



INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

Cryptocurrency Analysis

About me

Name : Vidya Jadhav

- **Education : BE (Electronics and Communication)**
- **Why Data Science? :**
 - In this field there are variety of skills is included
 - It opens door for every domain
 - In every project you will face new challenges
 - Research and development

Agenda

- **Problem statement**
- **What is Cryptocurrency?**
- **Selected Currencies for analysis**
- **Web Scraping**
 - Why web scraping is important?
 - Websites
 - Library Used
 - Data Cleaning
 - Final Dataset Summary
- **Exploratory Data Analysis**
 - Univariate Analysis
 - Bivariate Analysis
 - Multivariate Analysis
- **Conclusion**

Problem Statement

**Exploring different currencies and analyzing how efficient they are
Comparing their prices with Bitcoin and Ethereum**

What is Cryptocurrency

- Any form of currency that is available virtually or digitally
- Satoshi Nakamoto introduced world first bitcoin on paper in a 2008 paper
- We can use cryptocurrencies to buy goods, gift cards, pay bills, make a donation and exchange it into cards
- Pros :
 - No Bank Fees
 - Anonymity
 - Accessibility



Selected Currencies for Analysis

- **Bitcoin**
- **Ethereum**
- **Wrapped Bitcoin**
- **Lido Staked Ethereum**
- **Bitcoin Binance Chain Evolution Proposal 2(BEP2)**
- **Huobi Bitcoin**
- **yearn.finance**
- **Tether Gold**
- **renBTC**

Website :

Web Scrapping

Library Used :

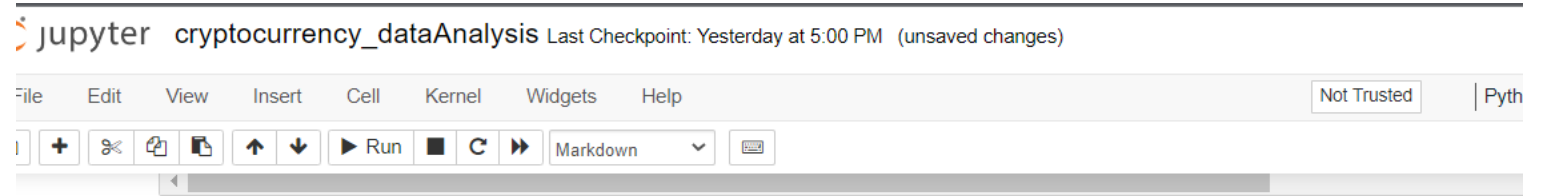
- requests
- BeautifulSoup
- pandas
- numpy
- matplotlib
- seaborn

Web Scrapping

Data Cleaning :

Raw Data :

- Date Column
- Comma
- Data type



DataFrame creation

```
In [4]: data = pd.DataFrame({'Name':name, 'Date':date, 'Open':Open, 'High':high, 'Low':low, 'Close':close, 'Adj_Close':adj_close, 'Volume':volume})
```

Out[4]:

	Name	Date	Open	High	Low	Close	Adj_Close	Volume
0	Bitcoin USD (BTC-USD)	Oct 10, 2022	19,446.42	19,889.15	18,319.82	19,067.63	19,067.63	179,951,161,793
1	Bitcoin USD (BTC-USD)	Oct 03, 2022	19,044.07	20,408.39	19,025.23	19,446.43	19,446.43	196,809,212,801
2	Bitcoin USD (BTC-USD)	Sep 26, 2022	18,803.90	20,338.46	18,553.30	19,044.11	19,044.11	280,290,121,527
3	Bitcoin USD (BTC-USD)	Sep 19, 2022	19,418.57	19,674.63	18,290.31	18,802.10	18,802.10	252,873,598,365
4	Bitcoin USD (BTC-USD)	Sep 12, 2022	21,770.15	22,673.82	19,387.49	19,419.51	19,419.51	261,900,187,496
...
890	renBTC USD (RENBTC-USD)	Dec 14, 2020	19,169.22	24,188.72	19,025.91	23,452.34	23,452.34	49,721,618
891	renBTC USD (RENBTC-USD)	Dec 07, 2020	19,359.13	19,400.02	17,625.54	19,158.75	19,158.75	55,816,025
892	renBTC USD (RENBTC-USD)	Nov 30, 2020	18,097.56	19,823.26	17,805.88	19,341.09	19,341.09	31,720,929
893	renBTC USD (RENBTC-USD)	Nov 23, 2020	18,118.62	19,278.34	16,338.98	18,083.50	18,083.50	4,678,852
894	renBTC USD (RENBTC-USD)	Nov 16, 2020	15,747.46	19,378.06	15,589.11	18,119.96	18,119.96	3,801,162

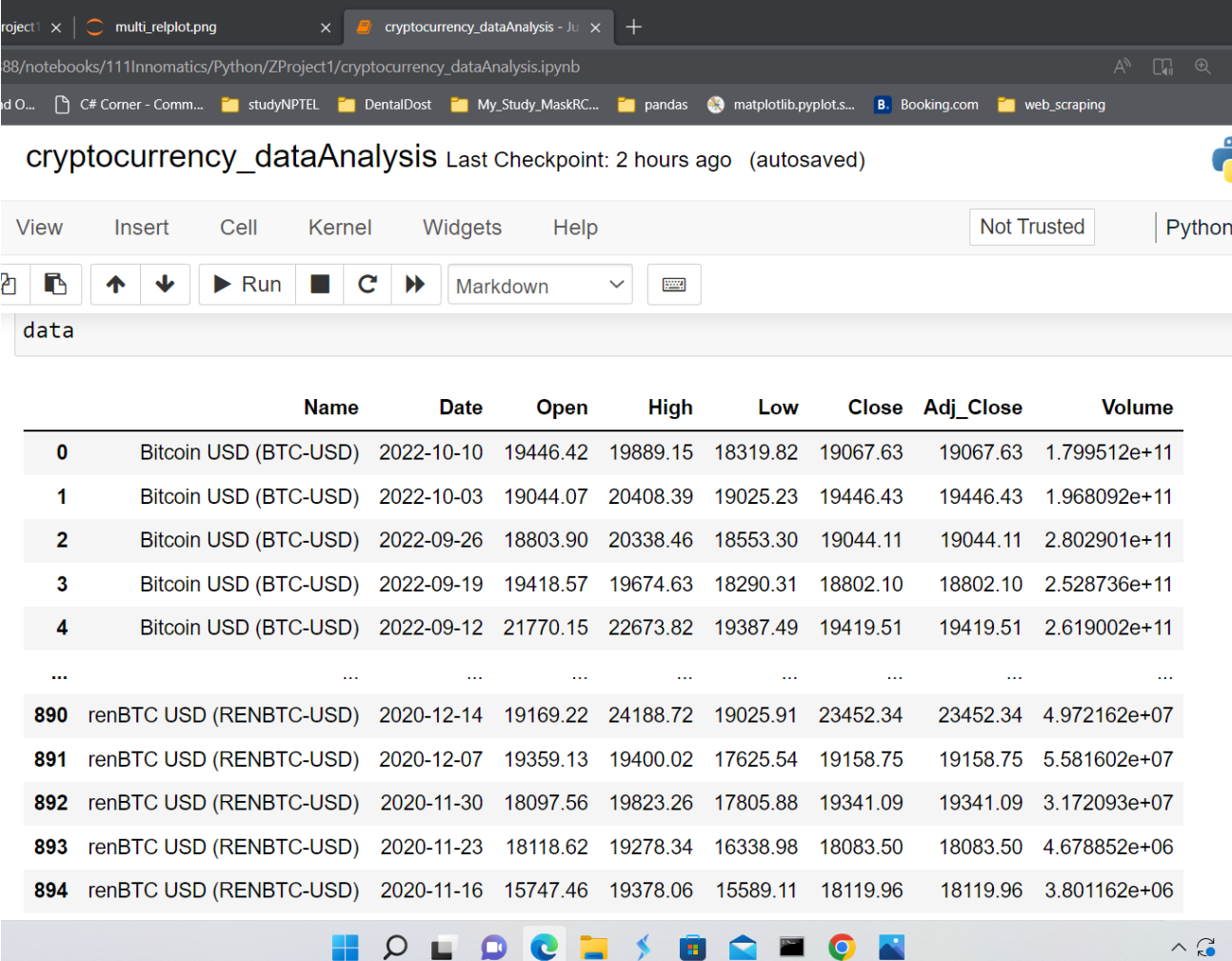
895 rows × 8 columns

Web Scrapping

Data Cleaning :

Final Data Summary

- Shape 895X8
- Column description



The screenshot shows a Jupyter Notebook window titled "cryptocurrency_dataAnalysis - Ju...". The notebook is open to a cell containing the variable "data". The data is displayed as a table with 9 columns: Name, Date, Open, High, Low, Close, Adj_Close, and Volume. The table contains data for Bitcoin USD (BTC-USD) and renBTC USD (RENBTC-USD) from 2020 to 2022.

	Name	Date	Open	High	Low	Close	Adj_Close	Volume
0	Bitcoin USD (BTC-USD)	2022-10-10	19446.42	19889.15	18319.82	19067.63	19067.63	1.799512e+11
1	Bitcoin USD (BTC-USD)	2022-10-03	19044.07	20408.39	19025.23	19446.43	19446.43	1.968092e+11
2	Bitcoin USD (BTC-USD)	2022-09-26	18803.90	20338.46	18553.30	19044.11	19044.11	2.802901e+11
3	Bitcoin USD (BTC-USD)	2022-09-19	19418.57	19674.63	18290.31	18802.10	18802.10	2.528736e+11
4	Bitcoin USD (BTC-USD)	2022-09-12	21770.15	22673.82	19387.49	19419.51	19419.51	2.619002e+11
...
890	renBTC USD (RENBTC-USD)	2020-12-14	19169.22	24188.72	19025.91	23452.34	23452.34	4.972162e+07
891	renBTC USD (RENBTC-USD)	2020-12-07	19359.13	19400.02	17625.54	19158.75	19158.75	5.581602e+07
892	renBTC USD (RENBTC-USD)	2020-11-30	18097.56	19823.26	17805.88	19341.09	19341.09	3.172093e+07
893	renBTC USD (RENBTC-USD)	2020-11-23	18118.62	19278.34	16338.98	18083.50	18083.50	4.678852e+06
894	renBTC USD (RENBTC-USD)	2020-11-16	15747.46	19378.06	15589.11	18119.96	18119.96	3.801162e+06

Exploratory Data Analysis (EDA)

- **Definition :**

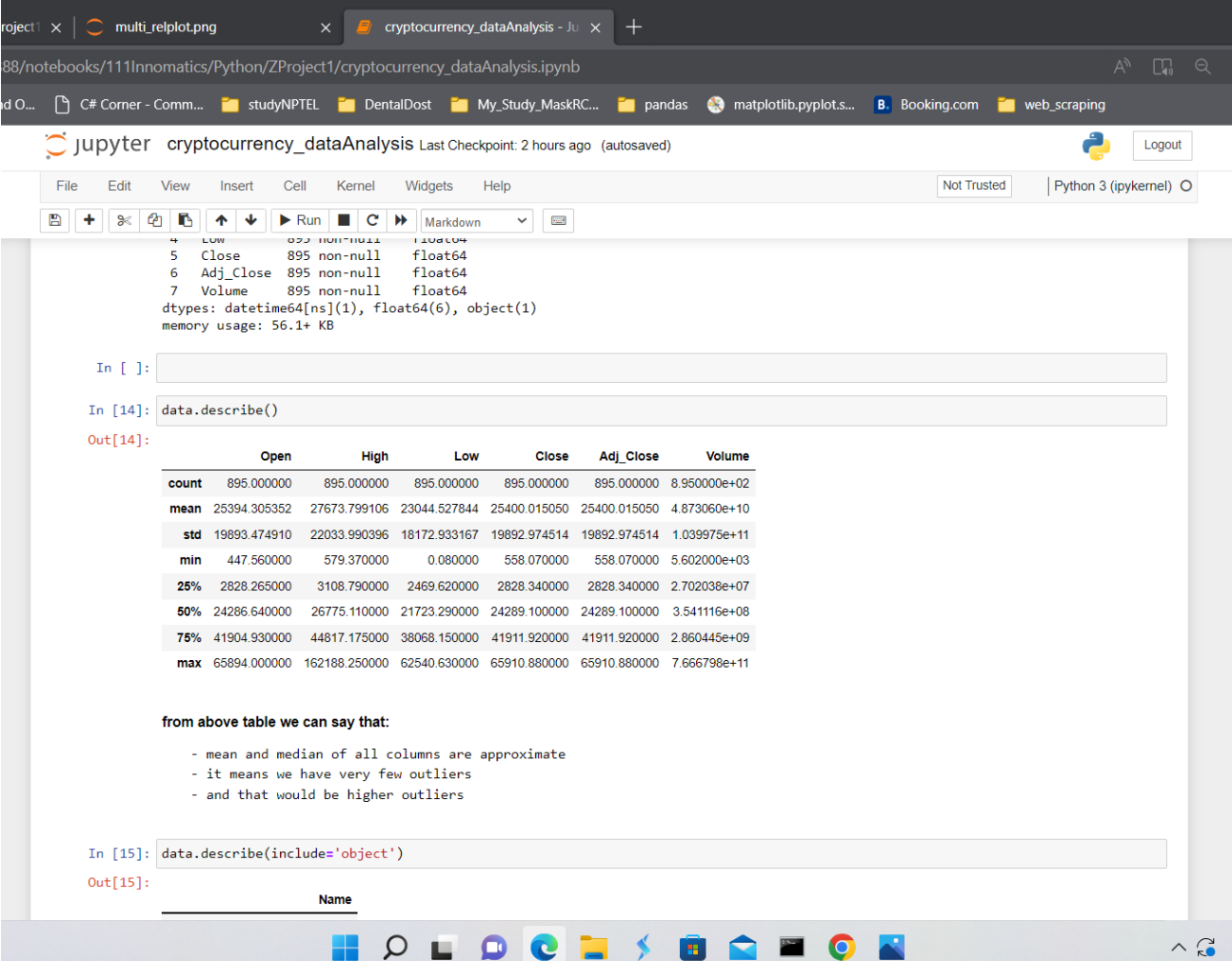
an approach to analyse the data using statistical and graphical techniques

- **Types :**

- Univariate Analysis
- Bivariate Analysis
- Multivariate Analysis

Univariate Analysis

- Higher outliers are present
- Standard Deviation is high so data spread out is more
- Mean and median
- Higher outliers present in High and Volume column



The screenshot shows a Jupyter Notebook titled 'cryptocurrency_dataAnalysis'. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help), a toolbar with icons for file operations and execution, and a code editor. The code editor contains the following content:

```
In [ ]:
```

```
In [14]: data.describe()
```

```
Out[14]:
```

	Open	High	Low	Close	Adj_Close	Volume
count	895.000000	895.000000	895.000000	895.000000	895.000000	8.950000e+02
mean	25394.305352	27673.799106	23044.527844	25400.015050	25400.015050	4.873060e+10
std	19893.474910	22033.990396	18172.933167	19892.974514	19892.974514	1.039975e+11
min	447.560000	579.370000	0.080000	558.070000	558.070000	5.602000e+03
25%	2828.265000	3108.790000	2469.620000	2828.340000	2828.340000	2.702038e+07
50%	24286.640000	26775.110000	21723.290000	24289.100000	24289.100000	3.541116e+08
75%	41904.930000	44817.175000	38068.150000	41911.920000	41911.920000	2.860445e+09
max	65894.000000	162188.250000	62540.630000	65910.880000	65910.880000	7.666798e+11

from above table we can say that:

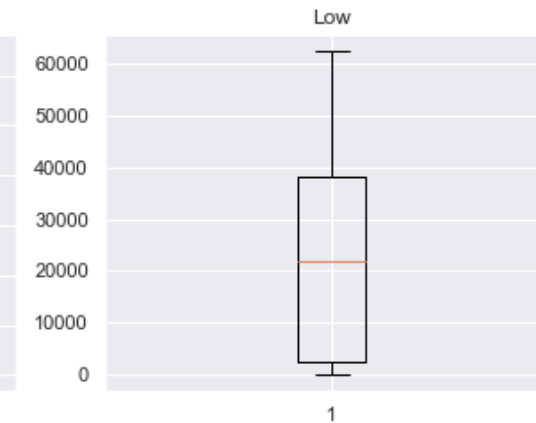
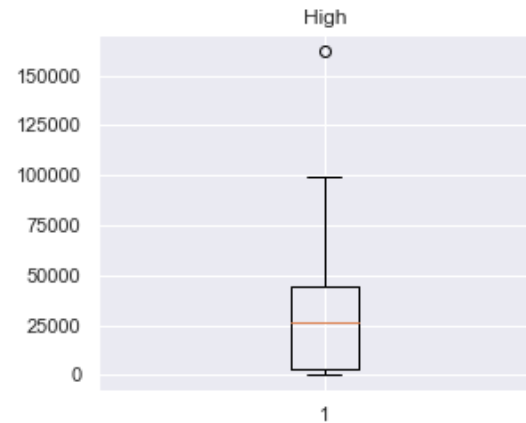
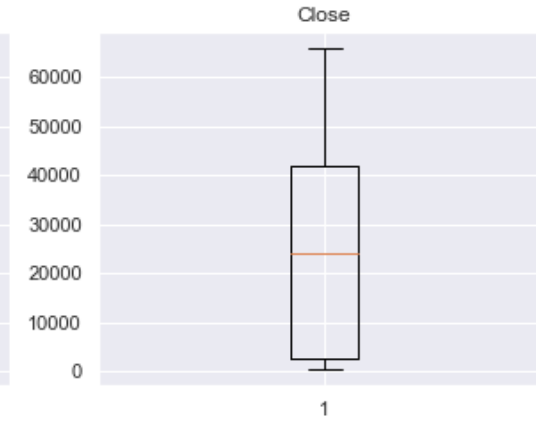
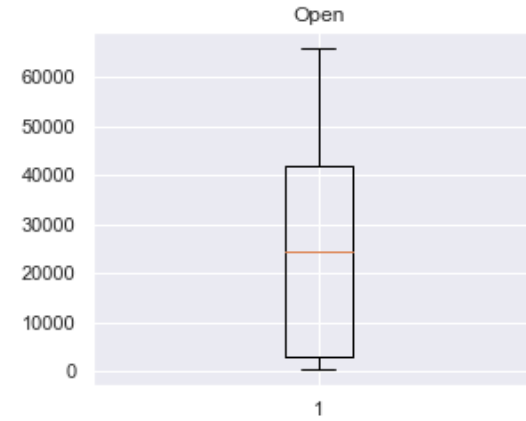
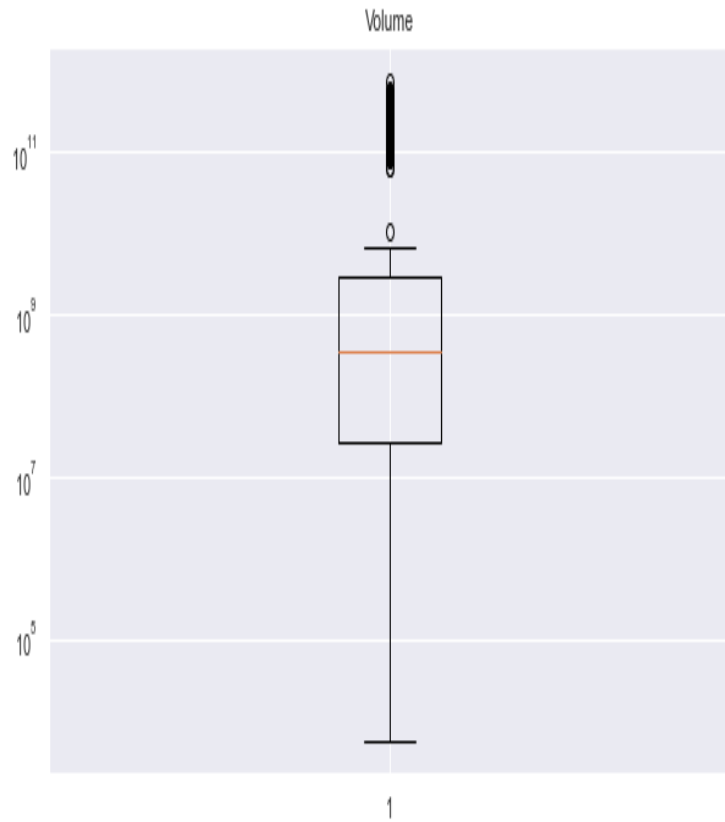
- mean and median of all columns are approximate
- it means we have very few outliers
- and that would be higher outliers

```
In [15]: data.describe(include='object')
```

```
Out[15]:
```

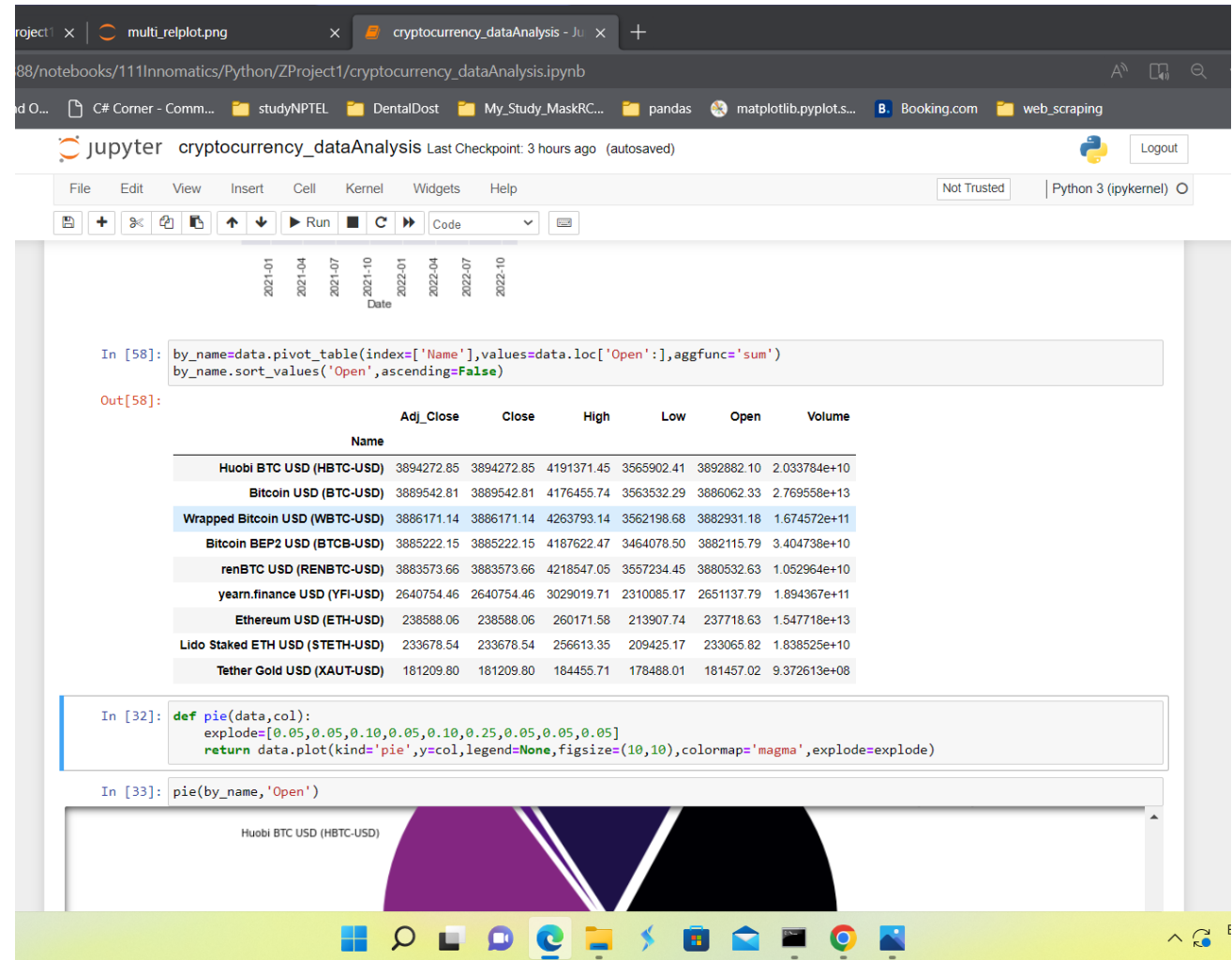
Name

Univariate Analysis



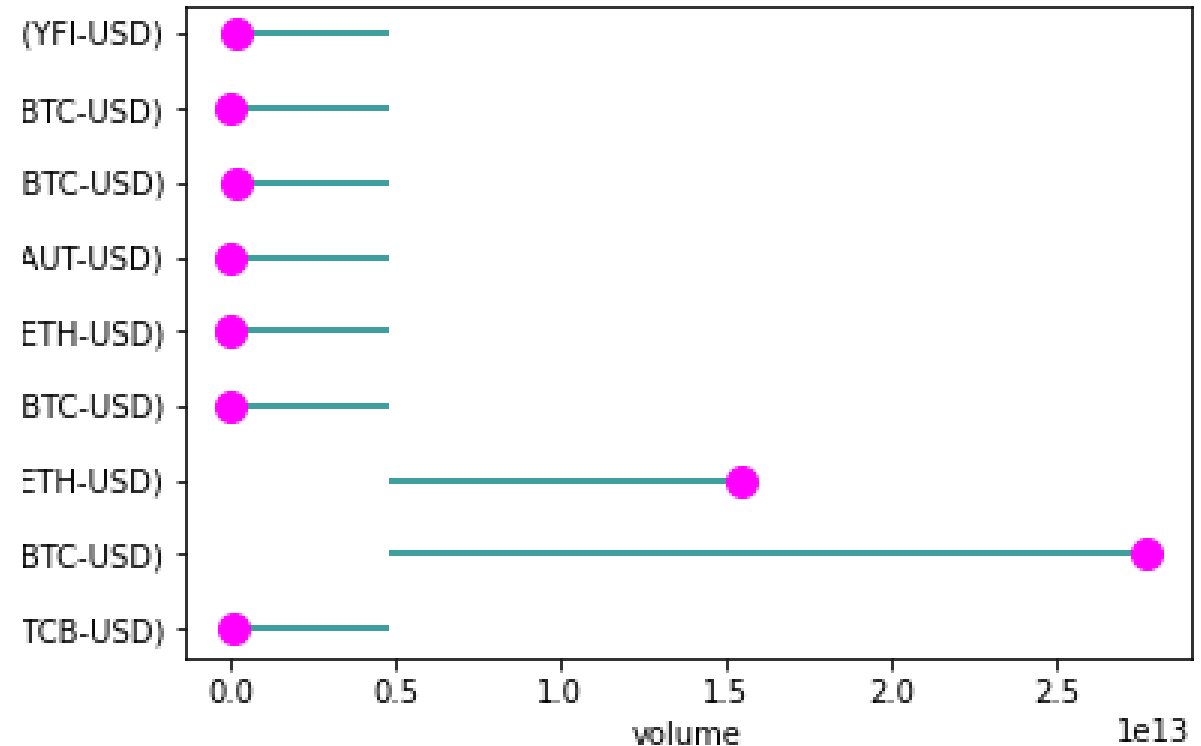
Bivariate Analysis

- There are 5 coins having open price above 35000\$
- Tether Gold price is less than 2000\$
- Most trading is happened in Bitcoin and Ethereum



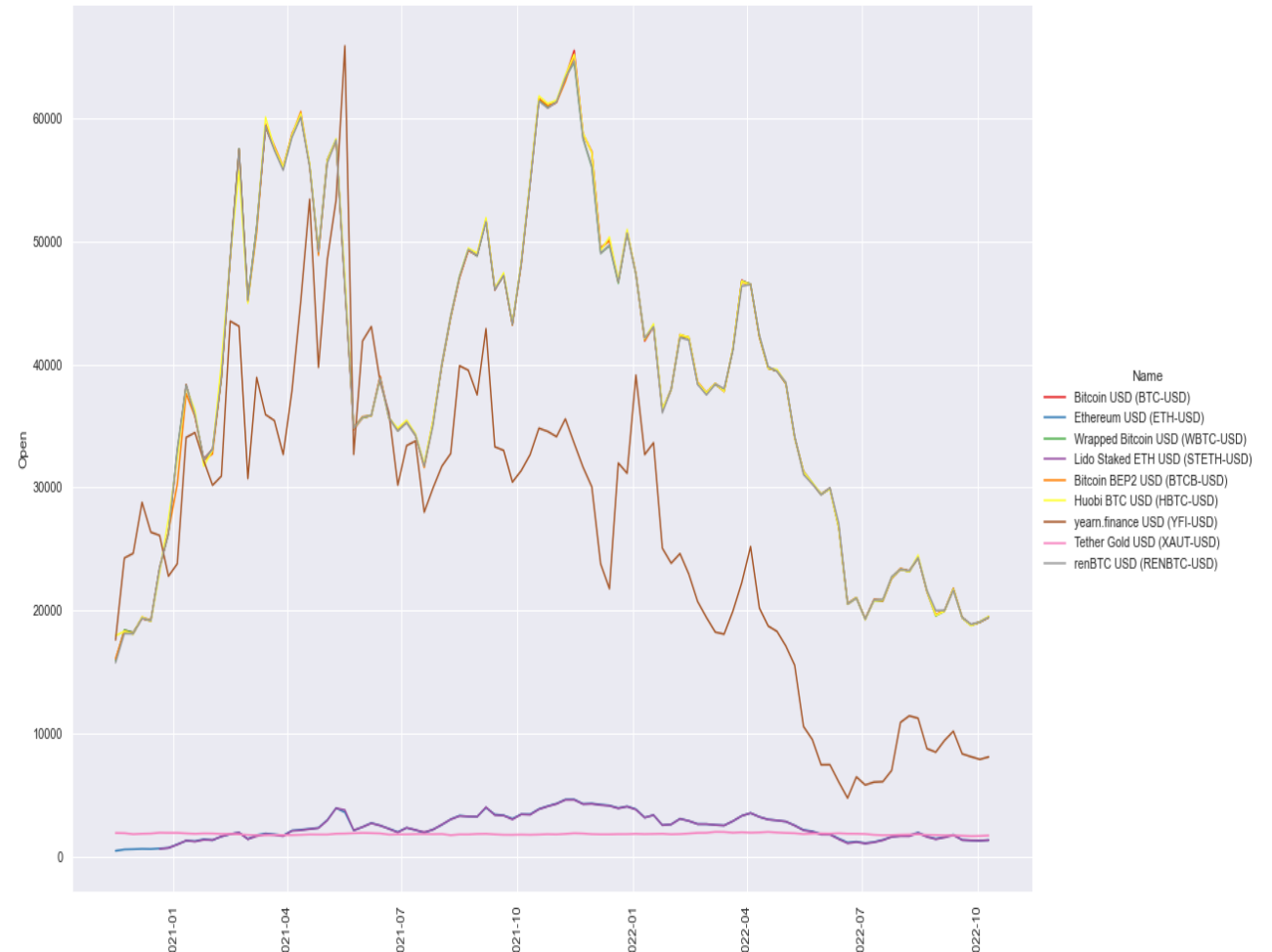
Bivariate Analysis

- We can observe that Bitcoin and Ethereum are the most famous coins for trading



Multivariate Analysis

- Here we are observing open prices for each coin over the time period of November 2020 to October 2022
- Volatile nature and Non volatile nature
- Coins lies under volatile nature
- Coins lies under non volatile nature



Conclusion

- Ethereum, Lido and Tether Gold are non-volatile coins
- If you are interested in stable and safe investments then you should prefer non-volatile coins.
- We can observe that renBTC and Huobi are also good investments
- You should keep patience when you are investing volatile coins

THANK
YOU

