News Headlines Sentiment

Use the news api to pull the latest news articles for bitcoin and ethereum and create a DataFrame of sentiment scores for each coin.

Use descriptive statistics to answer the following questions:

1. Which coin had the highest mean positive score?
2. Which coin had the highest negative score?
3. Which coin had the highest positive score?

```python
[1]: # Initial imports
import os
import pandas as pd
from dotenv import load_dotenv
from nltk.sentiment.vader import SentimentIntensityAnalyzer
analyzer = SentimentIntensityAnalyzer()

%matplotlib inline
```

```python
[3]: # Read your api key environment variable
# YOUR CODE HERE!
```

```python
[4]: # Create a newsapi client
# YOUR CODE HERE!
```

```python
[6]: # Fetch the Bitcoin news articles
# YOUR CODE HERE!
```

```python
[7]: # Fetch the Ethereum news articles
# YOUR CODE HERE!
```

```python
[8]: # Create the Bitcoin sentiment scores DataFrame
# YOUR CODE HERE!
```

[8]:

	Compound	Negative	Neutral	Positive	text
0	0.0516	0.900	0.036	0.064	Cryptocurrency exchange Binance has resumed tr...
1	0.3818	0.943	0.000	0.057	Bitcoin is now trading at around $8,130, up a ...
2	-0.2263	0.888	0.065	0.047	Binance has vowed to raise the quality of its ...
3	0.3612	0.937	0.000	0.063	A new payment network called Flexa is launchin...
4	-0.6486	0.897	0.103	0.000	If you thought that the theft of 7,000 bitcoin...

```python
[9]: # Create the ethereum sentiment scores DataFrame
# YOUR CODE HERE!
```

[9]:

	Compound	Negative	Neutral	Positive	text
0	-0.3919	0.801	0.140	0.059	President Trump tweeted insults at Twitter aga...
1	0.1779	0.961	0.000	0.039	After announcing that they were launching a ma...
2	0.0000	1.000	0.000	0.000	Captain Kirk and neo-Dadaists. Repugnant marke...
3	-0.8020	0.717	0.217	0.066	So long as cryptocurrency exists, so too will ...
4	-0.6486	0.897	0.103	0.000	If you thought that the theft of 7,000 bitcoin...

```python
[10]: # Describe the Bitcoin Sentiment
# YOUR CODE HERE!
```

[10]:

	Compound	Negative	Neutral	Positive
count	17.000000	17.000000	17.000000	17.000000
mean	0.024835	0.882118	0.049471	0.068412
std	0.523138	0.082548	0.054700	0.087631
min	-0.822500	0.691000	0.000000	0.000000
25%	-0.318200	0.849000	0.000000	0.000000
50%	0.000000	0.897000	0.051000	0.047000
75%	0.381800	0.943000	0.065000	0.064000
max	0.921700	1.000000	0.218000	0.267000

```python
[11]: # Describe the Ethereum Sentiment
# YOUR CODE HERE!
```

[11]:

	Compound	Negative	Neutral	Positive
count	20.000000	20.000000	20.000000	20.000000
mean	0.076370	0.873400	0.057900	0.068750
std	0.518197	0.092956	0.080454	0.056343
min	-0.918200	0.698000	0.000000	0.000000
25%	-0.267700	0.815250	0.000000	0.019500
50%	0.253500	0.877500	0.000000	0.063500
75%	0.426225	0.940250	0.112250	0.107500
max	0.769500	1.000000	0.240000	0.180000

Questions:

Q: Which coin had the highest mean positive score?

A:

Q: Which coin had the highest compound score?

A:

Q: Which coin had the highest positive score?

A:

Tokenizer

In this section, you will use NLTK and Python to tokenize the text for each coin. Be sure to:

1. Lowercase each word
2. Remove Punctuation
3. Remove Stopwords

```python
[12]: from nltk.tokenize import word_tokenize, sent_tokenize
from nltk.corpus import stopwords
from nltk.stem import WordNetLemmatizer, PorterStemmer
from string import punctuation
import re
```

```python
[13]: # Expand the default stopwords list if necessary
# YOUR CODE HERE!
```

```python
[14]: # Complete the tokenizer function
def tokenizer(text):
    """Tokenizes text."""
```

```python
    # Create a list of the words

    # Convert the words to lowercase

    # Remove the punctuation

    # Remove the stop words

    # Lemmatize Words into root words

    return tokens
```

```python
[15]: # Create a new tokens column for bitcoin
      # YOUR CODE HERE!
```

[15]:

	Compound	Negative	Neutral	Positive	text	tokens
0	0.0516	0.900	0.036	0.064	Cryptocurrency exchange Binance has resumed tr...	[Cryptocurrency, exchange, Binance, resumed, t...
1	0.3818	0.943	0.000	0.057	Bitcoin is now trading at around $8,130, up a ...	[Bitcoin, trading, around, 8,130, whopping, 60...
2	-0.2263	0.888	0.065	0.047	Binance has vowed to raise the quality of its ...	[Binance, vowed, raise, quality, security, aft...
3	0.3612	0.937	0.000	0.063	A new payment network called Flexa is launchin...	[new, payment, network, called, Flexa, launchi...
4	-0.6486	0.897	0.103	0.000	If you thought that the theft of 7,000 bitcoin...	[thought, theft, 7,000, bitcoins, one, world, ...

```python
[16]: # Create a new tokens column for ethereum
      # YOUR CODE HERE!
```

[16]:

	Compound	Negative	Neutral	Positive	text	tokens
0	-0.3919	0.801	0.140	0.059	President Trump tweeted insults at Twitter aga...	[President, Trump, tweeted, insult, Twitter, m...
1	0.1779	0.961	0.000	0.039	After announcing that they were launching a ma...	[announcing, launching, managed, blockchain, s...
2	0.0000	1.000	0.000	0.000	Captain Kirk and neo-Dadaists. Repugnant marke...	[Captain, Kirk, neo-Dadaists, Repugnant, marke...
3	-0.8020	0.717	0.217	0.066	So long as cryptocurrency exists, so too will ...	[long, cryptocurrency, exists, extraordinaryle...
4	-0.6486	0.897	0.103	0.000	If you thought that the theft of 7,000 bitcoin...	[thought, theft, 7,000, bitcoins, one, world, ...

NGrams and Frequency Analysis

In this section you will look at the ngrams and word frequency for each coin.

1. Use NLTK to produce the n-grams for N = 2.
2. List the top 10 words for each coin.

```python
[17]: from collections import Counter
      from nltk import ngrams
```

```python
[18]: # Generate the Bitcoin N-grams where N=2
      # YOUR CODE HERE!
```

```python
[18]: [(('40', 'million'), 3),
       (('Cryptocurrency', 'exchange'), 2),
       (('exchange', 'Binance'), 2),
       (('crypto', 'asset'), 2),
       (('world', "'''"), 2),
       (('crypto', 'exchange'), 2),
       (('7,000', 'bitcoins'), 2),
       (('one', 'world'), 2),
       (('price', 'Bitcoin'), 2),
       (('Wall', 'Street'), 2),
       (('Street', 'Market'), 2),
       (('last', 'week'), 2),
       (('char', 'Cryptocurrency'), 2),
       (('Binance', 'resumed'), 1),
       (('resumed', 'trading'), 1),
       (('trading', 'activity'), 1),
       (('activity', 'Users'), 1),
       (('Users', 'cancel'), 1),
       (('cancel', 'open'), 1),
       (('open', 'order'), 1)]
```

```python
[19]: # Generate the Ethereum N-grams where N=2
      # YOUR CODE HERE!
```

```python
[19]: [(('private', 'key'), 5),
       (('Ethereum', 'ETH'), 3),
       (('blockchain', 'bandit'), 2),
       (('last', 'year'), 2),
       (('weak', 'private'), 2),
       (('Elon', 'Musk'), 2),
       (('worth', 'Ethereum'), 2),
       (('JP', 'Morgan'), 2),
       (('President', 'Trump'), 1),
       (('Trump', 'tweeted'), 1),
       (('tweeted', 'insult'), 1),
       (('insult', 'Twitter'), 1),
       (('Twitter', 'morning'), 1),
       (('morning', 'time'), 1),
       (('time', 'Jack'), 1),
       (('Jack', 'took'), 1),
       (('took', 'conversation'), 1),
       (('conversation', 'platform'), 1),
       (('platform', 'White'), 1),
       (('White', 'House'), 1)]
```

```python
[20]: # Use the token_count function to generate the top 10 words from each coin
      def token_count(tokens, N=10):
          """Returns the top N tokens from the frequency count"""
          return Counter(tokens).most_common(N)
```

```python
[21]: # Get the top 10 words for Bitcoin
      # YOUR CODE HERE!
```

```python
[21]: [('char', 16),
       ('Bitcoin', 8),
       ("'''", 8),
       ('price', 6),
       ('hacker', 6),
       ('exchange', 5),
       ('Binance', 5),
       ('crypto', 4),
       ('cryptocurrency', 4),
       ('million', 4)]
```

```python
[22]: # Get the top 10 words for Ethereum
      # YOUR CODE HERE!
```

```python
[22]: [('char', 19),
       ('Ethereum', 9),
       ('blockchain', 8),
       ('key', 7),
       ('private', 5),
       ('world', 5),
       ('time', 4),
       ('weak', 4),
       ('million', 4),
       ('transaction', 4)]
```

Word Clouds

In this section, you will generate word clouds for each coin to summarize the news for each coin

```python
[23]: from wordcloud import WordCloud
      import matplotlib.pyplot as plt
      plt.style.use('seaborn-whitegrid')
      import matplotlib as mpl
      mpl.rcParams['figure.figsize'] = [20.0, 10.0]
```

```python
[25]: # Generate the Bitcoin word cloud
      # YOUR CODE HERE!
```

Bitcoin Word Cloud

Bitcoin Word Cloud

```
[26]: # Generate the Ethereum word cloud
      # YOUR CODE HERE!
```

Ethereum Word Cloud

Named Entity Recognition

In this section, you will build a named entity recognition model for both coins and visualize the tags using SpaCy.

```
[27]: import spacy
      from spacy import displacy
```

```
[28]: # Optional — download a language model for SpaCy
      # !python -m spacy download en_core_web_sm
```

```
[29]: # Load the spaCy model
      nlp = spacy.load('en_core_web_sm')
```

Bitcoin NER

```
[30]: # Concatenate all of the bitcoin text together
      # YOUR CODE HERE!
```

```
[30]: 'Cryptocurrency exchange Binance has resumed trading activity. Users can now cancel open orders, deposit crypto assets into their Binance account, and of course buy and sell cryptocurrencies. You cant withdraw crypto assets t
o an external wallet just yet, but … [+1191 chars]Bitcoin is now trading at around $8,130, up a whopping 60.84 percent over the past month, with the price surging $3,086.14 over the period.\r\nThe cryptocurrency's meteoric ri
se is reminiscent of its rocketing growth in the latter half of 2017, when prices reac… [+4311 chars]Binance has vowed to raise the quality of its security in the aftermath of a hack that saw thieves make off with over $40 mi
llion in Bitcoin from the exchange.\r\nThe company — which is widely believed to operate the world's largest crypto exchange based on tra… [+2269 chars]A new payment network called Flexa is launching today that'll let you spe
nd cryptocurrencies in physical stores. The technology currently supports bitcoin, ether, bitcoin cash, and the gemini dollar, and it'll work at retailers including GameStop, Nordstrom, … [+1743 chars]If you thought that the
theft of 7,000 bitcoins from one of the world\'s biggest crypto exchanges would stop Bitcoin\'s price in its tracks, you were wrong.\xa0\r\nOn Thursday, the price of Bitcoin went above $6,000 for the first time since November
last year. At th… [+1729 chars]Quadric.io, a startup founded by some of the folks behind the once-secretive bitcoin mining operation 21E6,"\xa0has raised $15 million in a Series A round that will fund the development of a sup
ercomputer designed for autonomous systems.\xa0\xa0\r\nThe round was led by … [+3424 chars]A Europol-led police operation has arrested three people who allegedly ran the Wall Street Market, supposedly the world's second-large
st "dark web" marketplace. Authorities also seized the site's servers and more than €550,000 (around $615,000) in cash, plus … [+1700 chars]I spent much of last week at blockchain conferences, and I'm about ready to never hea
r the word again. This despite the fact I've been supporting decentralized software, as a counterweight or at least alternative to the growing power of governments and megaco… [+4821 chars]On May 7, hackers infected about 10,
000 of Baltimore city governments computers with an aggressive form of ransomware called RobbinHood, and insisted the city pay 13 bitcoin (then $76,280, today $102,310) to cut the computers loose. The hackers claimed the pr…
[+2669 chars]Cryptocurrency exchange Binance, which is recovering from last week\'s security incident which allowed hackers to steal 7,000 bitcoins (roughly $40 million), said on Monday it has strengthened its security and pr
omised it will allow deposits and withdrawals on… [+1455 chars]Cryptocurrency trading hub Binance, one of the worlds largest, has confirmed it lost about 7,000 Bitcoins (around $40 million) to hackers after its so-called hot
wallet, i.e. one connected to the internet and used to process transactions, was breached, Bloomb… [+3047 chars]The wildly fluctuating prices of cryptocurrencies are a feature not a bug, where speculators are concerned. Thats
always made the proposition of the alleged stablecoin Tether an odd one. According to New Yorks attorney general, the entire operation may have b… [+3026 chars]Last month, we found out that hackers took down a county governme
nt in California. Around the same time, a city in Maine lost control of all its data. These followed New York states capital, Albany, admitting that hackers had crippled the citys technology ope… [+4455 chars]"Card readers? W
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edicted the end of the bear market. But, theyre also warning the recent Tether drama could turn Bitcoin bearish again over the short term.\r\nIf thats true, Bitcoin could soon mir… [+4703 chars]The major darknet marketplace k
nown as the Wall Street Market have been seized and its alleged operators arrested in a joint operation between European and U.S. authorities. Millions in cash, cryptocurrency, and other assets were collected, and the markets
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ocks, real estate and precious metals. It has seen d… [+1721 chars]'
```

```
[31]: # Run the NER processor on all of the text
      # YOUR CODE HERE!

      # Add a title to the document
      # YOUR CODE HERE!
```

```
[32]: # Render the visualization
      # YOUR CODE HERE!
```

Bitcoin NER

Cryptocurrency exchange Binance `PERSON` has resumed trading activity. Users can now cancel open orders, deposit crypto assets into their Binance `GPE` account, and of course buy and sell cryptocurrencies. You cant withdraw crypto assets to an external wallet just yet, but … [+1191 chars]Bitcoin is now trading at around $8,130 `MONEY` , up a whopping 60.84 percent `PERCENT` over the past month `DATE` , with the price surging $ 3,086.14 `MONEY` over the period.

The cryptocurrency's meteoric rise is reminiscent of its rocketing growth in the latter half of 2017 `DATE` , when prices reac… [+4311 chars]Binance has vowed to raise the quality of its security in the aftermath of a hack that saw thieves make off with over $40 million `MONEY` in Bitcoin `GPE` from the exchange.

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-- Peter da Silva `PERSON` (at the National Academy of Sciencies `ORG` , 1965 `DATE` , in a

particularly vivid fantasy)The price of Bitcoin BTC `ORG` has bottomed or so say the cryptocurrency analysts who predicted the end of the bear market. But, theyre also warning the recent Tether `ORG` drama could turn Bitcoin `GPE` bearish again over the short term.

If thats true, Bitcoin `GPE` could soon mir… [+4703 chars]The major darknet marketplace known as the Wall Street Market `FAC` have been seized and its alleged operators arrested in a joint operation between European `NORP` and U.S. `GPE` authorities. Millions `CARDINAL` in cash, cryptocurrency, and other assets were collected, and the markets sh… [+7334 chars]In its decade-long history, the value of the pioneering cryptocurrency has actually followed a pretty reliable trajectory. That is to say, over the full term Bitcoin `GPE` 's value has only grown, much like many stocks, real estate and precious metals. It has seen d… [+1721 chars]

```
[33]: # List all Entities
      # YOUR CODE HERE!

      Binance PERSON
      Binance GPE
      around $8,130 MONEY
      60.84 percent PERCENT
      the past month DATE
      3,086.14 MONEY
      the latter half of 2017 DATE
      $40 million MONEY
      Bitcoin GPE
      Flexa ORG
      today DATE
      GameStop ORG
      Nordstrom NORP
      7,000 CARDINAL
      Bitcoin GPE
      Thursday DATE
      Bitcoin GPE
      6,000 MONEY
      first ORDINAL
      November last year DATE
      $15 million MONEY
      Europol PERSON
      three CARDINAL
      second ORDINAL
      more than €550,000 MONEY
      around $615,000 MONEY
      last week DATE
      'm PERSON
      May 7 DATE
      about 10,000 CARDINAL
      Baltimore GPE
      RobbinHood ORG
      13 CARDINAL
      76,280 MONEY
      today DATE
      102,310 MONEY
      Binance PERSON
      last week's DATE
      7,000 CARDINAL
      roughly $40 million MONEY
      Monday DATE
      Binance PERSON
      one CARDINAL
      about 7,000 CARDINAL
      around $40 million MONEY
      Bloomb PERSON
      Tether PERSON
      New Yorks GPE
      month DATE
      California GPE
      Maine GPE
      New York GPE
      Albany GPE
      Peter da Silva PERSON
      the National Academy of Sciencies ORG
      1965 DATE
      Bitcoin BTC ORG
      Tether ORG
      Bitcoin GPE
      Bitcoin GPE
      the Wall Street Market FAC
      European NORP
      U.S. GPE
      Millions CARDINAL
      Bitcoin GPE
```

Ethereum NER

```
[34]: # Concatenate all of the bitcoin text together
      # YOUR CODE HERE!
```

```
[34]: 'President Trump tweeted insults at Twitter again this morning, but this time Jack took the conversation off platform to the White House. In other news, a controversial Census question creates some strange bedfellows, and a "blockchain bandit" is pilfering mil… [+1705 chars]After announcing that they were launching a managed blockchain service late last year, Amazon Web Services is now opening that service up for general availability.\r\nIt was only about five months ago that AWS chief executive Andy Jassy announced that the compa… [+1220 chars]Captain Kirk and neo-Dadaists. Repugnant markets and legendary cryptographers. "Digital couture" auctioned by CryptoKitties developers. Distributed autonomous art organizations. A keynote speech looking back from 2047 at the near-apocalypse of 2026, from whic… [+5265 chars]So long as cryptocurrency exists, so too will the extraordinarylengths to w hich thieves will go to try to steal it. Unfortunately, that also includes preying on weak private keys, a method that has evidently made one crypto bandit filthy rich with millions in… [+2703 chars]If you thought that the th eft of 7,000 bitcoins from one of the world\'s biggest crypto exchanges would stop Bitcoin\'s price in its tracks, you were wrong.\xa0\r\n0n Thursday, the price of Bitcoin went above $6,000 for the first time since November l ast year. At th… [+1729 chars]A) it\'s a commodity, not a stock\r\nB) nodes don\'t necessarily mean wallets with Ether in them\r\nC) the venn diagram of the whales and unpatched nodes is probably pretty emptyEthereums creator s wanted to create a platform that would allow users all over the world to write decentralized applications, and use the Ethereum ETH blockchain as what it calls a world computer.\r\nEthereum made smart contracts a common par t of the blockchain… [+6602 chars]Elon Musk has been trolling the Ethereum ETH cryptocurrency and its co-founder Vitalik Buterin on Twitter.\r\nThe Tesla founder simply tweeted the word Ethereum early this morning, but shortl y later took it back (hehe).\r\njk\r\n Elon Musk (@elonmusk) April 30, 201… [+1439 chars]Have you been itching to make your first cryptocurrency investment, but youre too afraid to get in on the hype at the wrong time? eToros got your back. The social trading platform is giving away free Ethereum\xa0to anyone who opens an account in\xa0its standalone w… [+1149 chars]With the SEC recently releasing its long-awaited guidance on Crypto token issuers, it's becoming clear that the crypto world is edging closer to the traditional financial world. New players are joining the sector who hail from traditional finance and trading … [+4368 chars]Samsung is reportedly looking to d evelop its own proprietary blockchain network as well as its own token some time in the future. \r\nAccording to an exclusive CoinDesk Korea report, which cited a person familiar with Samsungs internal situation, the South Ko re… [+2496 chars]Theres a blockchain bandit on the loose and theyve already thieved over $6.1 million worth of Ethereum.\r\nAccording to a report published by security consulting firm Independent Security Evaluators (ISE), an unknown entity has been bypassing weak private keys … [+2797 chars]Ethereum ETH whales account for just 7 percent of transaction activity in the market but they control a third of the cryptocurrencys entire circulating suppl y.\r\nThats according to a new study by Chainanalysis which found that although these whales dont have a… [+3193 chars]Cisco CVE-2019-1804 Some switches in Cisco's 9000 series are susceptible to a remote vulnerability. It's a bit odd to call it a vulnerability, actually, because the software is operating as intended. Cisco shipped out these switches with the same private key … [+5280 chars]Abstract:\r\nBlockchains are public ledgers of transaction s verified through the use of public and private keys to sign and prove ownership of transaction data. Popular blockchains have hundreds of millions of transactions which include some of the most popular… [+24770 chars]The op en source project, called Ion, deals with the underlying mechanics of how networks talk to each other. For example, if you log onto Airbnb using Facebook, a protocol deals with the software that sends the personal information from your social profile to… [+877 chars]Opera will soon be adding native\xa0support for the TRON blockchain in its cryptocurrency-focused browser.\r\nAmong other things, the new integration will make it possible to natively use TRON-powered dapps and tokens within the browser. Opera will also add suppor… [+2177 chars]Someone is stealing millions of dollars worth of Ethereum by guessing users\' private keys. Normally this should be impossible, bu t lots of keys seem to be very weak. Researchers are unsure how those weak keys are being generated and used.\r\nTheir paper is here… [+147 chars]JP Morgan and Microsoft have formed a strategic partnership to promote the adop tion of enterprise blockchain, reports Jane Connolly.\r\nDeveloped by JP Morgan, Quorum \xa0an enterprise-variant of the Ethereum blockchain \xa0will be the first distributed ledger platfo… [+1232 chars]If you were on the int ernet in the late 1990s, you might remember companies like AllAdvantage that promised to pay you to surf the web. You could install a program that tracked your browsing and showed you targeted ads at the top of the screen; th en AllAdvant… [+5038 chars]'
```

```
[35]: # Run the NER processor on all of the text
      # YOUR CODE HERE!

      # Add a title to the document
      # YOUR CODE HERE!
```

```
[36]: # Render the visualization
      # YOUR CODE HERE!
```

Ethereum NER

President Trump `PERSON` tweeted insults at Twitter `GPE` again this morning `TIME` , but this time Jack `PERSON` took the conversation off platform to the White House `ORG` . In other news, a controversial Census question creates some strange bedfellows, and a "blockchain bandit" is pilfering mil… [+1705 chars]After announcing that they were launching a managed blockchain service late last year `DATE` , Amazon Web Services `ORG` is now opening that service up for general availability.

It was only about five months ago `DATE` that AWS chief executive Andy Jassy `PERSON` announced that the compa… [+1220 chars]Captain Kirk `PERSON` and neo-Dadaists `NORP` . Repugnant markets and legendary cryptographers. " Digital `ORG` couture" auctioned by CryptoKitties `ORG` developers. Distributed autonomous art organizations. A keynote speech looking back from 2047 `DATE` at the near-apocalypse of 2026 `DATE` , from whic… [+5265 chars]So long as cryptocurrency exists, so too will the extraordinarylengths to which thieves will go to try to steal it. Unfortunately, that also includes preying on weak private keys, a method that has evidently made one `CARDINAL` crypto bandit filthy rich with millions `CARDINAL` in… [+2703 chars]If you thought that the theft of 7,000 `CARDINAL` bitcoins from one of the world's biggest crypto exchanges would stop Bitcoin `GPE` 's price in its tracks, you were wrong.

On Thursday `DATE` , the price of Bitcoin `GPE` went above $ 6,000 `MONEY` for the first `ORDINAL` time since November last year `DATE` . At th… [+1729 chars]A) it's a commodity, not a stock

B) nodes don't necessarily mean wallets with Ether `PERSON` in them

C) the venn diagram of the whales and unpatched nodes is probably pretty emptyEthereums creators wanted to create a platform that would allow users all over the world to write decentralized applications, and use the Ethereum ETH `ORG` blockchain as what it calls a world computer.

Ethereum made smart contracts a common part of the blockchain… [+6602 chars]Elon Musk has been trolling the Ethereum ETH `ORG` cryptocurrency and its co-founder Vitalik Buterin `PERSON` on Twitter `GPE` .

The Tesla founder simply tweeted the word Ethereum `GPE` early this morning `TIME` , but shortly later took it back (hehe).

jk

Elon Musk (@elonmusk) April 30 `DATE` , 201… `CARDINAL` [+1439 chars]Have `PERSON` you been itching to make your first `ORDINAL` cryptocurrency investment, but youre too afraid to get in on the hype at the wrong time? eToros got your back. The social

Elon Musk (@elonmusk) April 30 `DATE` , 201 `CARDINAL` ... [+1455 chars]Have `PERSON` you been itching to make your first `ORDINAL` cryptocurrency investment, but youre too afraid to get in on the hype at the wrong time? eToros got your back. The social trading platform is giving away free Ethereum to anyone who opens an account in its standalone w... [+1149 chars]With the SEC `ORG` recently releasing its long-awaited guidance on Crypto token issuers, it's becoming clear that the crypto world is edging closer to the traditional financial world. New players are joining the sector who hail from traditional finance and trading ... [+4368 chars]Samsung is reportedly looking to develop its own proprietary blockchain network as well as its own token some time in the future.

According to an exclusive CoinDesk Korea `GPE` report, which cited a person familiar with Samsungs internal situation, the South Kore... [+2496 chars]Theres a blockchain bandit on the loose and theyve already thieved over $6.1 million `MONEY` worth of Ethereum `GPE` .

According to a report published by security consulting firm Independent Security Evaluators `ORG` (ISE `ORG`), an unknown entity has been bypassing weak private keys ... [+2797 chars]Ethereum ETH `ORG` whales account for just 7 percent `PERCENT` of transaction activity in the market but they control a third `CARDINAL` of the cryptocurrencys entire circulating supply.

Thats according to a new study by Chainanalysis `GPE` which found that although these whales dont have a... [+3193 chars]Cisco CVE-2019-1804 `PERSON` Some switches in Cisco `GPE` 's 9000 `PRODUCT` series are susceptible to a remote vulnerability. It's a bit odd to call it a vulnerability, actually, because the software is operating as intended. Cisco `PERSON` shipped out these switches with the same private key ... [+5280 chars]Abstract:

Blockchains are public ledgers of transactions verified through the use of public and private keys to sign and prove ownership of transaction data. Popular blockchains have hundreds of millions `CARDINAL` of transactions which include some of the most popular... [+24770 chars]The open source project, called Ion `ORG` , deals with the underlying mechanics of how networks talk to each other. For example, if you log onto Airbnb `PERSON` using Facebook `PERSON` , a protocol deals with the software that sends the personal information from your social profile to... [+877 chars]Opera will soon be adding native support for the TRON `ORG` blockchain in its cryptocurrency-focused browser.

Among other things, the new integration will make it possible to natively use TRON `ORG` -powered dapps and tokens within the browser. Opera `ORG` will also add suppor... [+2177 chars]Someone is stealing millions of dollars `MONEY` worth of Ethereum `GPE` by guessing users' private keys. Normally this should be impossible, but lots of keys seem to be very weak. Researchers are unsure how those weak keys are being generated and used.

Their paper is here... [+147 chars]JP Morgan `PERSON` and Microsoft `ORG` have formed a strategic partnership to promote the adoption of enterprise blockchain, reports Jane Connolly `PERSON` .

Developed by JP Morgan, Quorum `PERSON` an enterprise-variant of the Ethereum `GPE` blockchain will be the first `ORDINAL` distributed ledger platfo... [+1232 chars]If you were on the internet in the late 1990s `DATE` , you might remember companies like AllAdvantage `ORG` that promised to pay you to surf the web. You could install a program that tracked your browsing and showed you targeted ads at the top of the screen; then AllAdvant `PERSON` ... [+5038 chars]

```
[37]:  # List all Entities
       # YOUR CODE HERE!
       Trump PERSON
       Twitter GPE
       this morning TIME
       Jack PERSON
       the White House ORG
       late last year DATE
       Amazon Web Services ORG
       only about five months ago DATE
       Andy Jassy PERSON
       Kirk PERSON
       neo-Dadaists NORP
       Digital ORG
       CryptoKitties ORG
       2047 DATE
       2026 DATE
       one CARDINAL
       millions CARDINAL
       7,000 CARDINAL
       Bitcoin GPE
       Thursday DATE
       Bitcoin GPE
       6,000 MONEY
       first ORDINAL
       November last year DATE
       Ether PERSON
       ETH ORG
       ETH ORG
       Vitalik Buterin PERSON
       Twitter GPE
       Ethereum GPE
       early this morning TIME
       April 30 DATE
       201 CARDINAL
       chars]Have PERSON
       first ORDINAL
       SEC ORG
       CoinDesk Korea GPE
       over $6.1 million MONEY
       Ethereum GPE
       Independent Security Evaluators ORG
       ISE ORG
       ETH ORG
       just 7 percent PERCENT
       a third CARDINAL
       Chainanalysis GPE
       chars]Cisco CVE-2019-1804 PERSON
       Cisco GPE
       9000 PRODUCT
       Cisco PERSON
       hundreds of millions CARDINAL
       Ion ORG
       Airbnb PERSON
       Facebook PERSON
       TRON ORG
       TRON ORG
       Opera ORG
       millions of dollars MONEY
       Ethereum GPE
       Morgan PERSON
       Microsoft ORG
       Jane Connolly PERSON
       Quorum   PERSON
       Ethereum GPE
       first ORDINAL
       the late 1990s DATE
       AllAdvantage ORG
       AllAdvant PERSON
```