

ICT2202 — Digital Forensics

User Guide

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Installation

DEXOnly.py gitCommits.py

pip install pycoingecko
pip install sanpy
pip install --upgrade sanpy
pip install sanpy[extras]
Pip install simple-colours
Pip install pandas
Pip install dateutil

GitGet.py TwitterCoin.py

pip install requests
pip install sherlock
pip install BeautifulSoup
pip install pandas
pip install re
pip install os
Pip install tweepy
Pip install TextBlob
Pip install WordCloud
Pip install numpy
Pip install TorRequest
Pip install FuturesSession

whitepaper_analysis.py

Pip install pychant
pip install pdfminer.six
Pip install language_tool_python

EtherScan.py SantimentsSocials.py BSCscan.py TelegramScraper.py

Pip install Selector
Pip install tabulate
Pip install colorama
Pip install json
Pip install time
Pip install progress
Pip install telethon

Setup

Windows

For Whitepaper analysis If using Windows OS please place the whitepaper pdf named as “whitepaper.pdf” in the CryptoRuggerz_Modules folder and change the variable at line 20 to

[filename="/download/CryptoRuggerz-master/CryptoRuggerz-master/CryptoRuggerz_Modules/whitepaper.pdf"]

For Git developers background analysis, If using Windows OS please do change under the file “GitGet.py” Line 52 to “<<Computer path containing sherlock.py>>”

(e.g.Users\hidan\PycharmProjects\GitGet\sherlock.py)

Linux

For Whitepaper analysis If using Linux OS please place the whitepaper pdf named as “whitepaper.pdf” in the WhitePaper_Folder folder and change the variable at line 20 to [filename = "WhitePaper_Folder/whitepaper.pdf"]

For Git developers background analysis, If using Linux OS please do change under the file “GitGet.py” Line 52 to “../sherlock”

List to refer to find/ enter coins name/ slug/ id/ address



Git commit and Santiment Socials

<https://www.coingecko.com/en>

<https://bscscan.com/>

<https://etherscan.io/>

for DEX only, BSC scan and ETHER scan

1. Bsc scan

```
Welcome to CryptoRuggerz!
Module ID | Name of Module
-----|-----
1 | BSCScan Scrape
2 | EtherScan Scrape
3 | Decentralised Exchange Listing Check
4 | Github Activity Check
5 | Get Mean Age of Coin
6 | Get Social Metrics of Coin
7 | Telegram PnD Group Check
8 | Twitter Activity Check
9 | WhitePaper Analysis

To get started enter BSC/ETHER to select which smart chain to use
Type BSC/ETHER or modules to be used: bsc
```

1a) Run Main.py

Note: We will be using BSCscan to scrape from the Binance blockchain.

The screenshot shows the BscScan website interface. At the top, there's a search bar and navigation links. The main content area displays the token page for 'Token UnmarshalToken'. The 'Overview' section shows the price at \$1.72 and a market cap of \$10,320,541.25. The 'Profile Summary' section shows the contract address 0x2fa5da6fe0708bd63b1a7d1592577284f52256, which is highlighted in a red box. Other details include 18 decimals and the official site https://unmarshal.io/.

1b) Copy the contact address of the target token on <https://bscscan.com/> or <https://www.coingecko.com/en>

Input Binance Smart Chain contract address: 0x2FA5dAF6Fe0708f8083b1A701592577284f52256

Type	Wallet Address	Percentage Holding
Contract	0x1de0545e76a6673bee292add4ef4dba249351bb0	40.8182%
Wallet	0xd6216fc19db775df9774a6e33526131da7d19a2c	23.3599%
Contract	0x222f93187f15f354d41ff6a7703ef7e18cdd5103	11.3349%
Wallet	0x4cf8800ccc0a56396f77b1e7c46160f5df0e09a5	5.2527%
Wallet	AscendEX Hot Wallet	2.1677%
Contract	0x51384ff283e28e616b11cb80ecd3afbcba3995d4	1.7871%
Contract	0x05b47954b33b1e05670ef71cccc56b88497e582c	1.4163%
Wallet	0x4982085c9e2f89f2ecb8131eca71afad896e89cb	0.7453%
Wallet	0x0d0707963952f2fba59dd06f2b425ace40b492fe	0.6274%
Wallet	0xd7a7e8477abbe7d0453083b79a1cffe6b67d8a5ed	0.5687%
Wallet	0x50899582199c06d5264eddc12879e5210783ba8	0.5589%
Wallet	0x39a4b79a2843f36aeaa052c3de3ae033ae4c7e87	0.5156%
Contract	0x0df4b94444f13499ef34f7aecbb7f07f0e9821fa	0.4839%
Wallet	0x1dd570518e5fd5dc0ed8ac5b15c8ae4933b7d97c	0.4205%
Wallet	0x20633019a0dfe32d88268640fa8c5b4a07654189	0.3615%
Wallet	0x0ca90ac1c97fc3679df07e1ae5c20e4349c79b37	0.3252%
Contract	0x9b0a9b2c6e1a18b0f65635468fc9d39bd44d3afd	0.3189%
Wallet	0xc2b8b275821b87613f6dba5ea0505c412a6921d0	0.2799%
Wallet	0x5cbe35ac8a92be4cb410b65dac74c834ea830e27	0.264%
Wallet	0xb81c795669022c0e70b06d20fd4976090bc3d671	0.2457%
Wallet	0x744aa8938fcac6ee2e2c4376d2fc203815980a70	0.2083%
Wallet	0xcff0b3647a47253306f3c494df2500d73fc96e0e	0.1477%
Wallet	0xcdb942cdf9a393f1309b3d6505c597e9e70ba0a8	0.1381%
Wallet	0x16836f36e4f378a2173bc4c0dceac438bee88581	0.1335%
Wallet	0x406cbfc2d391bed42078138165465128b4e0cb06	0.1317%
Wallet	0xa2a44f23aa898db63894fc1340e38760bd32cabf	0.1296%
Wallet	0x6aa46c75fab9672f5689e65eb8aab5fe62a2a438	0.1249%
Wallet	0xa5aa940b4ac3f71e86a36ceed2ec65325d163954	0.1168%

Wallet	0xa5aa940b4ac5f71e86a36ceed2ec65325d163954	0.1168%	
Wallet	0x3c5a1d9296194b675cdb2910839c08719fa10bf7	0.1153%	
Wallet	0xfd3a40027a29ceb1b489f868a2dee3c9c276adc1	0.1046%	
Wallet	0x38b601b28669553192a6e461559f903b58d81abe	0.1003%	
Wallet	0x2a24144a2873ecb279b96fe5ac024322c23fa8c9	0.092%	
Wallet	0xa543942c3b0b4c60c2e9f6a1fa2fda03c4036b3a	0.09%	
Contract	0x28b85c2e26be0f66c64cfd424ae9631f1e84d58d	0.0858%	
Wallet	0x793a8b60db420c8eab7aad22dfac9f8ba6494727	0.0851%	
Wallet	0x5abb626535f455a89ab11e89e35509996d04478d	0.0752%	
Wallet	0x747e375256d21fb3d8a904d682733e8047797e4e	0.0721%	
Wallet	0x68cbadf5a83256d662a9985985d080cdfc5a193b	0.0721%	
Wallet	0x8fe9c787995d12b6ef3a9448aa944593dac93c6c	0.0721%	
Wallet	0xa455886f251dec3717fda8264df655da01003a16	0.0713%	
Wallet	0xc89e039689f076595fbc224420ad59deab77ba57	0.068%	
Wallet	0x203c6d976e5372341dbbf1c8dfb67e5d9b5b088a	0.0674%	
Wallet	0x46e64e008ea78f9410a7eb66fb101eeaf04fa921	0.0667%	
Wallet	0x28265b4188ff587e5cfe1155606026cd2ccd243d	0.0667%	
Wallet	0x508c62fe5337da91e789cf0007499c28bda7bac5	0.0617%	
Wallet	0x01fb51f8a664f0f2b7cf8f6eee89f7c1b7e05ba1	0.0598%	
Wallet	0x991dd3c699643c1f3fe5e4ced0b6db237d90bdf	0.0579%	
Wallet	0x0c2d9e4f80c998d5eb7a6acdb915ee761926817a	0.0577%	
Wallet	0x6c4536967535e8aadf7370c7e9b2145386946b79	0.0577%	
Wallet	0x90177a99afd8dcf4d14384376a426eaa0204ea20	0.057%	

Wallet holding the highest number of coins is more than 20%.

Take caution.

Highest Wallet holds 23.3599 % of total coin

1c) Extract it and input it when it asks for the Binance Smart chain contract address and it will populate the major contracts and wallets and their percentage in a table format. It will return information of the biggest wallet and if there is a need to be cautious of any major wallets.

2. Check Exchange Listing

```
===== STARTING DECENTRALISED EXCHANGE CHECK =====

Please Enter Coin id OR enter SKIP to skip DEX only analysis: unmarshal

Green have a high probability is safe.
Yellows means proceed with caution.
Reds are unsafe.
Blues are okayish however might turn yellow to red.

Reputable/ Popular CEX Exchange listed
KuCoin
Gate.io

DEX Exchange listed
PancakeSwap (v2)
Uniswap (v2)

Other CEX Exchange listed
AscendEX (BitMax)
MEXC Global

Coin unmarshal rating is : 13.333333333333334 out of 100
Number of reputable CEX exchange listed is 2 out of 15
Number of DEX exchange listed is 2 out of 145

===== END OF DECENTRALISED EXCHANGE LISTING CHECK =====
```

Community

Twitter

Telegram

Source Code

Github

API id

unmarshal

For the decentralised exchange check, you would need to input the name of the target coin which can be found in <https://www.coingecko.com/en/coins/unmarshal> api ID. It will return the rating of the coin and the number of reputable CEX and DEX exchanges the coin is listed on.

3. Show Github Activity

```
===== STARTING GIT ACTIVITY CHECK =====

Enter name of Coin for analysis or enter SKIP to skip git commits analysis: unmarshal
Mean or Median as mode of measure: mean

Descriptive statistics of unmarshal Github activity per month
Mean unmarshal github activity per month: 4.666666666666667
Median unmarshal github activity per month: 3.0
Standard Deviation unmarshal github activity per month: 5.867217604984702

Descriptive statistics of number of unique unmarshal Developer that contributed per month
Mean unmarshal unique Developers that contributed per month: 1.3333333333333333
Median unmarshal unique Developers that contributed per month: 1.0
Standard Deviation unmarshal unique Developers that contributed per month: 1.3706888336846839

Start date of github activity: 2020-12-17T16:59:53Z

unmarshal Recent 3 month Statistic per Month
Date                Number of Developer Activity      Number of Developer That Contributed
2021-07-10          0.0                                0.0
2021-08-10          0.0                                0.0
2021-09-10          14.0                               3.0


Green = Very Safe/ Very Good -- 3
Blue = Safe/ Good -- 2
Yellow = Caution -- 1
Red = unsafe/ Bad -- 0

Checks for the Developer's Activity For the Past 3 months:
unmarshal historical MEAN Developer Activity per month: 4.666666666666667
Date                Number of Developer Activity      Metric
2021-07-10          0.0                                MEAN
2021-08-10          0.0                                MEAN
2021-09-10          14.0                               MEAN

Checks for the unique number of Developers that contributed For the Past 3 months:
unmarshal historical MEAN number of Developers that contributed per month: 1.3333333333333333
Date                Number of Developer      Metric
2021-07-10          0.0                                MEAN
2021-08-10          0.0                                MEAN
2021-09-10          3.0                                MEAN

unmarshal's historical Mean Github contribution per developer: 3.5000000000000004 is lower than ETH's: 31.1690276264342
Score is : 6/ 21

===== END OF GIT ACTIVITY CHECK =====
```

For the Git Activity Check, input the name/ slug of the target coin which can be found in  `santimentslug` . The system will ask for your preferred mode of measure, type either 'mean' or 'median'. The code will return the amount of activities in the GitHub repository. It will return with a score for the contributions of the developer in comparison with Ethereum's repository.

4. Get Average Coin age

```
===== STARTING MEAN AGE CHECK =====

Please enter coin slug name OR type SKIP to skip: unmarshal
===== Mean age of coins in days =====

| datetime                | value |
|-----|-----|
| 2021-09-30T00:00:00Z | 113.971 |

Coin is older than 3 months but be cautious!

===== END OF COIN MEAN AGE CHECK =====
```

The Mean Age of the coin will begin next and it will prompt the user for the coin's slug name which can be found in [+ sentimentslug](#) . It will return with the average age (in days) of the coin and will notify if there is a need to be cauti

5. Show Social Metrics

===== STARTING SOCIAL METRIC CHECK =====

Please enter coin slug name OR type SKIP to skip: unmarshal

===== Total Social Volume over 3 months =====

datetime	value
-----	-----
2021-09-02T00:00:00Z	53
2021-09-30T00:00:00Z	121
2021-10-28T00:00:00Z	85

Total volume: 259

Average volume: 86

===== Total Social Dominance over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	0.00496104
2021-09-02T00:00:00Z	0.00315919
2021-09-30T00:00:00Z	0.00689466

Total Social Dominance : 0

Average Social Dominance in %: 0

===== Total Positive Sentiment over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	8.79833
2021-09-02T00:00:00Z	8.91134
2021-09-30T00:00:00Z	9.48415

Total Positive Sentiment: 27

Average Positive Sentiment: 9

===== Total Negative Sentiment over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	7.28232
2021-09-02T00:00:00Z	4.68681
2021-09-30T00:00:00Z	5.1133

Total Negative Sentiment: 17

Average Negative Sentiment: 6

```

===== Total Unique Posts over 3 months =====


| datetime                | value |
|-----|-----|
| 2021-08-05T00:00:00Z    | 51    |
| 2021-09-02T00:00:00Z    | 24    |
| 2021-09-30T00:00:00Z    | 24    |

Total Unique Traffic: 99
Average Unique Traffic: 33

===== Comparing with coins with history of pump of dump =====
Total Score: 0

===== END OF SOCIAL METRIC CHECK =====

```

The next check is the social metric check, it will prompt the user for the coin slug name found in  `santimentslug` . It will return with the social volume, positive/negative sentiments, unique posts over the past 3 months captured using Santiment API and return with a score.

6. Check Pump and Dump groups through telegram

```
===== STARTING TELE GROUP CHECK =====

Enter a coin to search: unmarshal

| Pump and Dump Telegram Channel | Times Mentioned in past 3 months |
|-----|-----|
| MegaPumpFFA | 0 |
| wallstreetevents | 0 |
| Cryptocoinpumpsignals | 0 |
| binancepumpcryptopump | 0 |
| binancepumpproys | 0 |
| TodayWePush | 0 |
| binacepumpswholes | 0 |
| ga_pump_group | 0 |
| wall_street_bets_channel | 0 |
| wsb_crpyto | 0 |

Query has been mentioned a total of 0 time(s)!

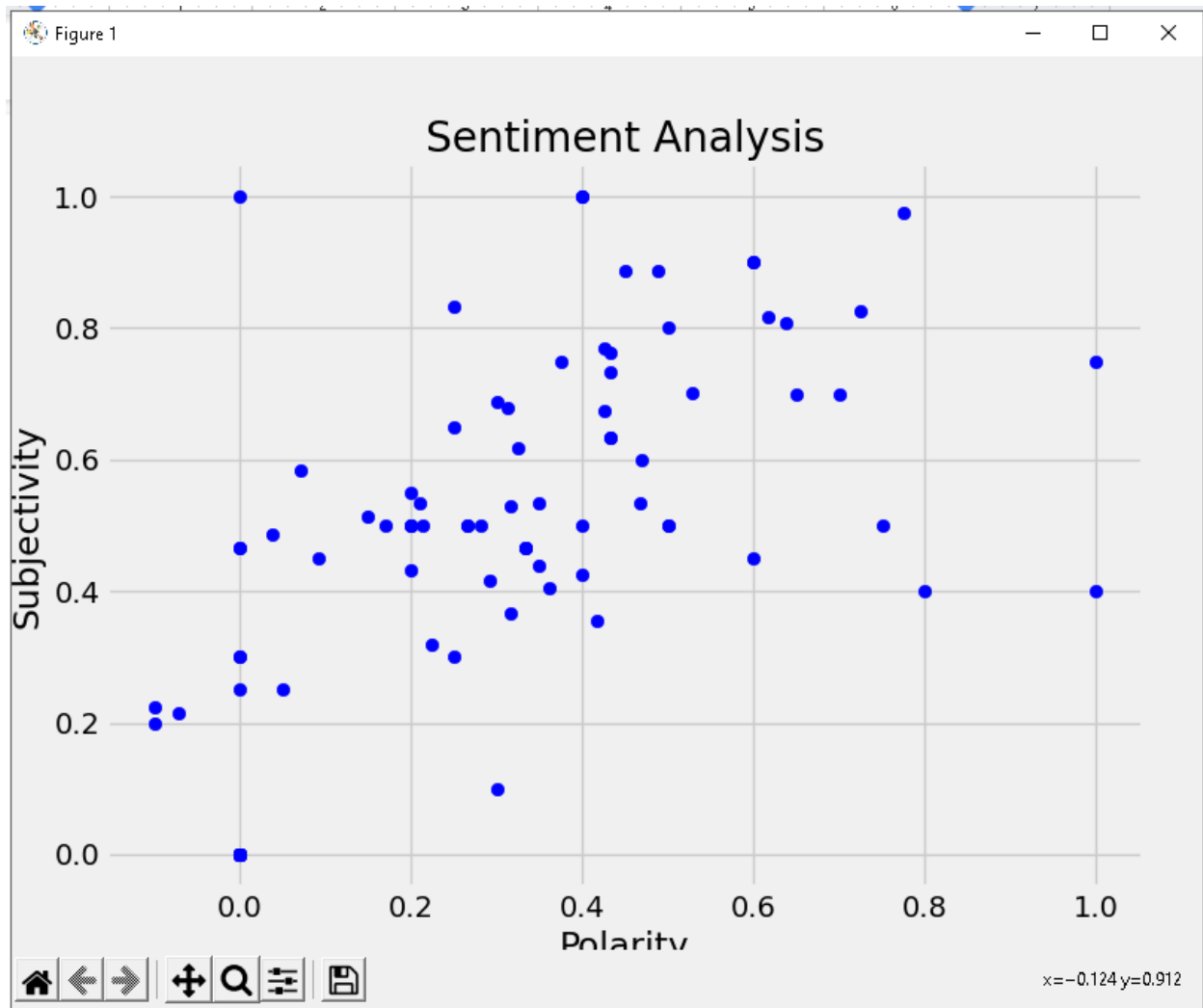
===== END OF GIT ACTIVITY CHECK =====
```

The telegram group checker would run the telegram group checker next. It would prompt the user for the name of the coin to search. Please do be informed that Telegram might prompt you for a telegram code as the telegram group checker will listen to the following telegram channels.

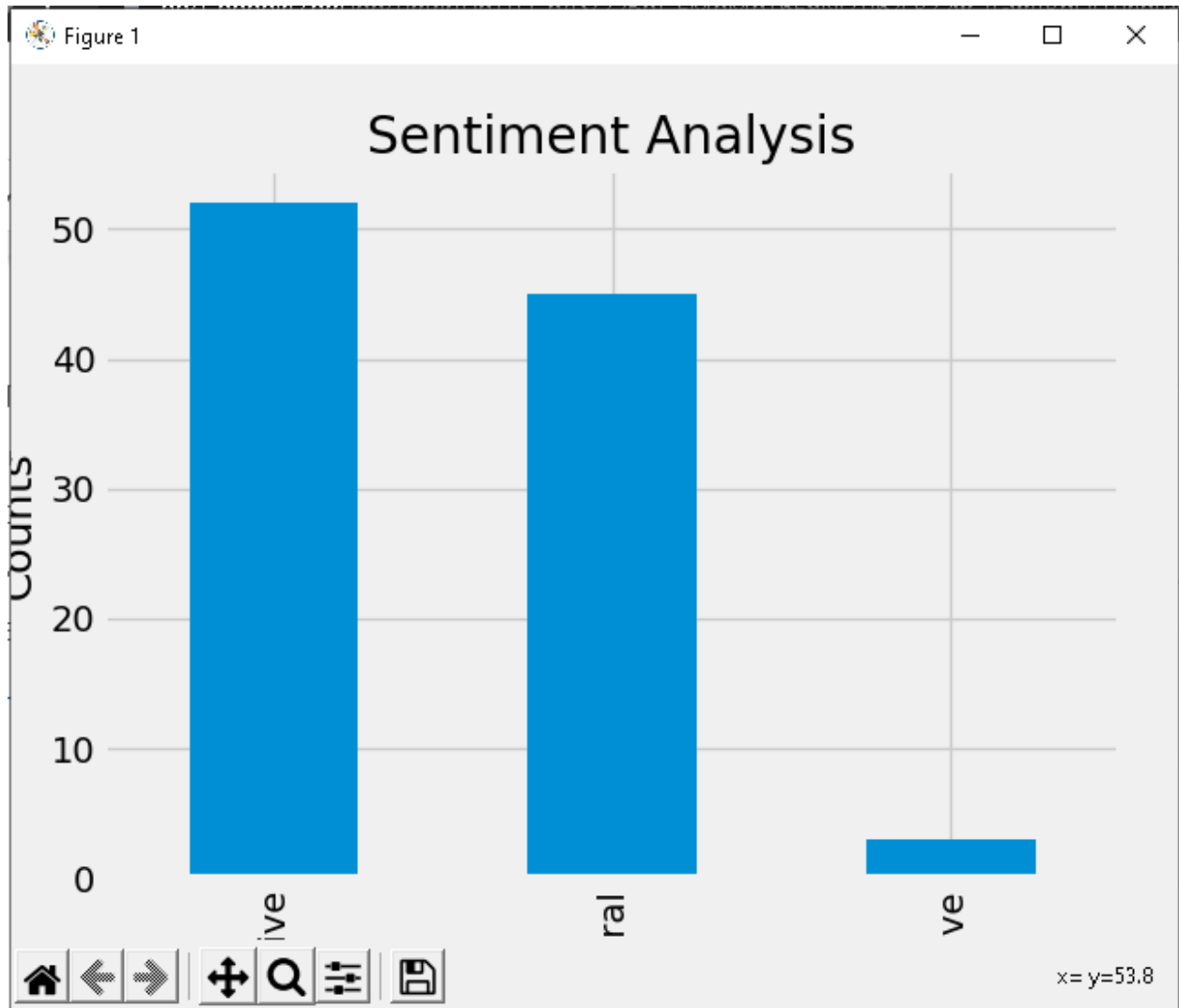
7. Twitter activity check

```
===== STARTING TWITTER ACTIVITY CHECK =====  
Choose the twitter account you would want to analyse: unmarshal  
█
```

7a) The twitter activity checker will begin and prompt the user for the twitter keyword they want to analyse. It will return figure 1 which is a word map of the most common words associated with the searched keyword. The second figure will show the sentiment analysis of the common words. It will show the subjectivity and polarity (whether its leaning more positive or negative)



7c) This Scatter plot diagram enables the user to have a clear view on what is the score of the sentiment. Seeing the diagram above it can be easily seen that most tweets are positive and only a relative few are negative. Through further analysis, our team realised that usually ruggable cryptocurrency tends to have much more positive tweets that is ranged after 0.25 (therefore for our program, we coded such that only after 0.25 polarity, it will be positive and anything before 0.25 to 0 will be neutral) when compared to legitimate cryptocurrency. From the diagram above, it can be seen that for unmarshal cryptocurrency, it contains close to the same or even more positive plots after polarity 0.25 then what is before.



7d) This bar diagram enables the users to have a much more simplified and easier visualisation. This enables them to clearly see the sentiment analysis results. This shows that positive is more than neutral which should not be the case as through analysis, we realised that a legitimate cryptocurrency usually has a positivity level less than 40.


```
===== STARTING TWITTER ACTIVITY CHECK =====  
  
Choose the twitter account you would want to analyse: unmarshal  
HIGH RISK: High Chance it being Rug Pull  
Do you want to analyse another twitter account? (please enter yes or no)  
no  
Exiting...  
  
===== END OF TWITTER ACTIVITY CHECK =====
```

7e) After all the images and diagrams were shown to the user, the program will state its analysis on it. As mentioned above, usually a legitimate cryptocurrency will have a positive level of polarity above 0.25 being less than 40% of its total tweet. Therefore, as seen in the above bar diagram, it can be seen that the positive rating of it is more than 50% therefore, this is a tell tale sign that this project has a high chance of being ruggable or a pump and dump. Therefore the program will display it as “HIGH RISK: High Chance of it being Rug Pull”.

8. White paper analysis

```
===== STARTING WHITEPAPER ANALYSIS =====
```

```
Analyzing🕒
```

```
===== STARTING WHITEPAPER ANALYSIS =====
```

```
Analyzing🕒
```

```
There are a total of 19294 elements.The length of the whitepaper seems legitimate
```

```
ERRORS FOUND: 2598 The errors found in this whitepaper is: 13.47%. The amount of grammatical errors is high,red flag.
```

```
===== END OF WHITEPAPER CHECK =====
```

```
Result is 42.54190476190476 out of 100  
The lower the number the worse the coin is!
```

The whitepaper analysis would run next. A whitepaper must be saved in PDF format in the target folder and the exact name of the PDF file name must be stored in the white_analysis.py code or alternatively you could just rename the target file to whitepaper.pdf. If there is no file found, it will just return a message stating there is no whitepaper file found.

Note: Depending on the size of the file, it will take a while to process, and it will inform the user's of the traits of the file such as the length and grammatical errors and if they should be wary of the target coin.

9. Background Check of Cryptocurrency and it's developers

```
Would you like to perform a background check on the project[Y/N]?y
===== STARTING PROJECT BACKGROUND CHECK =====

Enter Project to perform background check on:
unmarshal
Empty DataFrame
Columns: [Name, RepoNickname, UserUrl]
Index: []

Enter choice:
(1)for user information
(2)for the projects he is doing
Your Choice: █
```

The project background check will run last, it will prompt the user firstly for the cryptocurrency project he wants to look into (in this case, we will be using unmarshal as an example). As seen above, it can be seen that unmarshal does not have any information being retrieved, this is due to the fact that it's developers were all set to private therefore it's data wasn't retrieved. This can be used as a red flag to the user as most legitimate developers have nothing to hide such as developers from ethereum and bitcoin. However, for a cryptocurrency to privatise their developers from the public is suspicious. And therefore after analysing it, we can be safe to say that this cryptocurrency is most likely a scam.

Note: In this case, the developers are privatised therefore the other function will not be useful. However, if the developers aren't privatised, the user will be given the ability to search more in depth regarding information of a specific developer of the project or other projects that the developer is doing.

1. Ether scan

```
Welcome to CryptoRuggerz!
|  Module ID | Name of Module |
|-----|-----|
| 1 | BSCScan Scrape |
| 2 | EtherScan Scrape |
| 3 | Decentralised Exchange Listing Check |
| 4 | Github Activity Check |
| 5 | Get Mean Age of Coin |
| 6 | Get Social Metrics of Coin |
| 7 | Telegram PnD Group Check |
| 8 | Twitter Activity Check |
| 9 | WhitePaper Analysis |
To get started enter BSC/ETHER to select which smart chain to use
Type BSC/ETHER or modules to be used: ETHER
```

1a) Run Main.py

Note: We will be using Etherscan to scrape from the Ethereum blockchain.

The screenshot shows the Etherscan website interface. At the top, there's a search bar and navigation links. The main content area displays the 'Token Compound' page. On the left, the 'Overview' section shows the price of COMP tokens (\$363.68) and other metrics. On the right, the 'Profile Summary' section is visible, with the 'Contract' field highlighted by a red box, showing the hexadecimal address 0xc00e94cb662c3520282e6f5717214004a7126888.

1b) Copy the contact address of the target token on <https://etherscan.io/> or <https://www.coingecko.com/en>

----- STARTING ETHERSCAN SCRAPE -----

Input Ethereum contract address: 0xc00e94cb662c3520282e6f5717214004a7f26888

Type	Wallet Address	Percentage Holding
Contract	Compound: Reservoir	28.9868%
Wallet	Compound: Team 2	4.8956%
Contract	Compound: cCOMP Token	3.9616%
Wallet	Fund: 0xfa9...0d7	3.0596%
Wallet	Compound: Team 3	3.0%
Wallet	0x0f50d31b3eae6d65236dd3736b863cffa4c63c4e	2.7597%
Wallet	0xfbe18f066f9583dac19c88444bc2005c99881e56	2.5676%
Wallet	Binance 8	1.742%
Contract	Compound: Timelock	1.6338%
Contract	Compound: Comptroller	1.1654%
Wallet	0x900846b3ab9de7c631a8115af9c2e844b78a1bc5	1.1431%
Wallet	0xd3f03984a90fd15e909b2e9467e98cadea181da3	1.1108%
Wallet	0x8328a42a583d4812268c4dd63ae2f77f37a6b4f3	1.0863%
Wallet	0x7b5cc9cea37f66f8e21a4c393234a84e458a8d2d	1.05%
Wallet	0x3e0f52239518b540a06f81d51ac4ea7ffdece329	1.01%
Wallet	0x34112c83e77a3234f2ce320b05f758f9b17f93c8	1.0%
Wallet	0x2ea5973ffc1dac5503387ae31257b659aea91167	1.0%
Wallet	Binance 14	0.9317%
Wallet	0xcc261ab4be137eacf57c19ed97c186b4d88004ca	0.9%
Wallet	0x7f2c7587ef7bbb7f9432aa7cc0f0e5e7de12646f	0.82%
Wallet	0x9a4652f21952a0a7c9e76f7e7aae6b561714ea09	0.82%
Wallet	0xa0b8d1e07cb8511cf728669bf6613a85aa636826	0.75%
Wallet	0x563cece8e50d2f65aa4124f555eca86ab2158f7d	0.75%
Wallet	0xa25aa6dfbf6d9bbd7a6a9eb47b9f1e57a2bd92d7	0.7096%
Wallet	0x912722a37e5fdfe480b4f52b949797b80594fe8b	0.66%
Wallet	0x0d8846e5d4af5dd24be37f460c07046fd80d96a3	0.65%
Contract	Uniswap V3: COMP 2	0.6491%
Wallet	Compound: Team 1	0.5822%
Wallet	Binance 7	0.5727%
Wallet	0x20fac6b59617e21e20feb874972962c7b43985c5	0.55%
Contract	Set: DeFiPulse Index	0.5099%
Wallet	0x574a76f5fce84d841b6a62742e693af4c23a46bb	0.5%
Wallet	0x52d912b67d20db0c4a82bd39f5edb910576952ee	0.5%
Wallet	0x5012de52bf4282c399033db03e79f9f790b507a1	0.5%
Wallet	0x7b4cec1426f470a14857081ddefb0f6843431d41	0.5%
Wallet	0x19f665b77e569213ed66b7b8027e566664797eef	0.5%
Wallet	0x897cca2fff87de371d9b5f7500d6225bf9413a14	0.5%
Wallet	0x1319ee7813b76bdda5caa65cc0bb36b57a9c1494	0.5%
Wallet	0xa5044e67f0c35b31fe82f2ded6606b0b91545e98	0.5%
Wallet	0x319f179e85fecfc15c391c9213bcce91f42afab5	0.5%
Wallet	0x47ac0fb4f2d84898e4d9e7b4dab3c24507a6d503	0.5%
Wallet	0xf0775dd7a342f123b63826eab7abb979d109b2dc	0.5%
Wallet	0x87fb2907ed44e2b1b7d75aa72b323d5b4dcad00b	0.4831%
Contract	SushiSwap: COMP	0.4732%
Wallet	0xa305fab8bda7e1638235b054889b3217441dd645	0.4551%
Wallet	0xf93d43dbb6215963d8e3e3c2ac602bb8311c8503	0.45%
Wallet	FTX Exchange	0.4274%
Wallet	Huobi 10	0.4268%
Wallet	0x3ddfa8ec3052539b6c9549f12cea2c295cff5296	0.4166%

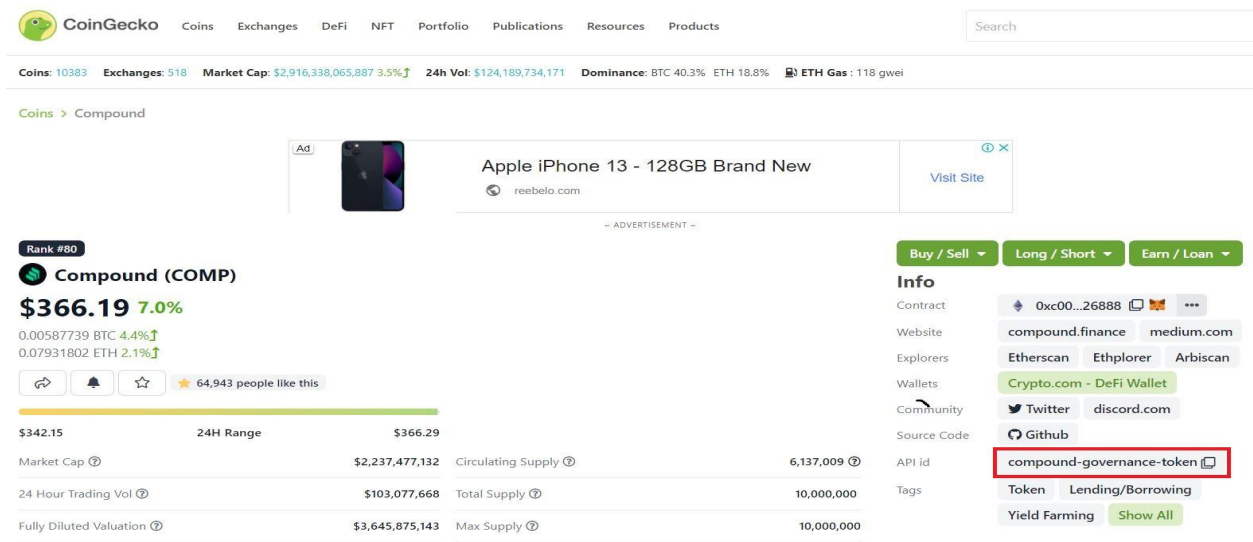
Wallet	0x897cca2fff87de371d9b5f7500d6225b79413a14	0.5%
Wallet	0x1319ee7813b76bdda5caa65cc0bb36b57a9c1494	0.5%
Wallet	0xa5044e67f0c35b31fe82f2ded6606b0b91545e98	0.5%
Wallet	0x319f179e85fecfc15c391c9213bcce91f42afab5	0.5%
Wallet	0x47ac0fb4f2d84898e4d9e7b4dab3c24507a6d503	0.5%
Wallet	0xf0775dd7a342f123b63826eab7abb979d109b2dc	0.5%
Wallet	0x87fb2907ed44e2b1b7d75aa72b323d5b4dcad00b	0.4831%
Contract	SushiSwap: COMP	0.4732%
Wallet	0xa305fab8bda7e1638235b054889b3217441dd645	0.4551%
Wallet	0xf93d43dbb6215963d8e3e3c2ac602bb8311c8503	0.45%
Wallet	FTX Exchange	0.4274%
Wallet	Huobi 10	0.4268%
Wallet	0x3ddfa8ec3052539b6c9549f12cea2c295cff5296	0.4166%
Wallet	0x1c17622cfa9b6fd2043a76dfc39a5b5a109aa708	0.3816%

Wallet holding the highest number of coins is less than 20%.
 Highest Wallet holds 4.8956 % of total coin

===== END OF ETHERSCAN SCRAPE =====

1c) Extract it and input it when it asks for the Ethereum network contract address and it will populate the major contracts and wallets and their percentage in a table format. It will return information of the biggest wallet and if there is a need to be cautious of any major wallets.

2. Check Exchange Listing



CoinGecko Coins Exchanges DeFi NFT Portfolio Publications Resources Products

Coins: 10383 Exchanges: 518 Market Cap: \$2,916,338,065,887 3.5%↑ 24h Vol: \$124,189,734,171 Dominance: BTC 40.3% ETH 18.8% ETH Gas: 118 gwei

Coins > Compound

Compound (COMP)
Rank #80
\$366.19 7.0%
0.00587739 BTC 4.4%↑
0.07931802 ETH 2.1%↑
64,943 people like this

\$342.15	24H Range	\$366.29	
Market Cap	\$2,237,477,132	Circulating Supply	6,137,009
24 Hour Trading Vol	\$103,077,668	Total Supply	10,000,000
Fully Diluted Valuation	\$3,645,875,143	Max Supply	10,000,000

Info

- Contract: 0xc00...26888
- Website: compound.finance, medium.com
- Explorers: Etherscan, Ethplorer, Arbiscan
- Wallets: Crypto.com - DeFi Wallet
- Community: Twitter, discord.com
- Source Code: Github
- API id: **compound-governance-token**
- Tags: Token, Lending/Borrowing, Yield Farming

```
===== STARTING DECENTRALISED EXCHANGE CHECK =====

Please Enter Coin id OR enter SKIP to skip DEX only analysis: compound
Coin doesnt exist in database or wrong spelling
Please Enter Coin id OR enter SKIP to skip DEX only analysis: compound
Coin doesnt exist in database or wrong spelling
Please Enter Coin id OR enter SKIP to skip DEX only analysis: Compound
Coin doesnt exist in database or wrong spelling
Please Enter Coin id OR enter SKIP to skip DEX only analysis: compound-governance-token

Green have a high probability is safe.
Yellows means proceed with caution.
Reds are unsafe.
Blues are okayish however might turn yellow to red.

Reputable/ Popular CEX Exchange listed
Binance
Coinbase Exchange
Huobi Global
KuCoin
Crypto.com Exchange
Gate.io
FTX
Binance US
Kraken
Bitfinex
Gemini
Bittrex
Poloniex
OKEx

DEX Exchange listed
Uniswap (v3)
Uniswap (v2)
Sushiswap
Sushiswap (Polygon POS)
Bancor Network
ApeSwap
```

For the decentralised exchange check, you would need to input the name of the target coin which can be found in <https://www.coingecko.com/en/coins/compound> api ID. It will return the rating of the coin and the number of reputable CEX and DEX exchanges the coin is listed on.

3. Show Github Activity

```
===== STARTING GIT ACTIVITY CHECK =====

Enter name of Coin for analysis or enter SKIP to skip git commits analysis: compound-governance-token
Coin doesnt exist in database or wrong spelling

Enter name of Coin for analysis or enter SKIP to skip git commits analysis: compound-governance-token
Coin doesnt exist in database or wrong spelling

Enter name of Coin for analysis or enter SKIP to skip git commits analysis: Compound
Coin doesnt exist in database or wrong spelling

Enter name of Coin for analysis or enter SKIP to skip git commits analysis: compound
Mean or Median as mode of measure: mean

Descriptive statistics of compound Github activity per month
Mean compound github activity per month: 143.24
Median compound github activity per month: 83.5
Standard Deviation compound github activity per month: 186.12641742994498

Descriptive statistics of number of unique compound Developer that contributed per month
Mean compound unique Developers that contributed per month: 7.3
Median compound unique Developers that contributed per month: 5.0
Standard Deviation compound unique Developers that contributed per month: 6.098678344610446

Start date of github activity: 2018-01-31T00:21:00Z

compound Recent 3 month Statistic per Month
Date          Number of Developer Activity      Number of Developer That Contributed
2021-07-10    165.0                             18.0
2021-08-10    163.0                             16.0
2021-09-10    155.0                             16.0

Green = Very Safe/ Very Good -- 3
Blue  = Safe/ Good -- 2
Yellow = Caution -- 1
Red   = unsafe/ Bad -- 0

Checks for the Developer's Activity For the Past 3 months:
compound historical MEAN Developer Activity per month: 143.24
Date          Number of Developer Activity      Metric
2021-07-10    165.0                             MEAN
2021-08-10    163.0                             MEAN
2021-09-10    155.0                             MEAN
```


1964	1962	Cryptocurrency	Ergo	ergo	ERG	35316150
1965	1963	Stablecoin	MITH Cash	mith-cash	MIC	0
1966	1964	E-Commerce	Shopping	shopping	SPI	1000000
1967	1965	Cryptocurrency	Algorand	algorand	ALGO	6.69E+09
1968	1966	DeFi	pBTC35A	pbtc35a	pBTC35A	0
1969	1967	Gaming	PoolTogether	pooltogether	POOL	10000000
1970	1968	DeFi	UNION Protocol	union-protocol-g	UNN	1.00E+09
1971	1969	Infrastructure	Keep Network	keep-network	KEEP	1.00E+09
1972	1970	Blockchain Service	Cartesi	cartesi	CTSI	1.00E+09
1973	1971	DeFi	Badger DAO	badger-dao	BADGER	21000000
1974	1972	Social	2key.network	2key-network	2KEY	5.99E+08
1975	1973	DeFi	YFFII Finance	yffii-finance	YFFII	30000
1976	1974	Entertainment	Veracity	veracity	VRA	1.04E+10
1977	1975	DeFi	Mirror Protocol	mirror-protocol	MIR	3.71E+08
1978	1976	Financial	Celo	celo	CELO	1.00E+09
1979	1977	Cloud Storage	Arweave	arweave	AR	63190435
1980	1978	Lending	Compound	compound	COMP	10000000
1981	1979	Blockchain Service	NuCypher	nucypher	NU	1.33E+09
1982	1980	Ethereum	Monavale	monavale	MONA	9940.755
1983	1981	DeFi	DMM: Governance	dmm-governance	DMG	2.50E+08
1984	1982	Marketing	BitTube	bit-tube	TUBE	3.26E+08
1985	1983	Supply	Ambrosus	amber	AMB	7.70E+08
1986	1984	Decentralized Exchange	Balancer	balancer	BAL	35725000
1987	1985	Lending	bZx Protocol	bzx	BZRX	1.03E+09
1988	1986	Insurance	NXM	nexus-mutual	NXM	6899999
1989	1987	DeFi	Serum	serum	SRM	1.09E+09
1990	1988	Financial	TrustSwap	trustswap	SWAP	99996769
1991	1989	Lending	DFI.Money	yearn-finance-ii	YFII	39375
1992	1990	Lending	Meta	meta	MTA	99995245
1993	1991	DeFi	Lido DAO Token	lido-dao	LDO	1.00E+09
1994	1992	Interoperability	NerveNetwork	nervenetwork	NVT	1.12E+09
1995	1993	Protocol	Meter	meter	MTRG	40000000

```

Checks for the unique number of Developers that contributed For the Past 3 months:
compound historical MEAN number of Developers that contributed per month: 7.3
Date           Number of Developer           Metric
2021-07-10      18.0                               MEAN
2021-08-10      16.0                               MEAN
2021-09-10      16.0                               MEAN

compound's historical Mean Github contribution per developer: 19.62191780821918 is lower than ETH's: 31.167093962312524
Score is : 15/ 21

===== END OF GIT ACTIVITY CHECK =====

```

For the Git Activity Check, input the name/ slug of the target coin which can be found in [+ sentimentslug](#) . The system will ask for your preferred mode of measure, type either 'mean' or 'median'. The code will return the amount of activities in the GitHub repository. It will return with a score for the contributions of the developer in comparison with Ethereum's repository.

4. Get Average Coin age

```
===== STARTING MEAN AGE CHECK =====

Please enter coin slug name OR type SKIP to skip: compound
===== Mean age of coins in days =====

| datetime                | value |
|-----|-----|
| 2021-09-30T00:00:00Z | 352.391 |

Coin is older than 6 months!

===== END OF COIN MEAN AGE CHECK =====
```

The Mean Age of the coin will begin next and it will prompt the user for the coin's slug name which can be found in [+ sentimentslug](#) . It will return with the average age (in days) of the coin and will notify if there is a need to be cauti

5. Show Social Metrics

===== STARTING SOCIAL METRIC CHECK =====

Please enter coin slug name OR type SKIP to skip: compound

===== Total Social Volume over 3 months =====

datetime	value
-----	-----
2021-09-02T00:00:00Z	2292
2021-09-30T00:00:00Z	3181
2021-10-28T00:00:00Z	1010

Total volume: 6483

Average volume: 2161

===== Total Social Dominance over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	0.153013
2021-09-02T00:00:00Z	0.136884
2021-09-30T00:00:00Z	0.345904

Total Social Dominance : 1

Average Social Dominance in %: 0

===== Total Positive Sentiment over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	739.481
2021-09-02T00:00:00Z	553.494
2021-09-30T00:00:00Z	269.68

Total Positive Sentiment: 1563

Average Positive Sentiment: 521

===== Total Negative Sentiment over 3 months =====

datetime	value
-----	-----
2021-08-05T00:00:00Z	179.119
2021-09-02T00:00:00Z	163.646
2021-09-30T00:00:00Z	288.227

Total Negative Sentiment: 631

Average Negative Sentiment: 210

```
===== Total Unique Posts over 3 months =====  


| datetime             | value |
|----------------------|-------|
| 2021-08-05T00:00:00Z | 598   |
| 2021-09-02T00:00:00Z | 455   |
| 2021-09-30T00:00:00Z | 400   |

  
Total Unique Traffic: 1453  
Average Unique Traffic: 484  
  
===== Comparing with coins with history of pump of dump =====  
Total Score: 0  
  
===== END OF SOCIAL METRIC CHECK =====
```

The next check is the social metric check, it will prompt the user for the coin slug name found in `sentimentslug`. It will return with the social volume, positive/negative sentiments, unique posts over the past 3 months captured using Santiment API and return with a score.

6. Check Pump and Dump groups through telegram

```
===== STARTING TELE GROUP CHECK =====

Enter a coin to search: compound
| Pump and Dump Telegram Channel | Times Mentioned in past 3 months |
|-----|-----|
| MegaPumpFFA | 0 |
| wallstreetevents | 0 |
| Cryptocoinpumpsignals | 0 |
| binancepumpcryptopump | 0 |
| binancepumproys | 0 |
| TodayWePush | 0 |
| binacepumpswholes | 0 |
| ga_pump_group | 0 |
| wall_street_bets_channel | 0 |
| wsb_crpyto | 0 |

Query has been mentioned a total of 0 time(s)!

===== END OF GIT ACTIVITY CHECK =====
```

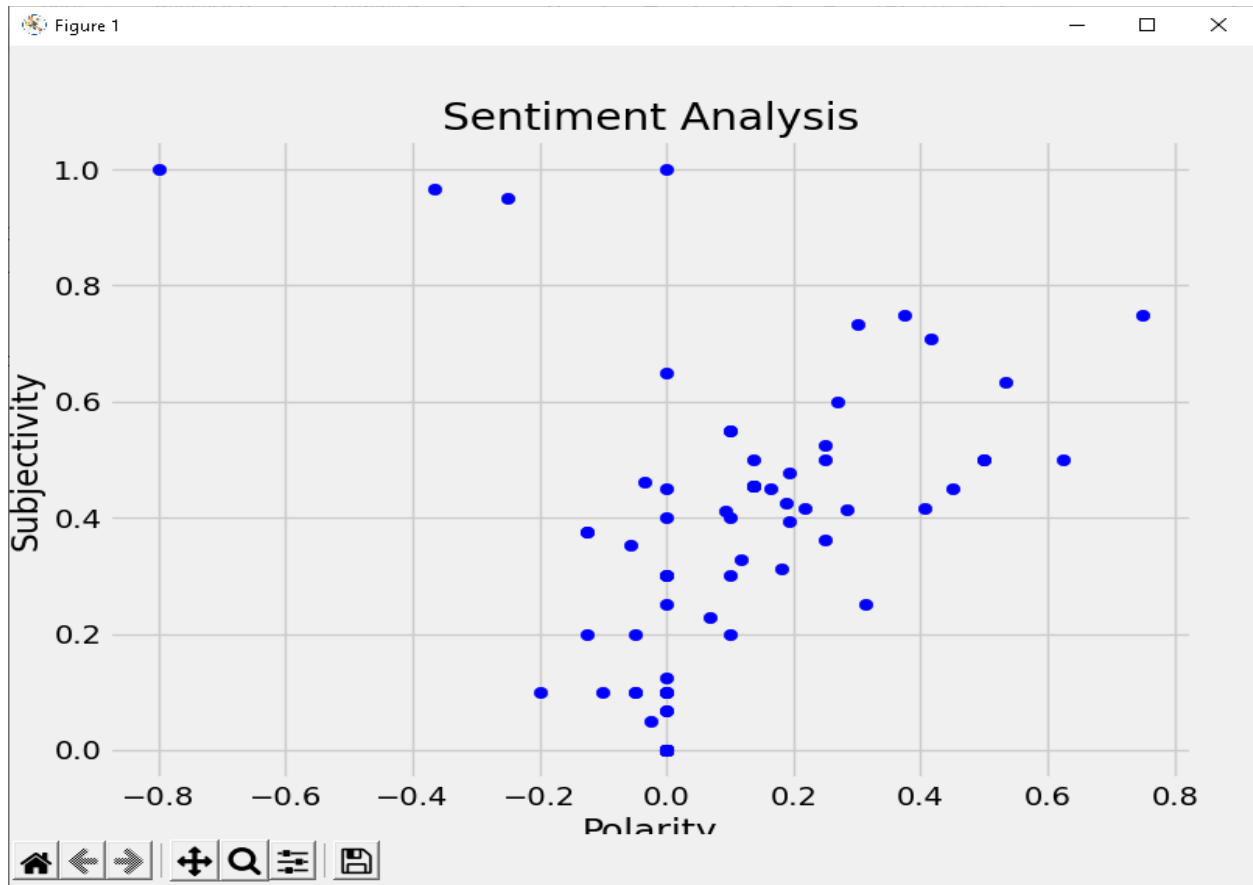
The telegram group checker would run the telegram group checker next. It would prompt the user for the name of the coin to search. Please do be informed that Telegram might prompt you for a telegram code as the telegram group checker will listen to the following telegram channels.

7. Twitter activity check

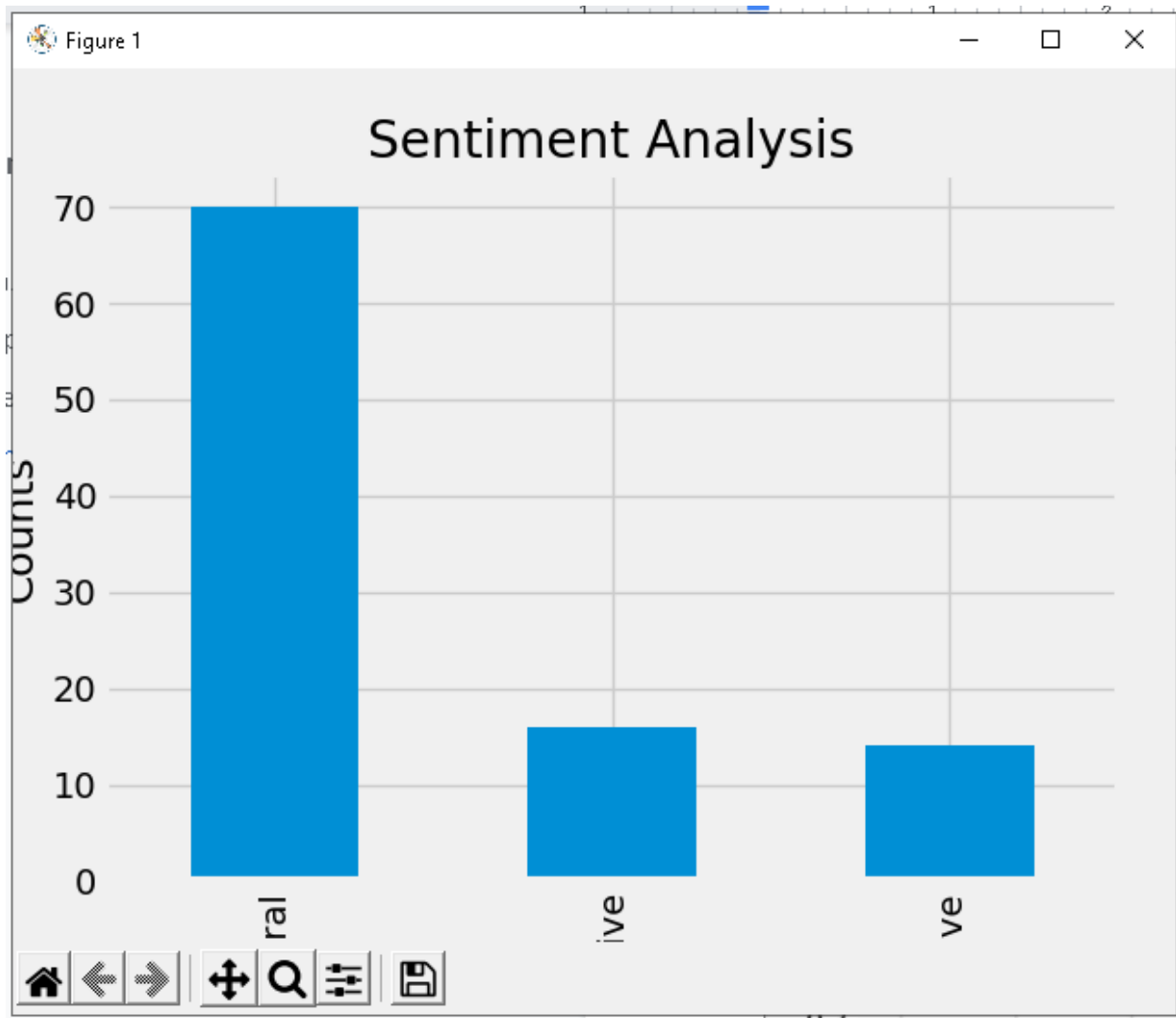
```
===== STARTING TWITTER ACTIVITY CHECK =====
```

```
Choose the twitter account you would want to analyse: compoundfinance  
█
```

7a) The twitter activity checker will begin and prompt the user for the twitter keyword they want to analyse. It will return figure 1 which is a word map of the most common words associated with the searched keyword. The second figure will show the sentiment analysis of the common words. It will show the subjectivity and polarity (whether its leaning more positive or negative)



7c) This Scatter plot diagram enables the user to have a clear view on what is the score of the sentiment. Seeing the diagram above it can be easily seen that most tweets are positive and only a relative few are negative. Through further analysis, our team realised that usually ruggable cryptocurrency tends to have much more positive tweets that is ranged after 0.25 (therefore for our program, we coded such that only after 0.25 polarity, it will be positive and anything before 0.25 to 0 will be neutral) when compared to legitimate cryptocurrency. From the diagram above, it can be seen that for compound cryptocurrency, there is more neutral than positive.



7d) This bar diagram enables the users to have a much more simplified and easier visualisation. This enables them to clearly see the sentiment analysis results. This shows that neutral is the highest out of the rest therefore indicating that this cryptocurrency is most probably not a rug or a pump and dump.

```
===== STARTING TWITTER ACTIVITY CHECK =====  
  
Choose the twitter account you would want to analyse: compoundfinance  
LOW RISK: Can never be too sure  
Do you want to analyse another twitter account? (please enter yes or no)  
no  
Exiting...  
  
===== END OF TWITTER ACTIVITY CHECK =====
```

7e) After all the images and diagrams were shown to the user, the program will state its analysis on it. As mentioned above, usually a legitimate cryptocurrency will have a positive level of polarity above 0.25 being less than 40% of its total tweet. Therefore, as seen in the above bar diagram, it can be seen clearly that the positive rating is not even close to 40% and therefore, the program will display a low risk notice to the user stating “LOW RISK: Can never be too sure”.

Note: However, in cryptocurrency and due to the rise in technology, you can never be too sure. That's the reason why our program offers much more functions than just this twitter activity check functionality.

8. White paper analysis

```
===== STARTING WHITEPAPER ANALYSIS =====
```

```
Analyzing🕒
```

```
===== STARTING WHITEPAPER ANALYSIS =====
```

```
Analyzing🕒
```

```
There are a total of 12045 elements.The length of the whitepaper seems legitimate
```

```
ERRORS FOUND: 349 The errors found in this whitepaper is: 2.9%. The amount of grammatical errors is ok.
```

```
===== END OF WHITEPAPER CHECK =====
```

```
Result is 75.1647619047619 out of 100  
The lower the number the worse the coin is!
```

The whitepaper analysis would run next. A whitepaper must be saved in PDF format in the target folder and the exact name of the PDF file name must be stored in the white_analysis.py code or alternatively you could just rename the target file to whitepaper.pdf. If there is no file found, it will just return a message stating there is no whitepaper file found.

Note: Depending on the size of the file, it will take a while to process, and it will inform the user's of the traits of the file such as the length and grammatical errors and if they should be wary of the target coin.

9. Background Check of Cryptocurrency and it's developers

```
===== STARTING PROJECT BACKGROUND CHECK =====

Enter Project to perform background check on:
ethereum

      Name      RepoNickname      UserUrl
0      Alexander Arlt      /aarlt      https://github.com//aarlt
1      Alessandro Coglio      /acoglio      https://github.com//acoglio
2      acud      /acud      https://github.com//acud
3      Patricio Palladino      /alcuadrado      https://github.com//alcuadrado
4      Oleh Aldekein      /Aldekein      https://github.com//Aldekein
5      Anett      /anettrolikova      https://github.com//anettrolikova
6      Angela Lu      /astarinmymind      https://github.com//astarinmymind
7      Alex Beregszaszi      /axic      https://github.com//axic
8      bas-vk      /bas-vk      https://github.com//bas-vk
9      Kamil Śliwak      /cameel      https://github.com//cameel
10     cdetrio      /cdetrio      https://github.com//cdetrio
11     Christian Parpart      /christianparpart      https://github.com//christianparpart
12     Corwin Smith      /corwintines      https://github.com//corwintines
13     CPSTL      /CPSTL      https://github.com//CPSTL
14     Marian OANCEA      /cubedro      https://github.com//cubedro
15     Daniel Kirchner      /ekpyron      https://github.com//ekpyron
16     ethers      /ethers      https://github.com//ethers
17     Ev      /evertonfraga      https://github.com//evertonfraga
18     Frank Szendzielarz      /FrankSzendzielarz      https://github.com//FrankSzendzielarz
19     Franziska Heintel      /franzihei      https://github.com//franzihei
20     Ferenc Szabo      /frncmx      https://github.com//frncmx
21     Grant Wuerker      /g-r-a-n-t      https://github.com//g-r-a-n-t
22     Gabriel Rocheleau      /gabrocheleau      https://github.com//gabrocheleau
23     Guillaume Ballet      /gballet      https://github.com//gballet
24     Andrei Maiboroda      /gumb0      https://github.com//gumb0
25     Gustav-Simonsson      /Gustav-Simonsson      https://github.com//Gustav-Simonsson
26     heikoheiko      /heikoheiko      https://github.com//heikoheiko
27     Harikrishnan Mulackal      /hrkrshnn      https://github.com//hrkrshnn
28     Hugo      /hugo-dc      https://github.com//hugo-dc
29     David Disu      /ioedeveloper      https://github.com//ioedeveloper
```

9a) The project background check will run last, it will prompt the user firstly for the cryptocurrency project he wants to look into (in this example , we will be using ethereum as an example). As seen above, The developers of ethereum can be seen.

Note: unlike the previous case, the developers aren't privatised, the user will be given the ability to search more in depth regarding information of a specific developer of the project or other projects that the developer is doing.

```

Enter choice:
(1)for user information
(2)for the projects he is doing
Your Choice: 2
Enter the user to see his repository:
cdetrio
No      Repo      Url
0      0      sig-verify-ts\nPublic      https://github.com//cdetrio/sig-verify-ts
1      1      tor-node-map\nPublic\n\n\n      Forked fro...      https://github.com//jordan-wright/tormap
2      2      go-ethereum\nPublic\n\n\n      Forked from...      https://github.com//ethereum/go-ethereum
3      3      uint256\nPublic\n\n\n      Forked from hol...      https://github.com//holiman/uint256
4      4      evm384_f6m_mul\nPublic\n\n\n      Forked f...      https://github.com//ewasm/evm384_f6m_mul
5      5      evmone\nPublic\n\n\n      Forked from ethe...      https://github.com//ethereum/evmone
6      6      scout.ts\nPublic\n\n\n      Forked from ew...      https://github.com//ewasm/scout.ts
7      7      eip1962-bls12-381-bench\nPublic\n\n\n      ...      https://github.com//ewasm-benchmarking/eip1962...
8      8      scout_wasmr.c\nPublic\n\n\n      Forked fro...      https://github.com//ewasm-benchmarking/scout_w...
9      9      wabt\nPublic\n\n\n      Forked from WebAss...      https://github.com//WebAssembly/wabt
10     10     wasmsnark\nPublic\n\n\n      Forked from i...      https://github.com//iden3/wasmsnark
11     11     scout\nPublic\n\n\n      Forked from ewasm...      https://github.com//ewasm/scout
12     12     wasmi\nPublic\n\n\n      Forked from parit...      https://github.com//paritytech/wasmi
13     13     scout.cpp\nPublic\n\n\n      Forked from j...      https://github.com//jwasinger/scout.cpp
14     14     rollup.rs\nPublic\n\n\n      Forked from j...      https://github.com//jwasinger/rollup.rs
15     15     bn\nPublic\n\n\n      Forked from parityte...      https://github.com//paritytech/bn
16     16     C_ewasm_contracts\nPublic\n\n\n      ...      https://github.com//poemmm/C_ewasm_contracts
17     17     daiquiri\nPublic\n\n\n      Forked from jw...      https://github.com//jwasinger/daiquiri
18     18     benchmarking-wasm-ewasm-evm\nPublic\n\n\n      ...      https://github.com//fluencelabs/fluence
19     19     py_ecc\nPublic\n\n\n      Forked from ethe...      https://github.com//ethereum/py_ecc
20     20     multiproof-rs\nPublic\n\n\n      Forked fr...      https://github.com//gballet/multiproof-rs
21     21     tiny-keccak\nPublic\n\n\n      Forked from...      https://github.com//debris/tiny-keccak
22     22     assemblyscript\nPublic\n\n\n      Forked f...      https://github.com//AssemblyScript/assemblyscript
23     23     assemblyscript-rlp\nPublic\n\n\n      Fork...      https://github.com//nearprotocol/assemblyscrip...
24     24     lighthouse\nPublic\n\n\n      Forked from ...      https://github.com//lightclient/lighthouse
25     25     smptvbas\nPublic      https://github.com//cdetrio/smptvbas
26     26     py-ssz\nPublic\n\n\n      Forked from ethe...      https://github.com//ethereum/py-ssz
27     27     cdetrio.github.io\nPublic      https://github.com//cdetrio/cdetrio.github.io
28     28     trie\nPublic\n\n\n      Forked from parity...      https://github.com//paritytech/trie
29     29     eip1829\nPublic\n\n\n      Forked from mat...      https://github.com//matter-labs/eip1962
Enter choice:
1)Find more information about user
2)Search another coin
3)Exit the program.

```

9b) An example of the developer “cdetrio” other repository that he or she has worked on. This gives the user a gauge on the developer’s legitimacy and skills. A good developer tends to have a history of repositories he or she has worked on, showcasing their competency and skills. This also allows the user to see if the developer has worked on other good or successful crypto projects hence giving the current project that the developer is working on more legitimacy.

```

Enter choice:
1)Find more information about user
2)Search another coin
3)Exit the program.
Your Choice: 1
=====This process will take awhile=====
[*] Checking username cdetrio on:
[+] Docker Hub: https://hub.docker.com/u/cdetrio/
[+] GitHub: https://www.github.com/cdetrio
[+] GitLab: https://gitlab.com/cdetrio
[+] HackerNews: https://news.ycombinator.com/user?id=cdetrio
[+] ICQ: https://icq.im/cdetrio
[+] Instagram: https://www.instagram.com/cdetrio
[+] Keybase: https://keybase.io/cdetrio
[+] Medium: https://medium.com/@cdetrio
[+] Periscope: https://www.periscope.tv/cdetrio/
[+] Pinterest: https://www.pinterest.com/cdetrio/
[+] Reddit: https://www.reddit.com/user/cdetrio
[+] Scribd: https://www.scribd.com/cdetrio
[+] Telegram: https://t.me/cdetrio
[+] Twitter: https://twitter.com/cdetrio
[+] Venmo: https://venmo.com/u/cdetrio
[+] Wikipedia: https://www.wikipedia.org/wiki/User:cdetrio
[+] couchsurfing: https://www.couchsurfing.com/people/cdetrio
[+] mastodon.social: https://mastodon.social/@cdetrio
[+] npm: https://www.npmjs.com/~cdetrio

```

9c) This showcases another tool our software provides which allows the user to see the developer's related information. This allows the user to do more background checking of the project's developer which could affect the success of the crypto project. For example if a developer has some shady comments or activity seen on a social platform that indicated that he or she has partaken in an organized pump and dump or rug pulls this could indicate the current project he or she is working on might be a scam/ rug pull project.