb 2024 09:05:05 +0000	TCEHY	2024-02-01
14	Tencent CEO Pony Ma Shifts Focus to AI as Gami...	Tencent Holding Ltd.'s (OTC:TCEHY) CEO, Pony Ma...	Tue, 30 Jan 2024 13:14:32 +0000	TCEHY	2024-01-30
15	Tencent CEO Pony Ma asks fintech unit to cede ...	Pony Ma Huateng, founder and chief executive o...	Tue, 30 Jan 2024 09:30:00 +0000	TCEHY	2024-01-30

b) News on the Yahoo finance Website

The screenshot shows the Yahoo Finance website interface. The top navigation bar includes links for Finance Home, News, Taxes, Watchlists, My Portfolio, Real Estate, My Screeners, Tech, Market Data, and Industry News. A search bar is prominently displayed. Below the navigation, there are several news articles with accompanying images and headlines. The first article is titled 'South Korea's major video gaming companies bet big on China's continued openness to franchises with proven track record overseas'. The second article is 'ByteDance's China Chief Resigns After CEO Seeks Greater Urgency'. The third article is 'Tencent-backed video game live-streamers Douyu and Huya deny merger rumours as ByteDance deal threatens their status'. To the right of the news articles, there is a section titled 'People Also Watch' which lists several stocks with their last prices and percentage changes. At the bottom right, there is a section titled 'Similar to TCEHY'.

Symbol	Last Price	Change	% Change
JD	23.14	+1.01	+4.56%
BIDU	106.71	+2.90	+2.79%
BABA	73.39	+1.79	+2.50%
PDD	132.01	+2.97	+2.30%
IQVY	3.5000	+0.2300	+7.03%

3) Industrial and Commercial Bank of China

a) News fetched from the yahoo finance Dataset.

```
In [260]: all_news_df[all_news_df['Abbreviation']=='IDCBY']
```

```
Out[260]:
```

	Title	Content	published_date	Abbreviation	date
0	This Little-Known Chinese Billionaire Went Fro...	Jiang Jianqing, a name synonymous with the rem...	Thu, 08 Feb 2024 17:33:19 +0000	IDCBY	2024-02-08
1	Fed, NYDFS fine Chinese bank ICBC \$32.4M	'Regulated institutions must be held accountab...	Mon, 22 Jan 2024 10:57:49 +0000	IDCBY	2024-01-22
2	ICBC Fined \$32 Million by New York's Financial...	Industrial & Commercial Bank of China will pay...	Fri, 19 Jan 2024 19:37:00 +0000	IDCBY	2024-01-19
3	ICBC to pay \$32.4 million to US regulators ove...	The Industrial and Commercial Bank of China Lt...	Fri, 19 Jan 2024 16:12:35 +0000	IDCBY	2024-01-19
4	Trump's Businesses Got Millions From Foreign G...	A report by House Democrats says Donald Trump ...	Thu, 04 Jan 2024 18:26:00 +0000	IDCBY	2024-01-04
5	China's Big Banks Cut Deposit Rates as Growth ...	China's biggest banks are lowering the deposit...	Fri, 22 Dec 2023 04:05:00 +0000	IDCBY	2023-12-22
6	ICBC's Entree Onto Wall Street Looked Like a B...	The China megabank bought its U.S. broker-deal...	Sun, 26 Nov 2023 05:02:00 +0000	IDCBY	2023-11-26
7	ICBC partners wary to resume trading with bank...	Industrial and Commercial Bank of China (ICBC)...	Wed, 22 Nov 2023 20:20:37 +0000	IDCBY	2023-11-22
8	World's Biggest Bank ICBC Still Faces Trader W...	(Bloomberg) -- Industrial & Commercial Bank of...	Wed, 22 Nov 2023 18:40:49 +0000	IDCBY	2023-11-22
9	20 Most Valuable Asian Companies Heading into ...	In this article, we will look into the 20 most...	Mon, 20 Nov 2023 12:09:57 +0000	IDCBY	2023-11-20
10	How a Hack Shook Wall Street's Multitrillion-D...	The recent hack of a Chinese banking giant rei...	Sun, 19 Nov 2023 10:30:00 +0000	IDCBY	2023-11-19
11	Ransomware attack on China's biggest bank may ...	A US unit of the Industrial and Commercial Ban...	Fri, 17 Nov 2023 15:43:48 +0000	IDCBY	2023-11-17
12	Barclays flags Treasuries central clearing cyb...	A key reform proposed by the U.S. Securities a...	Wed, 15 Nov 2023 17:20:03 +0000	IDCBY	2023-11-15
13	ICBC Flies Top Executives to US in Race to Con...	(Bloomberg) -- Within days of a cyberattack at...	Tue, 14 Nov 2023 01:01:04 +0000	IDCBY	2023-11-14
14	UPDATE 2-Gang says ICBC paid ransom over hack ...	China's biggest lender, the Industrial and Com...	Mon, 13 Nov 2023 17:13:38 +0000	IDCBY	2023-11-13

b) News on the Yahoo finance Website

The screenshot displays the Yahoo Finance website interface. At the top, there's a search bar and navigation links. The main content area features several news articles related to the Industrial and Commercial Bank of China (ICBC). The top article is titled 'ICBC to pay \$32.4 million to US regulators over AML lapses, supervisory information disclosure' with a sub-headline 'The Industrial and Commercial Bank of China Ltd and its New York branch will pay \$32.4 million in penalties for the unauthorized use and disclosure of confidential supervisory...'. Below this, there's an advertisement for the 2024 Toyota Tundra. Further down, another article is titled 'ICBC partners wary to resume trading with bank after cyberattack - Bloomberg News', followed by 'World's Biggest Bank ICBC Still Faces Trader Wariness After Cyberattack'. A sidebar on the right, titled 'People Also Watch', lists several financial instruments with their current prices and percentage changes. The bottom of the page shows a Windows taskbar with the date 14-02-2024 and the time 17:49.

4) China Evergrande Group

a) News fetched from the yahoo finance Dataset.

```
In [262]: all_news_df[all_news_df['Abbreviation']=='3333.HK']
```

```
Out[262]:
```

	Title	Content	published_date	Abbreviation	date
0	A 99% Bond Wipeout Hands Hedge Funds a Harsh Lesson on China	(Bloomberg) -- From afar, China Evergrande Gro...	Thu, 08 Feb 2024 21:31:03 +0000	3333.HK	2024-02-08
1	China Evergrande: the people behind the indebted...	Restructuring experts from Alvarez & Marsal wi...	Wed, 07 Feb 2024 04:18:23 +0000	3333.HK	2024-02-07
2	Australia's Golden Goose unruffled as China cr...	SYDNEY (Reuters) -For Australia, China has bec...	Mon, 05 Feb 2024 05:44:53 +0000	3333.HK	2024-02-05
3	China's Real Estate Crash Threatens Commodity ...	The liquidation of Evergrande, a debt-ridden C...	Sun, 04 Feb 2024 18:00:00 +0000	3333.HK	2024-02-04
4	Creditor Battles Are Hobbling Risky Debt. Cred...	(Bloomberg) -- Bond investors are fighting Inc...	Sat, 03 Feb 2024 20:00:00 +0000	3333.HK	2024-02-03
5	Liquidation of China's Evergrande has 'a lot o...	A Hong Kong court on Monday ordered Chinese re...	Sat, 03 Feb 2024 12:00:55 +0000	3333.HK	2024-02-03
6	Hong Kong luxury property owners turn to high...	On a road that winds through Hong Kong's posh ...	Sat, 03 Feb 2024 09:30:00 +0000	3333.HK	2024-02-03
7	Emerging-Market Currencies Tumble After Hot US...	(Bloomberg) -- Emerging-market currencies slum...	Fri, 02 Feb 2024 21:52:51 +0000	3333.HK	2024-02-02

b) News on the Yahoo finance Website

The screenshot shows the Yahoo Finance website interface. At the top, there's a search bar and navigation links for 'Sign in' and 'Mail'. Below the search bar, there's a section for 'Avg. Volume' (23,281,941), '1y Target Est' (0.14), and a 'Relaunch to update' button. The main content area is divided into two columns. The left column features three news articles with images and headlines: 'A 99% Bond Wipeout Hands Hedge Funds a Harsh Lesson on China' (Bloomberg, 6 days ago), 'China Evergrande: the people behind the indebted developer's overhaul' (Reuters, 8 days ago), and 'Australia's Golden Goose unruffled as China crises come and go' (Reuters, 9 days ago). The right column displays a 'People Also Watch' section with a table of stock prices and changes. The table includes columns for Symbol, Last Price, Change, and % Change. The bottom of the page shows a weather widget (2°C, Mostly sunny) and a Windows taskbar with various application icons and the system clock (17:51, 14-02-2024).

Symbol	Last Price	Change	% Change
2007.HK	0.680	+0.020	+3.03%
Country Garden Holdings Company Limited			
1918.HK	1.160	0.000	0.00%
Sunac China Holdings Limited			
3383.HK	0.670	-0.020	-2.90%
Aigle Group Holdings Limited			
2777.HK	0.990	-0.010	-1.00%
Guangzhou R&F Properties Co., Ltd.			
0813.HK	0.430	0.000	0.00%
Shimao Group Holdings Limited			

5) BYD Company Limited

a) News fetched from the yahoo finance Dataset.

In [267]: `merge_data[merge_data['Abbreviation']=='1211.HK']`

Out[267]:

	Title	Content	published_date	Abbreviation	date	Company_Name	titel_Sentiment	Content_Sentiment
156	Tesla Vs. BYD: TSLA, New EV King Struggle Amid...	Tesla plunged on weak earnings and forecasts o...	Tue, 13 Feb 2024 23:18:27 +0000	1211.HK	2024-02-13	BYD Company Limited	-1	1
157	China's BYD plans new electric vehicle plant i...	BYD, known for its cheaper models and a more v...	Tue, 13 Feb 2024 18:06:36 +0000	1211.HK	2024-02-13	BYD Company Limited	1	1
158	CORRECTED-UPDATE 2- China's BYD plans new elect...	China's BYD Co Ltd will set up a new electric ...	Tue, 13 Feb 2024 18:03:43 +0000	1211.HK	2024-02-13	BYD Company Limited	1	1
159	3 Up-and-Coming EV Giants You Can Ride to the ...	There are many reasons for individuals to buy ...	Thu, 08 Feb 2024 11:40:00 +0000	1211.HK	2024-02-08	BYD Company Limited	0	1
160	China Offers Support to Accelerate EV Makers' ...	China is encouraging its electric vehicle make...	Thu, 08 Feb 2024 02:32:00 +0000	1211.HK	2024-02-08	BYD Company Limited	1	-1
161	3 EV Stocks on the Fast Track to Double in 2024	Despite the current slowdown in the electric v...	Wed, 07 Feb 2024 11:00:00 +0000	1211.HK	2024-02-07	BYD Company Limited	1	1
162	High-Risk, High-Reward: 7 OTC Stocks That Coul...	I cannot stress enough how risky OTC stocks or...	Mon, 05 Feb 2024 22:16:31 +0000	1211.HK	2024-02-05	BYD Company Limited	1	-1
163	Buy Alert: 3 Renewable Energy Stocks Sitting i...	Most renewable energy stocks struggled in 2023...	Sat, 03 Feb 2024 16:00:00 +0000	1211.HK	2024-02-03	BYD Company Limited	1	1
164	Elon Musk Thinks This Warren Buffet-Backed Chi...	Elon Musk, CEO of Tesla Inc. (NASDAQ:TSLA), qu...	Thu, 01 Feb 2024 22:30:11 +0000	1211.HK	2024-02-01	BYD Company Limited	0	1

b) News on the Yahoo finance Website

The screenshot shows the Yahoo Finance website interface. At the top, there's a search bar and navigation links for 'Sign in' and 'Mail'. The main content area features a news article titled 'Tesla Vs. BYD: TSLA, New EV King Struggle Amid Weak Earnings, Tough Climate' from Investor's Business Daily. The article text mentions Tesla's performance and forecasts for 2024. Below the article is an advertisement for the 2024 Toyota Tundra. To the right, there's a Visa advertisement for Aeroplan points and a 'People Also Watch' section listing other stocks like Greely Automobile Holdings Limited and Tencent Holdings Limited. The bottom of the page shows a Windows taskbar with various application icons and a weather widget.

Data Preparation

1. Library

- Importing the Library in python for performing different methods on the dataset like importing the dataset, Data preparation, Sentiment Analysis and many other task.

Importing Library

```
In [2]: import pandas as pd
import numpy as np
import yfinance as yf
from yahoo_fin.stock_info import get_data
from yahoo_fin import news as yahoo_news
```

2. Data Preparation – Yahoo Finance

a) Fetching the Dataset of 50 companies:

- Importing the Csv file of companies with their abbreviation.

```
In [53]: # get the Dataset
data=pd.read_csv('Book2.csv')
```

```
In [54]: data.head()
```

```
Out[54]:
```

	Company Name,Abbreviation
0	Alibaba Group Holding Limited,BABA
1	Tencent Holdings Limited,TCEHY
2	China Mobile Communications Corporation,CHL
3	Industrial and Commercial Bank of China,IDCBY
4	China Construction Bank Corporation,CICBY

b) Separating the Columns:

- The Dataset contain the company name and abbreviation in one column so for easy utilization need to create the two different columns like Company name and Abbreivatio.

```

In [60]: # getting company name from the given Dataset
data[['Company_Name', 'Abbreviation']] = data['Company Name,Abbreviation'].str.split(',',n=1, expand=True)

In [61]: # change the column name of the dataset
data.drop(columns=['Company Name,Abbreviation'],inplace=True)

In [62]: # copy Data on the Root dataset
data.head()

```

Out[62]:

	Company_Name	Abbreviation
0	Alibaba Group Holding Limited	BABA
1	Tencent Holdings Limited	TCEHY
2	China Mobile Communications Corporation	CHL
3	Industrial and Commercial Bank of China	IDCBY
4	China Construction Bank Corporation	CICBY

c) Fetching the news of companies using Abbreviation:

- Get the News about the company using the yahoo finance api.
- The Abbreviation is required to get the News about the given company.

The Dataset of Top 50 companies of the China are created

```

In [235]: def get_news2(com_name, number_of_news=30):
            try:

                news_of_company = yahoo_news.get_yf_rss(com_name)
                news_of_company = news_of_company[:number_of_news]
                news_data = [(article['title'], article['summary'], article['published']) for article in news_of_company]
                dataset_news = pd.DataFrame(news_data, columns=['Title', 'Content', 'published_date'])
                dataset_news['Company'] = com_name
                return dataset_news
            except Exception as e:

                return None

```

- Creating the loop to get the news for every company and store in the dataset

```

In [236]: news_dataset = []
            for company_abbreviation in data['Abbreviation']:
                # print(company_abbreviation)
                company_news = get_news2(company_abbreviation)
                if company_news is not None:
                    news_dataset.append(company_news)

            all_news_df = pd.concat(news_dataset)

```

- The output of the dataset after gathering the title and content of the Data.

```
In [237]: all_news_df
```

```
Out[237]:
```

	Title	Content	published_date	Company
0	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	Wed, 14 Feb 2024 18:01:33 +0000	BABA
1	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	Wed, 14 Feb 2024 12:55:23 +0000	BABA
2	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e...	Tue, 13 Feb 2024 16:11:00 +0000	BABA
3	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	Tue, 13 Feb 2024 14:00:10 +0000	BABA
4	13 Best Metaverse Stocks To Buy Right Now	In this article, we discuss 13 best metaverse ...	Mon, 12 Feb 2024 17:24:38 +0000	BABA
...
15	Country Garden to Make CNY3.07 Billion Dispos...	Chinese property giant Country Garden will sel...	Thu, 14 Dec 2023 01:16:00 +0000	2007.HK
16	Country Garden sells stake in Dalian Wanda uni...	HONG KONG (Reuters) -China's embattled Country...	Thu, 14 Dec 2023 00:37:15 +0000	2007.HK
17	UPDATE 1-Country Garden has remitted funds to ...	Embattled Chinese developer Country Garden Hol...	Wed, 13 Dec 2023 12:00:25 +0000	2007.HK
18	Country Garden repays US\$111 million bond in f...	Embattled property developer Country Garden Ho...	Wed, 13 Dec 2023 09:30:00 +0000	2007.HK
19	Trending tickers: Arm Jumia Country Garden...	The latest investor updates on stocks that are...	Thu, 23 Nov 2023 09:59:54 +0000	2007.HK

227 rows x 4 columns

d) Transform the Date column:

- The data set generated having the published date in it in the object format so converting the date column to date time format.

227 rows x 4 columns

```
In [275]: # Convert the 'date_str' column to datetime format
all_news_df['date'] = pd.to_datetime(all_news_df['published_date'], format='%a, %d %b %Y %H:%M:%S %Z').dt.date
```

```
In [276]: all_news_df.drop(columns='published_date',inplace=True)
```

```
In [308]: # Data set after converting the date
all_news_df.head()
```

```
Out[308]:
```

	Title	Content	Abbreviation	date
0	Top Research Reports for Alibaba, General Elec...	Today's Research Daily features new research r...	BABA	2024-02-14
1	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	BABA	2024-02-14
2	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	BABA	2024-02-14
3	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e...	BABA	2024-02-13
4	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	BABA	2024-02-13

e) Merge the Dataset:

- Merging the dataset because the news dataset containing the Abbreviation and for getting the Company name with the dataset merge the dataset with the initial dataset.

```
In [292]: all_news_df.rename(columns={'Company': 'Abbreviation'},inplace=True)
```

```
In [294]: merge_data=pd.merge(all_news_df,data,on='Abbreviation')
```

3. Sentiment Analysis:

1. Importing the Libraries :

- Importing the Libraries for Sentiment Analysis like Nltk, and others.

NLP

```
: import nltk
from nltk.sentiment.vader import SentimentIntensityAnalyzer
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize
from nltk.stem import WordNetLemmatizer
```

2. Text Preprocessing :

- In text preprocessing firstly convert the sentences into Tokens.
- Then Removing the unnecessary words from the content and title.
- Apply the lemmatization to the words to get the real meaning of the word.

```
In [296]: lemma=WordNetLemmatizer()

def text_pre_preocessing(text):

    token=word_tokenize(text)
    token_without_stop=[word for word in token if word.lower() not in stopwords.words('english')]

    #Lemmatization

    lem_token=[lemma.lemmatize(token) for token in token_without_stop]

    return lem_token
```

- Applyin the text preprocessing function to content and title.

```
In [297]: merge_data['Titel_preprosses']=merge_data['Title'].apply(text_pre_preocessing)
```

```
In [298]: merge_data['Content_preprosses']=merge_data['Content'].apply(text_pre_preocessing)
```


In [299]: merge_data

Out[299]:

	Title	Content	Abbreviation	date	Company_Name	Titel_preprocesses	Content_preprocesses
0	Top Research Reports for Alibaba, General Elec...	Today's Research Daily features new research r...	BABA	2024-02-14	Alibaba Group Holding Limited	[Top, Research, Reports, Alibaba, ,, General, ...	[Today, 's, Research, Daily, feature, new, res...
1	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	BABA	2024-02-14	Alibaba Group Holding Limited	[Michael, Burry, 's, Strategic, Exits, New, Po...	[Insight, Latest, 13F, Filing, Reveals, Burry,...
2	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	BABA	2024-02-14	Alibaba Group Holding Limited	[Alibaba, Stock, Little, Celebrate, Lunar, New...	[Lunar, New, Year, mean, Chinese, investor, mo...
3	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e...	BABA	2024-02-13	Alibaba Group Holding Limited	[Alibaba, ', Hurry, ', Spin, Logistics, Unit]	[Amid, current, market, condition, ,, Chinese,...
4	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	BABA	2024-02-13	Alibaba Group Holding Limited	[Alibaba, Group, Holding, Limited, (, BABA,),...	[Recently, ,, Zacks.com, user, paying, close, ...
...
222	Country Garden to Make CNY3.07 Billion Dispos...	Chinese property giant Country Garden will sel...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	[Country, Garden, Make, CNY3.07, Billion, Disp...	[Chinese, property, giant, Country, Garden, se...
223	Country Garden sells stake in Dalian Wanda uni...	HONG KONG (Reuters) - China's embattled Country...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	[Country, Garden, sell, stake, Dalian, Wanda, ...	[HONG, KONG, (, Reuters,), - China, 's, embatt...
224	UPDATE 1-Country Garden has remitted funds to ...	Embattled Chinese developer Country Garden Hol...	2007.HK	2023-12-13	Country Garden Holdings Company Limited	[UPDATE, 1-Country, Garden, remitted, fund, re...	[Embattled, Chinese, developer, Country, Garde...

3. Sentiment Analysis:

- Calculating the sentiment score of the article and on the bases of that mark the article as the positive, negative and neutral.

If the Polarity score is greater than 0 then positive news.

If the Polarity score is equal to 0 then it is neutral news.

If the Polarity score is less than 0 then it is negative news.

227 rows x 8 columns

```
In [300]: # sentiment

from textblob import TextBlob

def Sentiment_Analyze_com(preprocessed_token):

    text=" ".join(preprocessed_token)

    blob=TextBlob(text)

    polarity=blob.sentiment.polarity

    if polarity>0:
        return 1
    elif polarity<0:
        return -1
    else:
        return 0
```

- Apply the Sentiment function to the titel preprocess and content preprocess columns.

```
In [301]: merge_data['titel_Sentiment']=merge_data['Titel_preprocesses'].apply(Sentiment_Analyze_com)
```

```
In [302]: merge_data['Content_Sentiment']=merge_data['Content_preprocesses'].apply(Sentiment_Analyze_com)
```

- Dataset

```
In [303]: merge_data
```

```
Out[303]:
```

	Title	Content	Abbreviation	date	Company_Name	Titel_preprocesses	Content_preprocesses	titel_Sentiment	Content_Sentiment
0	Top Research Reports for Alibaba, General Elec...	Today's Research Daily features new research r...	BABA	2024-02-14	Alibaba Group Holding Limited	[Top, Research, Reports, Alibaba, ,, General, ...	[Today, 's, Research, Daily, feature, new, res...	1	1
1	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	BABA	2024-02-14	Alibaba Group Holding Limited	[Michael, Burry, 's, Strategic, Exits, New, Po...	[Insight, Latest, 13F, Filing, Reveals, Burry,...	1	1
2	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	BABA	2024-02-14	Alibaba Group Holding Limited	[Alibaba, Stock, Little, Celebrate, Lunar, New...	[Lunar, New, Year, mean, Chinese, investor, mo...	-1	1
3	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e...	BABA	2024-02-13	Alibaba Group Holding Limited	[Alibaba, ', Hurry, ', Spin, Logistics, Unit]	[Amid, current, market, condition, ,, Chinese,...	0	0
4	Alibaba Group Holding Limited (BABA) Is a	Recently, Zacks.com users have	BABA	2024-02-13	Alibaba Group Holding Limited	[Alibaba, Group, Holding, Limited, (,	[Recently, ,, Zacks.com, near having close	-1	1

- Drop the titel_preprocessed, content_preprocess because it does not required for the Analysis.

227 ROWS X 9 COLUMNS

```
304]: merge_data.drop(columns=['Titel_preprocesses','Content_preprocesses'],inplace=True)
```

```
In [307]: merge_data
```

```
Out[307]:
```

	Title	Content	Abbreviation	date	Company_Name	titel_Sentiment	Content_Sentiment
0	Top Research Reports for Alibaba, General Elec...	Today's Research Daily features new research r...	BABA	2024-02-14	Alibaba Group Holding Limited	1	1
1	Michael Burry's Strategic Exits and New Positi...	Insight into the Latest 13F Filing Reveals Bur...	BABA	2024-02-14	Alibaba Group Holding Limited	1	1
2	Alibaba Stock Has Little to Celebrate During L...	Lunar New Year means Chinese investors are mos...	BABA	2024-02-14	Alibaba Group Holding Limited	-1	1
3	Alibaba 'Not in a Hurry' to Spin Off Logistics...	Amid current market conditions, the Chinese e...	BABA	2024-02-13	Alibaba Group Holding Limited	0	0
4	Alibaba Group Holding Limited (BABA) Is a Tren...	Recently, Zacks.com users have been paying clo...	BABA	2024-02-13	Alibaba Group Holding Limited	-1	1
...
222	Country Garden to Make CNY3.07 Billion Dispos...	Chinese property giant Country Garden will sel...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	0	-1
223	Country Garden sells stake in Dalian Wanda uni...	HONG KONG (Reuters) -China's embattled Country...	2007.HK	2023-12-14	Country Garden Holdings Company Limited	0	-1
224	UPDATE 1-Country Garden has	Embattled Chinese developer	2007.HK	2023-12-14	Country Garden Holdings	1	-1

Datasets and description:

- **Chinese companies Dataset:**

1. Exporting the Dataset:

```
In [305]: merge_data.to_csv('China_dataset1.csv')
```

2. Dataset:

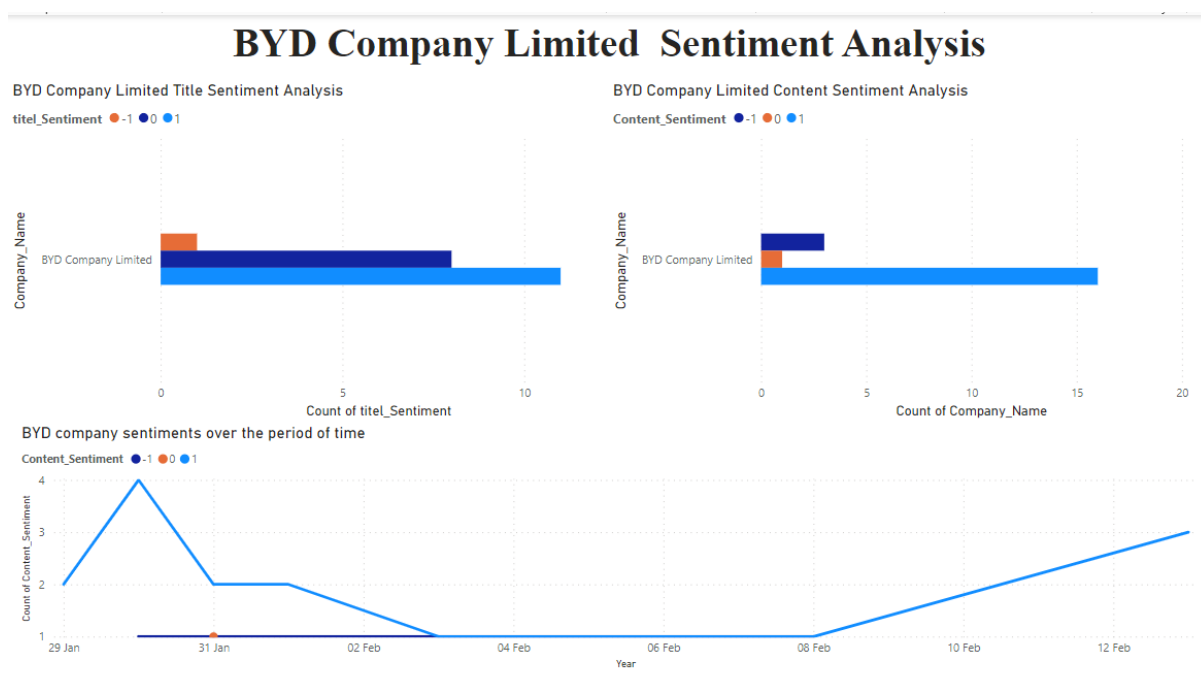
- The Dataset that are created having the 228 rows and 8 columns.

Feature	Datatype	Description
Company_name	Object	This contains the company name of the china.
Abbreivation	Object	This is the unique identification of the Company.
Titel	Object	The titel of the news of the companies.
Content	Object	Content column having the whole news article about the company
Titel_sentiment	Object	Sentiment of the titel.
Content_Sentiment	Object	Sentiment of the whole article.
Date	Date/time	This field represent rate of user exit from page without triggering any action on that page

Data Analysis and Visualization:

1. Pattern-1 (Positive sentiment):

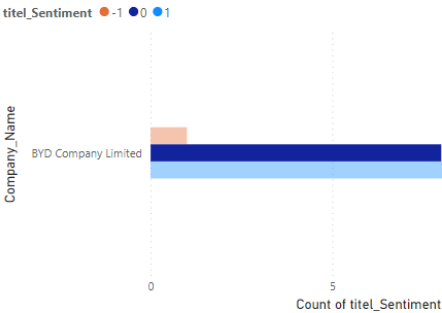
- The BYD Company Limited are very well known company from China, shows positive sentiment in both the Title and content analysis.
- The BYD Company Title Analysis shows the sentiment of the title . In which the positive sentiment is around 12 out of 20, then the neutral sentiment is around 7 and 1 neagtive sentiment.
- The Sentiment analysis of the Content for the BYD company gives sightly different result in which only 2 are neutral news for the BYD company and only one negative the rest are positive news for this company.
- The BYD company shows the positive sentiment over the period of time because the most of the news are positive for this company.



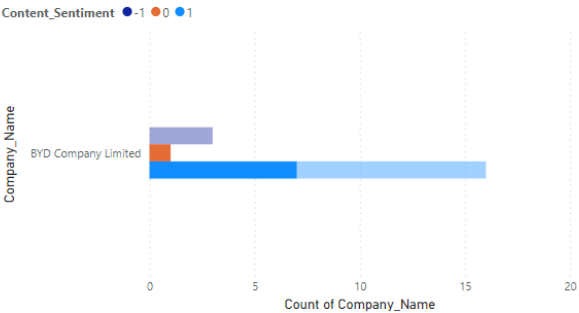
- From the title of the news it is hard to know about that the news are positive or negative that's why the neutral news are more in title, which eventually converted into positive news.

BYD Company Limited Sentiment Analysis

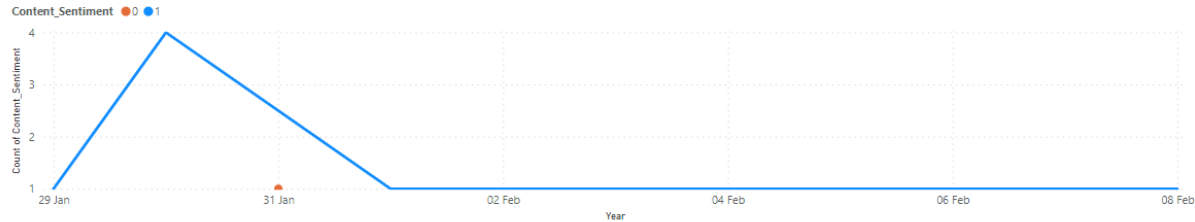
BYD Company Limited Title Sentiment Analysis



BYD Company Limited Content Sentiment Analysis



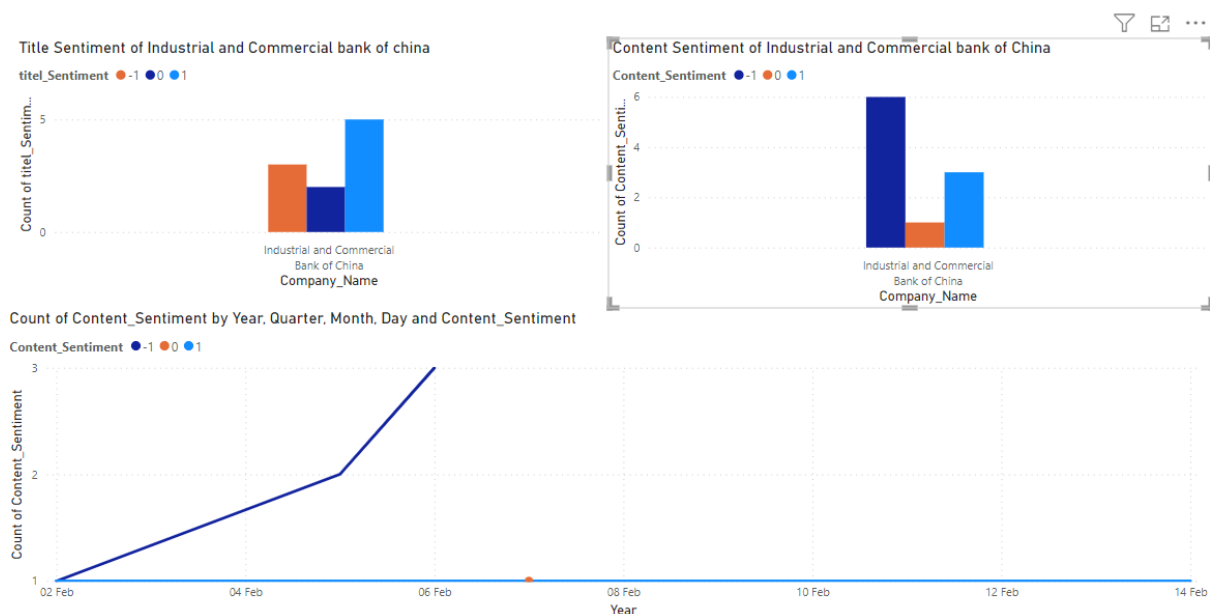
BYD company sentiments over the period of time



2. Pattern-2 (Negative Sentiment):

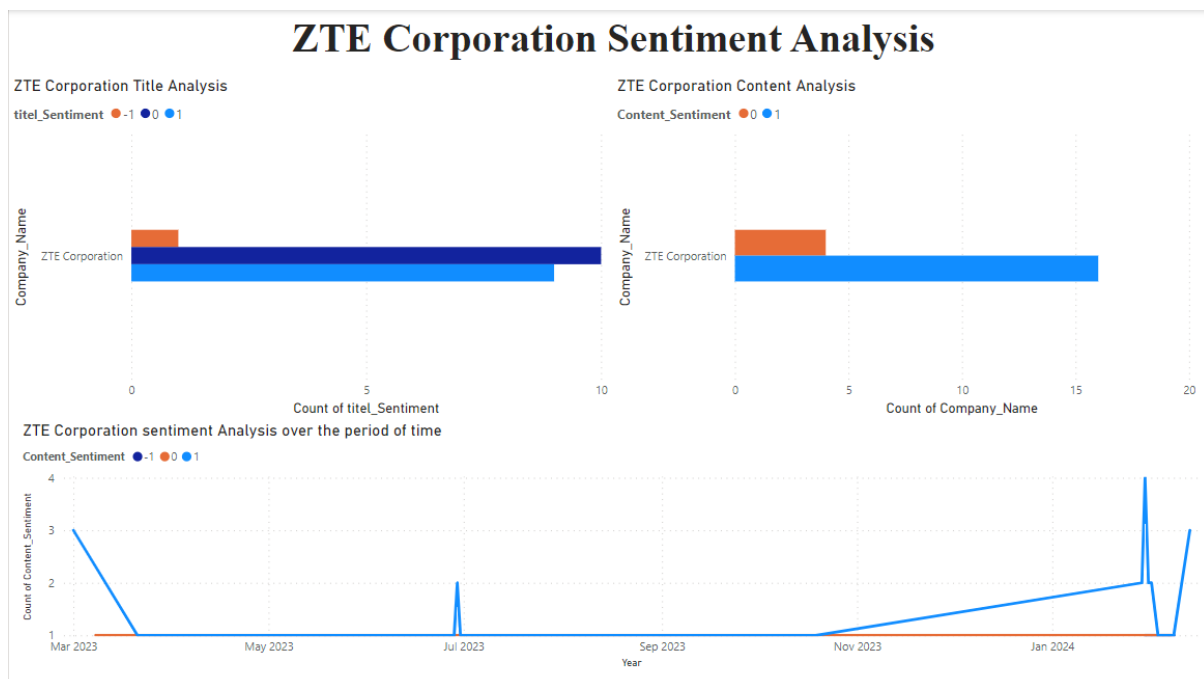
- This Dashboard shows the trend of the Industrial and Commercial Bank of China.
- The Title Sentiment of the company shows the news are positive for the company, but the news are negative for the given company as clearly seen from the Content Sentiment.
- The Negative Sentiment for the Industrial and Commercial bank of China is highest around 6 news out of 10 are negative for the given company.
- The Line chart gives the content sentiment of the Company over the period of time in which we can see that between the 2nd Feb to 6 Feb the negative news of the company grown and the positive news are constant over the period of time.

Industrial and Commercial Bank of China Sentiment Analysis



3. Pattern-3 (Positive Sentiment):

- ZTE Corporation shows the positive Sentiment in the news.
- ZTE Corporation Title Analysis has the maximum number of the news are neutral and then the positive.
- The Content Analysis of the ZTE Corporation has the different Scenario in this there is no neutral news for the ZTE Corporation most of the news are Positive and very small amount of the news are negative.
- Therefore, ZTE Corporation has the Positive Sentiment news.
- The line graph shows the sentiment of the company over the period of the time.

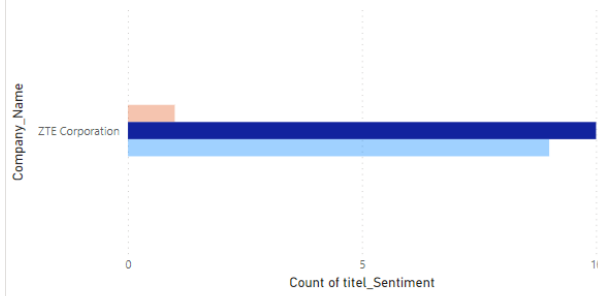


- Most of the neural New from the title are converted into the Positive news.

ZTE Corporation Sentiment Analysis

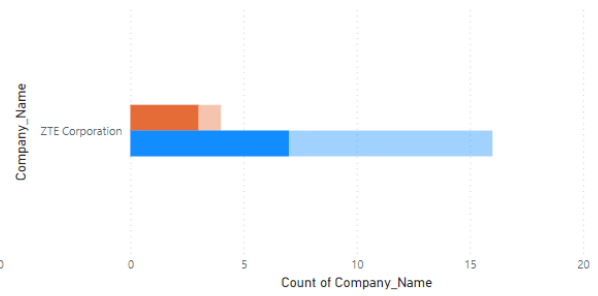
ZTE Corporation Title Analysis

titel_Sentiment ● -1 ● 0 ● 1



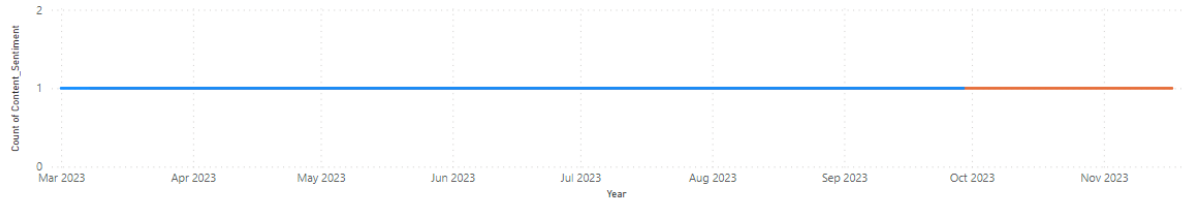
ZTE Corporation Content Analysis

Content_Sentiment ● 0 ● 1



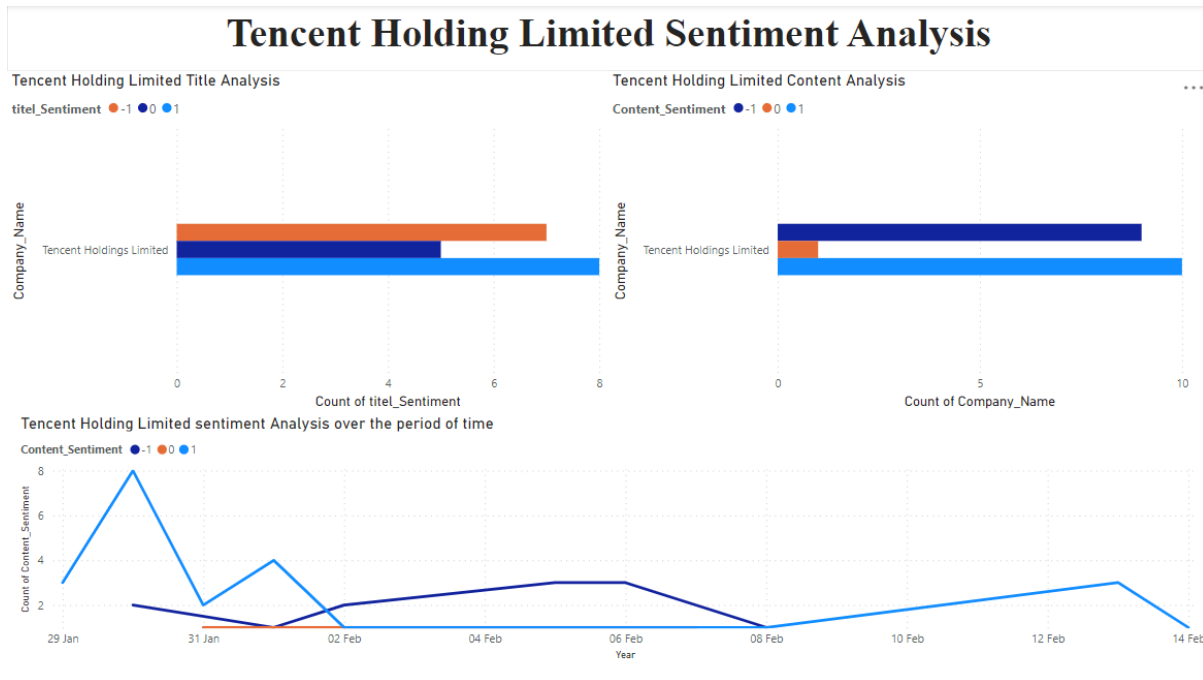
ZTE Corporation sentiment Analysis over the period of time

Content_Sentiment ● 0 ● 1



4. Pattern-4 (Neutral Sentiment):

- The Tencent Company having the neutral news the number of positive news are almost equal to the number of the negative news.
- The Tencent Company have the positive news over the period of the time then
- Afterwards the constant in the given positive news are there.



5. Pattern-5 (Companies with no news) :

- Many Companies from the China have no news at the yahoo news.
- There are total 33 Companies out of the 50 companies of the China have no news at the foreign platform.
- So, out of fifty Top companies we have news about the 17 companies and the rest are unknown in the foreign market all though they are very huge in China.

226 rows × 7 columns

```
In [37]: remaining_company_names.count()
```

```
Out[37]: Company_Name    33  
         Abbreviation    33  
         dtype: int64
```

```
In [36]: remaining_company_names = data[~data['Company_Name'].isin(merge_data['Company_Name'])]  
         remaining_company_names
```

Out[36]:

	Company_Name	Abbreviation
2	China Mobile Communications Corporation	CHL
5	Ping An Insurance (Group) Company of China	Ltd.,PNGAY
6	Huawei Technologies Co.	Ltd.,002502.SZ
7	JD.com	Inc.,JD
8	China National Petroleum Corporation	SNP
9	Sinopec Group	SHI
10	China State Construction Engineering Corporation	601668.SS
11	China Life Insurance Company Limited	LFC
12	China Merchants Bank Co.	Ltd.,600036.SS
14	China Resources	00291.HK
17	Wuliangye Yibin Co.	Ltd.,000858.SZ
19	China Pacific Insurance (Group) Co.	Ltd.,601601.SS
20	China Telecom Corporation Limited	CHA
23	Baidu	Inc.,BIDU
24	China Yangtze Power Co.	Ltd.,600900.SS

Experience Reflection:

- Programming and analytical abilities improved significantly when sentiment analysis was applied to news articles.
- Given the importance of these two abilities separately in the business, mastering them both at once would set you apart from the competitors.
- But things would be much sharper with better code style and a more creative approach to dashboard management.
- A further area for development would be to include more columns from the data that was retrieved using the Yahoo Finance module to provide more comprehensive and understandable information about the Israeli firms.

References:

Pandas Module:-

<https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.filter.html>

NLTK:- <https://www.nltk.org/>

Yahoo finance:- <https://ca.finance.yahoo.com/>