

CRYPTO CURRENCY ANALYSIS DASHBOARD

A PROJECT REPORT

Submitted by

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for

20ADC33 DATA ANALYSIS

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EXAMINER I

EXAMINER II

ABSTRACT

Cryptocurrency payments only exist as digital entries and cannot be carried around or exchanged as physical currency. Cryptocurrency is a category of digital assets that may be bought, sold, or traded safely and was developed using cryptographic methods. The fact that all of its transactions are securely encrypted and the exchanges are extremely secure is implied by the name. It is a form of digital payment that doesn't rely on banks to confirm transactions. Future of cryptocurrency. Along with the financial industries, it is also causing disruption in other industries including information technology, healthcare, retail, travel and tourism, and many more. Understanding bitcoin trading can be aided by taking into account basic stock market trading techniques. Trading involves buying and selling goods, and trading in cryptocurrencies is doing both while utilising a cryptocurrency trading platform. Blockchain is a popular technology for managing and storing transactions in cryptocurrency.

For cash outing a crypto, need to sell the cryptocurrency for cash and then can either transfer the cash to bank or buy more cryptocurrency. The IRS classifies cryptocurrency as a type of property. If received Bitcoin as payment then need to pay income taxes on its current value. If sold the cryptocurrency for profit then taxes on the difference between purchase price and sales price have to be paid. According to the stats, there were 13,669 cryptocurrencies as of late 2021. Out of this, Bitcoin has the largest share in terms of market capitalisation, amounting to about \$650 billion. The top 4 cryptocurrencies after Bitcoin, based on their market capitalization, or the total value of all of the coins currently in circulation are Ethereum, Tether, Binance Coin, XRP. Analysis is made on those 4 coins to know about its market capitalisation and other factors.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The cryptocurrency is the foundation for the dashboard that has been created and the whole analysis. The majority of cryptocurrencies are decentralised, blockchain-based networks, a public database run by a distributed computing network. One distinctive feature of cryptocurrencies is that, in most cases, no central authority distributes them. The phrase "crypto-currency" comes from the network security techniques that involve encryption. People are drawn to cryptocurrencies for a variety of reasons, such as their usage in illegal activities, fluctuating exchange rates, and the network flows that support them. Additionally, their portability, accountability, and divisibility were complimented. Almost always, cryptocurrencies are designed to be unaffected by and unregulated by the government. Although trading in cryptocurrencies differs from trading on the stock market, some stock market trading techniques can be used to understand cryptocurrency trading. Trading involves buying and selling goods, and trading in cryptocurrencies is doing both while utilising a cryptocurrency trading platform.

1.2 DATA COLLECTION

First have to collect and aggregate the data in the particular industry where established an objective. Data collection is the process of compiling and analysing precise data from different sources to identify solutions to issues, patterns, and probabilities, among other things, to assess potential outcomes. Choosing the type of data needed—quantitative (numeric) or qualitative (descriptive), such as customer reviews—is a crucial first step. Data can be collected from internal and external sources. Internal sources like databases and systems, marketing automation, etc, whereas external sources like census bureaus, google trends, amazon API, global finance data, etc. Data collected here is an external data collected from Kaggle.

- DATASET:

In the world, there are many different cryptocurrencies. According to market capitalization, which measures the combined worth of all coins currently in circulation, Ethereum, Tether, Binance Coin, and XRP are the top 4 cryptocurrencies after Bitcoin. Each currency has its own csv file in the dataset. Daily price history is accessible as of April 28, 2013. The historical price data for the top cryptocurrencies by market capitalization can be found in this dataset.

<https://www.kaggle.com/datasets/sudalairajkumar/cryptocurrencypricehistoy>

✓ Source: www.kaggle.com

In the world, there are many different cryptocurrencies. According to market capitalization, which measures the combined worth of all coins currently in circulation, Ethereum, Tether, Binance Coin, and XRP are the top 4 cryptocurrencies after Bitcoin. Each currency has its own csv file in the dataset. Daily price history is accessible as of April 28, 2013. The historical price data for the top cryptocurrencies by market capitalization can be found in this dataset.

The variables in the data set are “S No” serial number, “Name” name of the cryptocurrency, “Symbol” symbol of the cryptocurrency, “Date” date of observation, “Open” Opening price on the given day, “High” Highest price on the given day, “Low” Lowest price on the given day, “Close” Closing price on the given day, “Volume” Volume of transactions on the given day, “Market Cap” Market capitalization in USD.

1.3 PROBLEM STATEMENT

Cryptocurrency is a category of digital assets that may be bought, sold, or traded safely and was developed using cryptographic methods. Needed a cryptocurrency wallet in order to use cryptocurrencies. It is a form of digital payment that doesn't rely on banks to confirm transactions. As of the end of 2021, there were 13,669 cryptocurrencies, according to Coin market cap. People struggle to pick the best cryptocurrency to invest their money in because there are thousands of different cryptocurrencies in existence. According to market capitalization, which measures the combined value of all coins in circulation, the top 5 cryptocurrencies are: Bitcoin (BTC), Ethereum (ETH), Tether (USDT), Binance Coin (BNB), and XRP (XRP). Even after listing the top 5 among 14,000 cryptocurrencies, it is hard to choose the right one, the coin which can be trusted. Many people have lost their investments by choosing the cryptocurrencies to invest in a wrong way.

Many people lose their investment by choosing untrusted cryptocurrencies. Normally people store their cryptocurrencies on their crypto wallet files on their computers. Therefore, they can be stolen if there is no proper security. Since cryptocurrency investment includes real time money, profit, loss, at first a better analysed overview of all those cryptocurrencies are required for every customer for choosing among those coins. Cryptocurrency which is highly trusted by the people over the past years and with high security should be chosen by all the customers. For this analysis past data's about the cryptocurrencies will be useful.

1.4 BUSINESS OBJECTIVE

1. To compare and analyze which coin has better performance among the 4 cryptocurrency coins.
2. To find the best coin to invest for according to the past data's.
3. To analyze the role played by month of the year in profit and loss in the cryptocurrency investment.
4. To analyze the deviation between opening value and closing value of a day.

CHAPTER 2

DATA PREPARATION AND MODELLING

2.1 DATA PREPARATION

Data collection, combination, structure, and organisation are all steps in the process of preparing data for use in business intelligence (BI), analytics, and data visualisation applications. Pre-processing, profiling, cleaning, validating, and transforming data are all parts of data preparation. Additionally, combining data from several internal systems and outside sources is frequently required. Additionally, self-service data preparation technologies are being used by business users, data scientists, data engineers, and other data analysts more and more.

- DATA COLLECTION

Data scientists, BI team members, other data experts, and end users who acquire data should check that it fits well with the goals of the anticipated analytics applications during this step. Open Power BI and click “Get data” from the home tab and select the data downloaded and a pop up is shown. Click “Load” to load the Tether table data into Power BI. Similarly, repeat this process for other tables Binance coin table, Ethereum table, XRP table, After loading all the tables in Power BI can see the tables in the “Fields” tab as shown in FIG 2.1.

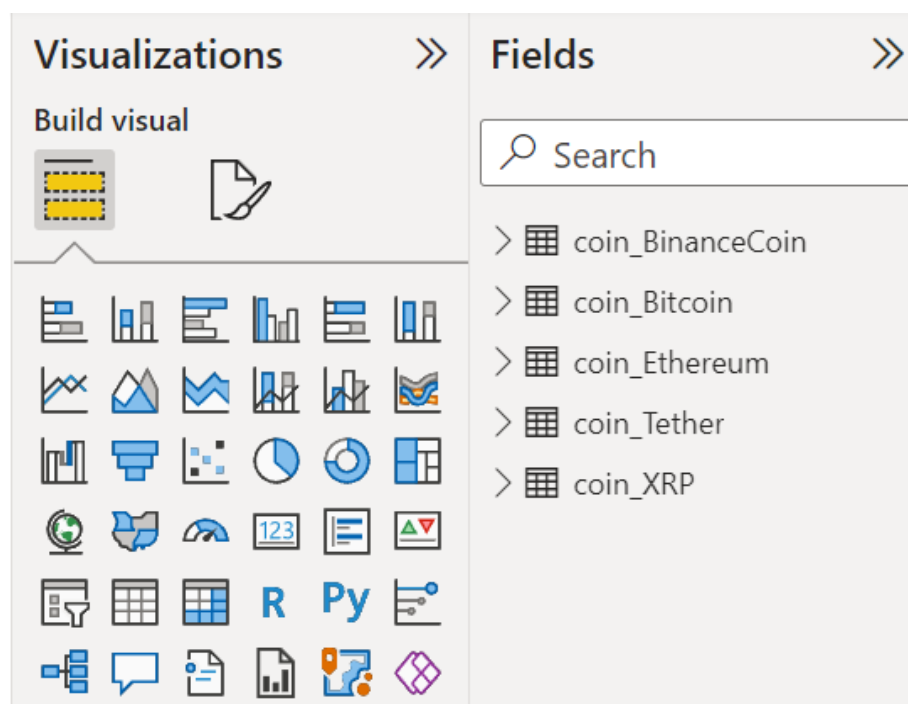


Figure 2.1 Loading data

- DATA DISCOVERY AND PROFILING

Data exploration and profiling are used to better comprehend the obtained data for the aim, what it contains, and what preparations are required. Data profiling can assist with this by locating patterns, correlations, and other qualities in the data, as well as discrepancies, abnormalities, missing numbers, and other problems, so they can be fixed. After loading the data, Click on each table in the field tab on the right side to see the attributes of each table. Click on the table to see the attribute on “Field” tab and it will open a section as shown in the FIG 2.2. similarly can see the attributes of all other table which is included in the dataset. The dataset have all the tables which has same 10 attributes.

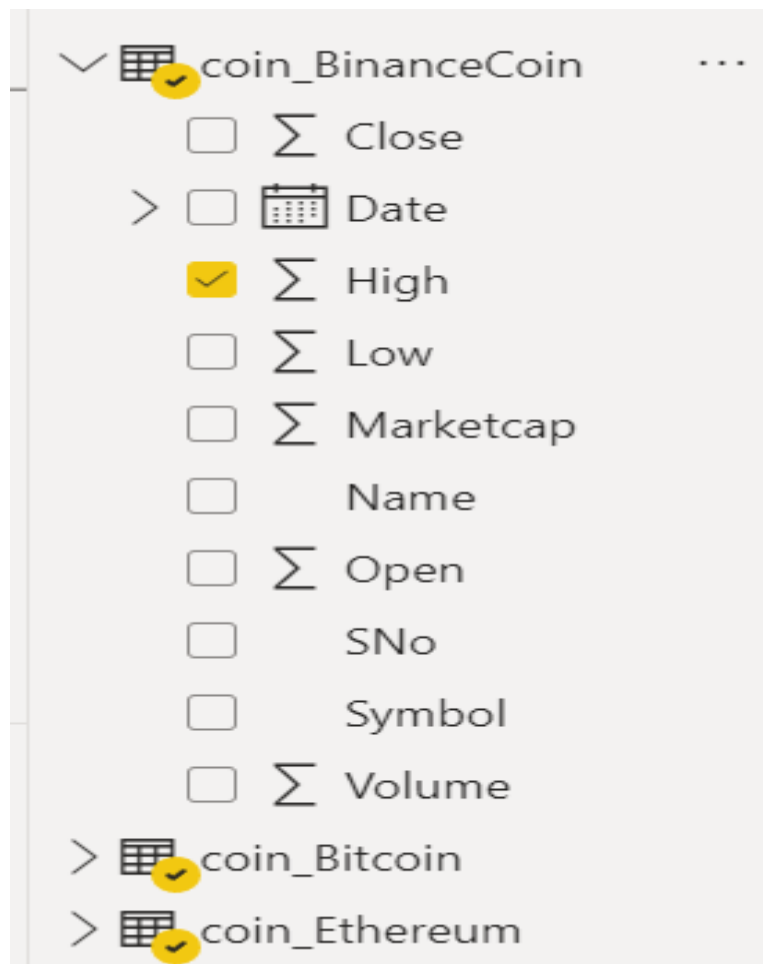


Figure 2.2 Data discovery

- DATA STRUCTURING

Data structuring combines data management, organisation, retrieval, and storage into a single format that enables quick access and alteration. The data must now be categorised and transformed into a model to satisfy the criteria of analytics. For instance, to make data available to BI and analytics tools, information must be transformed from comma-separated values (CSV) files or other file formats into tables. The table view of table is displayed by clicking "Data" on the left side below the "Report" view, as shown in FIG. 2.3, as have already loaded data into Power BI, which implicitly turned ".csv" into a table.

SNo	Name	Symbol	Date	High	Low	Open	Close	Volume	Marketcap
1	Binance Coin	BNB	26-07-2017 23:59:59	0.109012998640537	0.0992655009031296	0.10589300096035	0.105137996375561	200395	10513800
2	Binance Coin	BNB	27-07-2017 23:59:59	0.108479000627995	0.10088799893856	0.105108000338078	0.107736997306347	344499	10773700
3	Binance Coin	BNB	28-07-2017 23:59:59	0.109018996357918	0.10147300362587	0.107632003724575	0.104066997766495	342568	10406700
4	Binance Coin	BNB	29-07-2017 23:59:59	0.111263997852802	0.101107999662426	0.104782000184059	0.107810996472836	340218	10781100
5	Binance Coin	BNB	30-07-2017 23:59:59	0.108138002455235	0.103161998093128	0.10793499648571	0.106413997709751	224261	10641400
6	Binance Coin	BNB	31-07-2017 23:59:59	0.108349002897739	0.101599998772144	0.1068279966712	0.104249998927116	240309	10425000
7	Binance Coin	BNB	01-08-2017 23:59:59	0.106265999376774	0.0961093977093697	0.104594998061657	0.099866800102043	300413	9986680
8	Binance Coin	BNB	02-08-2017 23:59:59	0.101210996508598	0.0973611995577812	0.0997212007641792	0.100451998412609	256793	10045200
9	Binance Coin	BNB	03-08-2017 23:59:59	0.106977999210358	0.0991197004914284	0.100327998399734	0.106642000377178	293008	10664200
10	Binance Coin	BNB	04-08-2017 23:59:59	0.107755996288869	0.102698996663094	0.106684997677803	0.107493996620178	287621	10749400
11	Binance Coin	BNB	05-08-2017 23:59:59	0.144653007388115	0.107069998979568	0.10741800069809	0.128870993852615	542878	12887100
12	Binance Coin	BNB	06-08-2017 23:59:59	0.132988005876541	0.12737999856472	0.129292994737625	0.130998998880386	393681	13099900
13	Binance Coin	BNB	07-08-2017 23:59:59	0.149764999747276	0.133300006389618	0.133957996664455	0.148847997188568	748177	14884800
14	Binance Coin	BNB	08-08-2017 23:59:59	0.226925000548363	0.14776599407196	0.14898007178307	0.224420994520187	2617340	22442100
15	Binance Coin	BNB	09-08-2017 23:59:59	0.260625004768372	0.222157999873161	0.224748000502586	0.242911994457245	3075320	24291200
16	Binance Coin	BNB	10-08-2017 23:59:59	0.349976003170013	0.245051994919777	0.251827001571655	0.349079012870789	4118070	34907900
17	Binance Coin	BNB	11-08-2017 23:59:59	0.4096539914608	0.31106698513031	0.348785012960434	0.392571985721588	4413920	39257200
18	Binance Coin	BNB	12-08-2017 23:59:59	0.475991994142532	0.337588995695114	0.392192989587784	0.446364998817444	5080760	44636500
19	Binance Coin	BNB	13-08-2017 23:59:59	1.02263998985291	0.445989996194839	0.445989996194839	0.876828014850616	13852100	87682800
20	Binance Coin	BNB	14-08-2017 23:59:59	1.46338999271393	0.735764026641846	0.872918009757996	1.29557001590729	51698100	129557000
21	Binance Coin	BNB	15-08-2017 23:59:59	1.3789199590683	0.923371970653534	1.32709002494812	1.05655002593994	19824400	105655000
22	Binance Coin	BNB	16-08-2017 23:59:59	1.4527200460434	1.07869005203247	1.11968994140625	1.43724000453949	31363100	143724000
23	Binance Coin	BNB	17-08-2017 23:59:59	2.11131000518799	1.32363998889923	1.43696999549866	1.96714997291565	61296500	196715000

Figure 2.3 Data view

- DATA CLEANSING

One of the most crucial steps for an organisation to develop a culture around sound data decision-making is data cleaning, also known as data cleansing and data scrubbing. The practise of correcting or deleting inaccurate, damaged, improperly formatted, duplicate, or incomplete data from a dataset is known as data cleaning. There are numerous ways to clean up data; in this case, cleaning the data is accomplished by selecting the transform the data option as illustrated in FIG. 2.4.

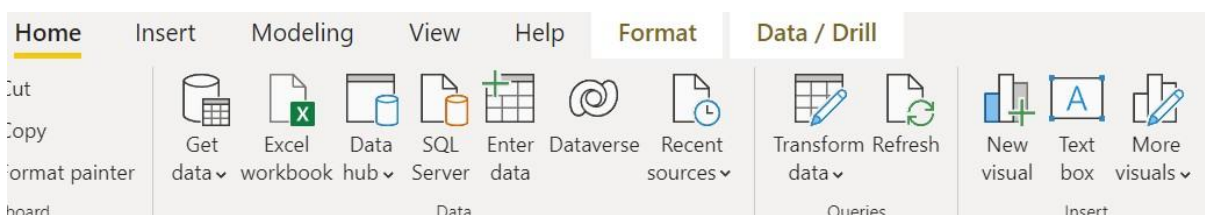


Figure 2.4 Transform data

Removing the empty rows on all the columns is an important step as the empty rows can lead to wrong analysis of the data hence for removing the empty rows click on the column in which have to remove the empty row and then right click on the column and can see the “Remove Empty” option which will remove those empty rows in the subsequent rows as shown in the FIG 2.5. After removing the empty rows and completing all other transformations required for the dataset for all the tables, now can click the top right most option “Close and Apply” as shown in the FIG 2.6 which will apply all those transformation done on the dataset.

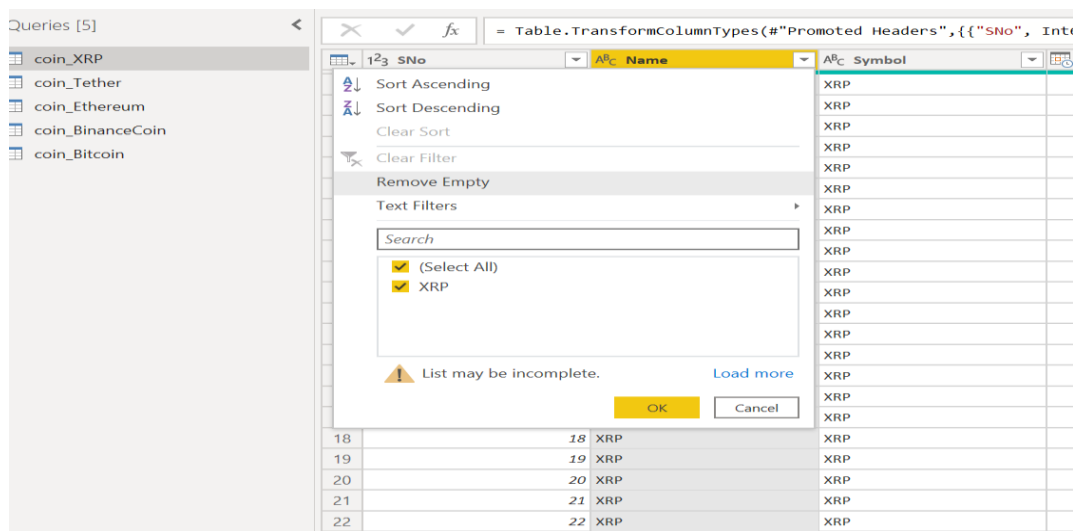


Figure 2.5 Removing empty columns

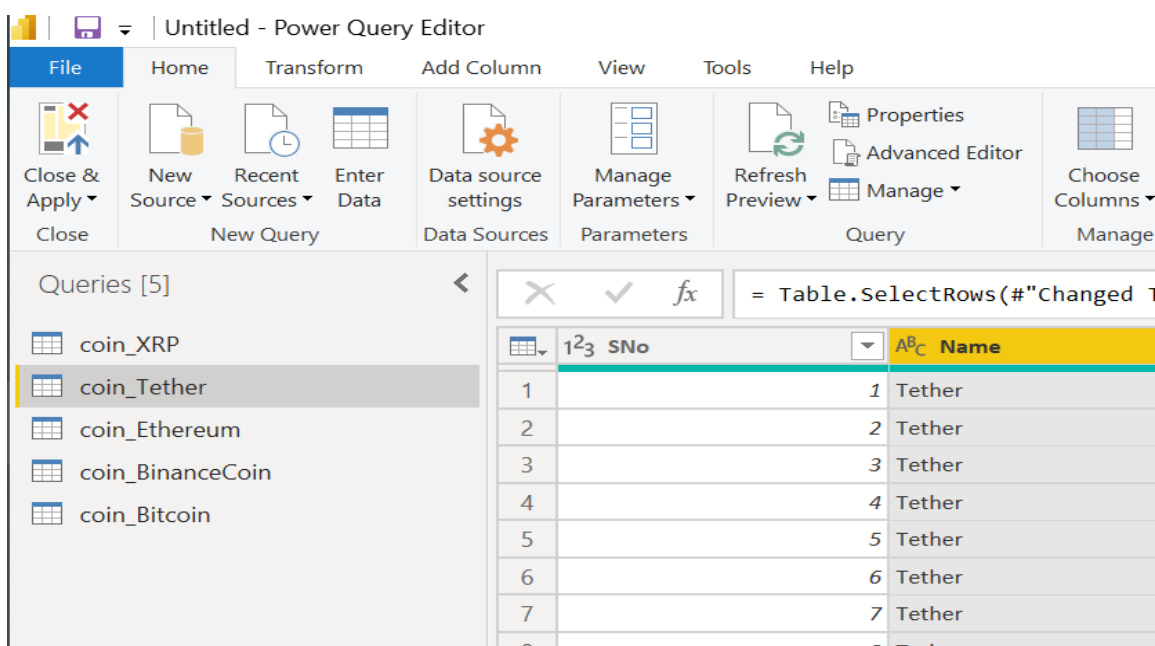


Figure 2.6 Applying the transformations

- DATA TRANSFORMATION AND ENRICHMENT

The information needs to be organised before being transformed into an efficient format. Data enrichment considerably enhances and optimises data sets as necessary by doing actions like completing and incorporating data. Creating measures is an important step in analysing a dataset as that will lead us to analyse a data in more effective way and can get a better inference. Measure creating is important when dataset has more complex field. Can further enhance the dataset by modifying the data type of each attribute in table to get the most related result later as shown in the FIG 2.7.

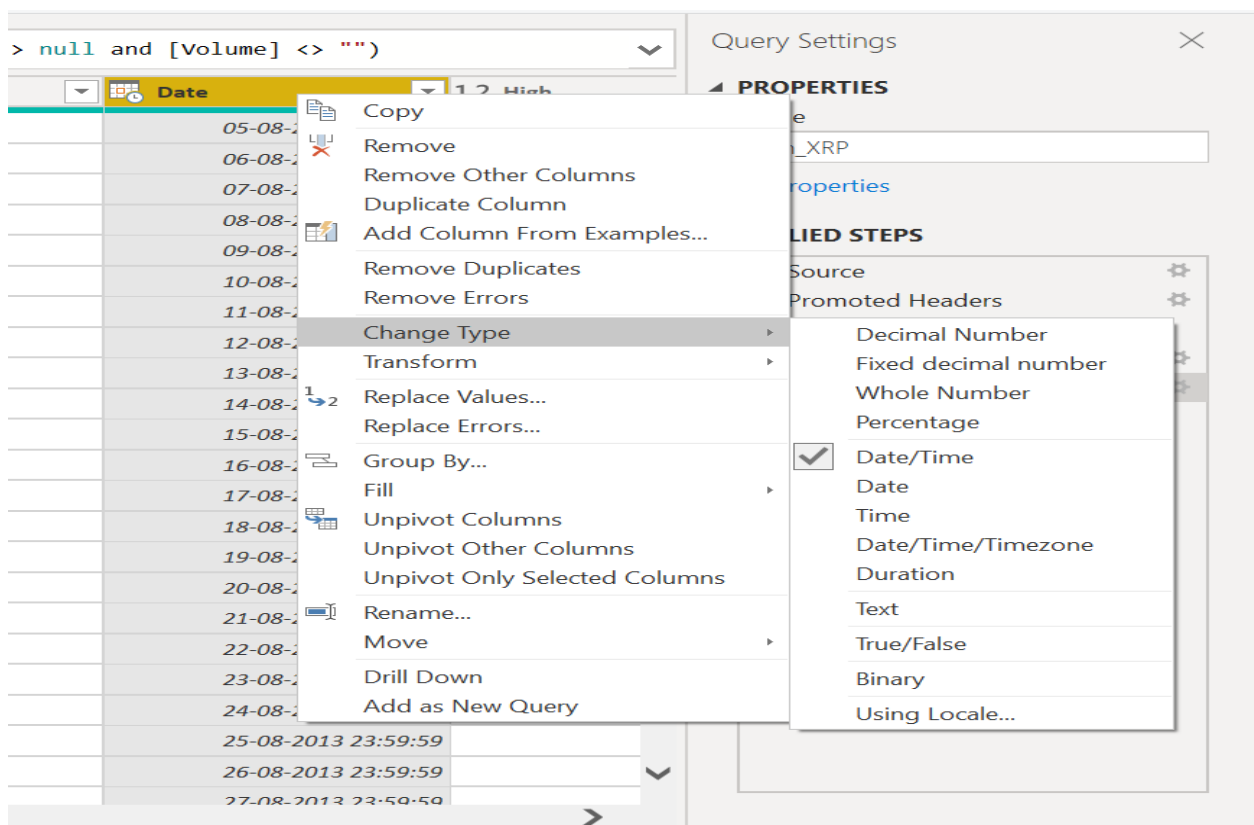


Figure 2.7 Changing datatype

Coin Tether is not in correct order hence it is sorted in ascending order. All the “date” column in each table is changed from general date format i.e. “14-03-2001 13:30:55” format to short date format i.e. “14-03-2001” as the time is same for all rows in each table i.e. “23:59:59”. Changing the date type will help to reduce the complexity of the column. As every table contained the same attributes, have to differentiate the attributes name. Renaming all the attributes according to their table will help us to differentiate.

For Binance coin table

- “Date” into “Date_BINAN”
- “Open” into “Open_BINAN”
- “High” into “High_BINAN”
- “Low” into “Low_BINAN”
- “Close” into “Close_BINAN”
- “Volume” into “Volume_BINAN”
- “Market Cap” into “Marketcap_BINAN”

SNo	Name	Symbol	Date_BINAN	High_BINAN	Low_BINAN	Open_BINAN	Close_BINAN	Volume_BINAN	Marketcap_BINAN	Month_BINAN
1	Binance Coin	BNB	26-07-2017	0.109012998640537	0.0992655009031296	0.10589300096035	0.105137996375561	200395	10513800	July
2	Binance Coin	BNB	27-07-2017	0.108479000627995	0.10088799893856	0.105108000338078	0.107736997306347	344499	10773700	July
3	Binance Coin	BNB	28-07-2017	0.109018996357918	0.10147300362587	0.107632003724575	0.104066997766495	342568	10406700	July
4	Binance Coin	BNB	29-07-2017	0.111263997852802	0.101107999682426	0.104782000184059	0.107810996472836	340218	10781100	July
5	Binance Coin	BNB	30-07-2017	0.108138002455235	0.103161998093128	0.10793499648571	0.106413997709751	224261	10641400	July
6	Binance Coin	BNB	31-07-2017	0.108349002897739	0.101599998772144	0.1068279966712	0.104249998927116	240309	10425000	July
7	Binance Coin	BNB	01-08-2017	0.106265999376774	0.0961093977093697	0.104594998061657	0.0998668000102043	300413	99866800	August
8	Binance Coin	BNB	02-08-2017	0.101210996508598	0.0973611995577812	0.0997212007641792	0.100451998412609	256793	10045200	August
9	Binance Coin	BNB	03-08-2017	0.106977999210358	0.0991197004914284	0.100327998399734	0.106642000377178	293008	10664200	August
10	Binance Coin	BNB	04-08-2017	0.107755996286869	0.102698996663094	0.106684997677803	0.107493996620178	287621	10749400	August
11	Binance Coin	BNB	05-08-2017	0.144653007388115	0.107069998979568	0.10741800069809	0.128870993852615	542878	12887100	August
12	Binance Coin	BNB	06-08-2017	0.132988005876541	0.12737999856472	0.129292994737625	0.130998998880386	393681	13099900	August
13	Binance Coin	BNB	07-08-2017	0.149764999747276	0.133300006389618	0.133957996964455	0.148847997188568	748177	14884800	August
14	Binance Coin	BNB	08-08-2017	0.226925000548363	0.14776599407196	0.14898007178307	0.224420994520187	2617340	22442100	August
15	Binance Coin	BNB	09-08-2017	0.260625004768372	0.222157999873161	0.224748000502586	0.242911994457245	3075320	24291200	August
16	Binance Coin	BNB	10-08-2017	0.349976003170013	0.245051994919777	0.251827001571655	0.349079012870789	4118070	34907900	August
17	Binance Coin	BNB	11-08-2017	0.4096539914608	0.31106698513031	0.348785012960434	0.392571985721588	4413920	39257200	August
18	Binance Coin	BNB	12-08-2017	0.475991994142532	0.337588995695114	0.392192989587784	0.446364998817444	5080760	44636500	August
19	Binance Coin	BNB	13-08-2017	1.02263998985291	0.445989996194839	0.445989996194839	0.876828014850616	13852100	87682800	August
20	Binance Coin	BNB	14-08-2017	1.46338999271393	0.735764026641846	0.872918009757996	1.29557001590729	51698100	129557000	August

Figure 2.8 Changing name of binance coin

Low_BINAN	Open_BINAN	Close_BINAN	Volume_BINAN	Marketcap_BINAN	Month_BINAN	year_BINAN	DEVIATION_BINAN	POS/NEG_BINAN
0.0992655009031296	0.10589300096035	0.105137996375561	200395	10513800	July	2017	0.000755004584789276	POSITIVE
0.10088799893856	0.105108000338078	0.107736997306347	344499	10773700	July	2017	-0.0026289966826935	NEGATIVE
0.10147300362587	0.107632003724575	0.104066997766495	342568	10406700	July	2017	0.00356500595808029	POSITIVE
0.101107999682426	0.104782000184059	0.107810996472836	340218	10781100	July	2017	-0.0030289962887764	NEGATIVE
0.103161998093128	0.10793499648571	0.106413997709751	224261	10641400	July	2017	0.00152099877595901	POSITIVE
0.101599998772144	0.1068279966712	0.104249998927116	240309	10425000	July	2017	0.0025779977440834	POSITIVE
0.0961093977093697	0.104594998061657	0.0998668000102043	300413	99866800	August	2017	0.00472819805145264	POSITIVE
0.0973611995577812	0.0997212007641792	0.100451998412609	256793	10045200	August	2017	-0.000730797648429871	NEGATIVE
0.0991197004914284	0.100327998399734	0.106642000377178	293008	10664200	August	2017	-0.0063140019774437	NEGATIVE
0.102698996663094	0.106684997677803	0.107493996620178	287621	10749400	August	2017	-0.000808998942375183	NEGATIVE
0.107069998979568	0.10741800069809	0.128870993852615	542878	12887100	August	2017	-0.0214529931545258	NEGATIVE
0.12737999856472	0.129292994737625	0.130998998880386	393681	13099900	August	2017	-0.00170600414276123	NEGATIVE
0.133300006389618	0.133957996964455	0.148847997188568	748177	14884800	August	2017	-0.014890002241135	NEGATIVE
0.14776599407196	0.14898007178307	0.224420994520187	2617340	22442100	August	2017	-0.0754229873418808	NEGATIVE
0.222157999873161	0.224748000502586	0.242911994457245	3075320	24291200	August	2017	-0.0181639939546585	NEGATIVE
0.245051994919777	0.251827001571655	0.349079012870789	4118070	34907900	August	2017	-0.0972520112991333	NEGATIVE
0.31106698513031	0.348785012960434	0.392571985721588	4413920	39257200	August	2017	-0.0437869727611542	NEGATIVE
0.337588995695114	0.392192989587784	0.446364998817444	5080760	44636500	August	2017	-0.05417200922966	NEGATIVE
0.445989996194839	0.445989996194839	0.876828014850616	13852100	87682800	August	2017	-0.430838018655777	NEGATIVE
0.735764026641846	0.872918009757996	1.29557001590729	51698100	129557000	August	2017	-0.422652006149292	NEGATIVE

Table: coin_BinanceCoin (1,442 rows)

Figure 2.9 Changing name of binance coin

For Ethereum coin table

- “Date” into “Date_ETH”
- “Open” into “Open_ETH”
- “High” into “High_ETH”
- “Low” into “Low_ETH”
- “Close” into “Close_ETH”
- “Volume” into “Volume_ETH”
- “Market Cap” into “Marketcap_ETH”

Table: coin_Ethereum (7,160 rows)

SNo	Name	Symbol	Date_ETH	High_ETH	Low_ETH	Open_ETH	Close_ETH	Volume_ETH	Marketcap_ETH	month_ETH	year_ETH
1	Ethereum	ETH	08-08-2015	2.79881000518799	0.714725017547607	2.79376006126404	0.75332498550415	674188	45486894.2408	August	
2	Ethereum	ETH	09-08-2015	0.879809975624084	0.629190981388092	0.706135988235474	0.701897025108337	532170	405283	August	
3	Ethereum	ETH	10-08-2015	0.729853987693787	0.636546015739441	0.713989019393921	0.708447992801666	1463100	4068680	August	
4	Ethereum	ETH	11-08-2015	1.13141000270844	0.663235008716583	0.708087027072906	1.06786000728607	2150620	110607191.674	August	
5	Ethereum	ETH	12-08-2015	1.28993999958038	0.883607983589172	1.0587500333786	1.21744000911713	4637030	110672321.811	August	
6	Ethereum	ETH	13-08-2015	1.96507000923157	1.17199003696442	1.2223997116089	1.82766997814178	2554360	102303608.467	August	
7	Ethereum	ETH	14-08-2015	2.26187992095947	1.75475001335144	1.81092000007629	1.82787001132965	3550790	94901005.3503	August	
8	Ethereum	ETH	15-08-2015	1.87723994255066	1.57097995281219	1.80288994312286	1.6888999389648	1942830	87295366.5007	August	
9	Ethereum	ETH	16-08-2015	1.69524002075195	1.08981001377106	1.68435001373291	1.56603002548218	1485680	78868413.078	August	
10	Ethereum	ETH	17-08-2015	1.58118999004364	1.18534004688263	1.58118999004364	1.20360994338989	1486240	91366391.4393	August	
11	Ethereum	ETH	18-08-2015	1.33115994930267	1.08704996109009	1.21529996395111	1.08704996109009	2843760	106351420.178	August	
12	Ethereum	ETH	19-08-2015	1.31788994541168	1.16692996025085	1.16692996025085	1.25885999202728	2020970	101331855.597	August	
13	Ethereum	ETH	20-08-2015	1.5333000421524	1.24832999706268	1.25118005275726	1.46492004394531	948310	100201825.662	August	
14	Ethereum	ETH	21-08-2015	1.55641996860504	1.35280001163483	1.47751998901367	1.39529001712799	1589300	98300351.3461	August	
15	Ethereum	ETH	22-08-2015	1.47641003131866	1.35267996788025	1.39628994464874	1.37923002243042	924920	89515256.5525	August	
16	Ethereum	ETH	23-08-2015	1.40970003604889	1.29777002345595	1.375	1.35258996486664	1307180	82922632.9052	August	
17	Ethereum	ETH	24-08-2015	1.36277997493744	1.23126995563507	1.34558999538422	1.23126995563507	1056750	84390923.5384	August	
18	Ethereum	ETH	25-08-2015	1.2418199776031	1.12864995002747	1.22861003875732	1.14019000530243	686662	83524585.3858	August	
19	Ethereum	ETH	26-08-2015	1.20247995853424	1.06183004379272	1.13278996944427	1.15998005867004				
20	Ethereum	ETH	27-08-2015	1.18883001804352	1.13729000091553	1.1698100566864	1.14769995212555				

Figure 2.10 changing name of Ethereum coin

High_ETH	Low_ETH	Open_ETH	Close_ETH	Volume_ETH	Marketcap_ETH	month_ETH	year_ETH	DEVIATION_ETH	POS/NEG_ETH
2.79881000518799	0.714725017547607	2.79376006126404	0.75332498550415	674188	45486894.2408	August	2015	2.04043507575989	POSITIVE
0.879809975624084	0.629190981388092	0.706135988235474	0.701897025108337	532170	42399573.4991	August	2015	0.00423896312713623	POSITIVE
0.729853987693787	0.636546015739441	0.713989019393921	0.708447992801666	1463100	42818364.3945	August	2015	0.00554102659225464	POSITIVE
1.13141000270844	0.663235008716583	0.708087027072906	1.06786000728607	2150620	64569288.4328	August	2015	-0.359772980213165	NEGATIVE
1.28993999958038	0.883607983589172	1.0587500333786	1.21744000911713	4637030	73645010.9863	August	2015	-0.158689975738525	NEGATIVE
1.96507000923157	1.17199003696442	1.2223997116089	1.82766997814178	2554360	110607191.674	August	2015	-0.605430006980896	NEGATIVE
2.26187992095947	1.75475001335144	1.81092000007629	1.82787001132965	3550790	110672321.811	August	2015	-0.0169500112533569	NEGATIVE
1.87723994255066	1.57097995281219	1.80288994312286	1.6888999389648	2554360	102303608.467	August	2015	0.113989949226379	POSITIVE
1.69524002075195	1.08981001377106	1.68435001373291	1.56603002548218	3550790	94901005.3503	August	2015	0.118319988250732	POSITIVE
1.58118999004364	1.18534004688263	1.58118999004364	1.20360994338989	1942830	87295366.5007	August	2015	0.377580046653748	POSITIVE
1.33115994930267	1.08704996109009	1.21529996395111	1.08704996109009	1485680	78868413.078	August	2015	0.128250002861023	POSITIVE
1.31788994541168	1.16692996025085	1.16692996025085	1.25885999202728	1486240	91366391.4393	August	2015	-0.091930031776482	NEGATIVE
1.5333000421524	1.24832999706268	1.25118005275726	1.46492004394531	2843760	106351420.178	August	2015	-0.213739991188049	NEGATIVE
1.55641996860504	1.35280001163483	1.47751998901367	1.39529001712799	2020970	101331855.597	August	2015	0.0822299718856812	POSITIVE
1.47641003131866	1.35267996788025	1.39628994464874	1.37923002243042	948310	100201825.662	August	2015	0.0170599222183228	POSITIVE
1.40970003604889	1.29777002345595	1.375	1.35258996486664	1589300	98300351.3461	August	2015	0.0224100351333618	POSITIVE
1.36277997493744	1.23126995563507	1.34558999538422	1.23126995563507	924920	89515256.5525	August	2015	0.114320039749146	POSITIVE
1.2418199776031	1.12864995002747	1.22861003875732	1.14019000530243	1307180	82922632.9052	August	2015	0.088420033454895	POSITIVE
1.20247995853424	1.06183004379272	1.13278996944427	1.15998005867004	1056750	84390923.5384	August	2015	-0.027190089225769	NEGATIVE
1.18883001804352	1.13729000091553	1.1698100566864	1.14769995212555	686662	83524585.3858	August	2015	0.0222101045608521	POSITIVE

Figure 2.11 Changing name of Ethereum coin

For Tether coin table

- “Date” into “Date_TETH”
- “Open” into “Open_TETH”
- “High” into “High_TETH”
- “Low” into “Low_TETH”
- “Close” into “Close_TETH”
- “Volume” into “Volume_TETH”
- “Market Cap” into “Marketcap_TETH”

Table: coin_Tether (2,318 rows)

Figure 2.12 Changing the name of tether coin

Table: coin_Tether (2,318 rows)

Figure 2.13 Changing the name of tether coin

For XRP coin table

- “Date” into “Date_XRP”
- “Open” into “Open_XRP”
- “High” into “High_XRP”
- “Low” into “Low_XRP”
- “Close” into “Close_XRP”
- “Volume” into “Volume_XRP”
- “Market Cap” into “Marketcap_XRP”

Table: coin_XRP (2,893 rows)

SNo	Name	Symbol	Date_XRP	High_XRP	Low_XRP	Open_XRP	Close_XRP	Volume_XRP	Marketcap_XRP	month_XRP	year_XRP
1	XRP	XRP	05-08-2013	0.00597984017804265	0.00561266019940376	0.00587478000670671	0.00561266019940376	0	43879157.32	August	2013
2	XRP	XRP	06-08-2013	0.00566102005541325	0.00462860986590385	0.00563676003366709	0.004680419806391	0	36591007.7403	August	2013
3	XRP	XRP	07-08-2013	0.00468201981857419	0.00433260994032025	0.004669229965657	0.00441731978207827	0	34534120.936	August	2013
4	XRP	XRP	08-08-2013	0.00442402996122837	0.0041752899969363	0.00439665000885725	0.00425417022779584	0	33258632.2164	August	2013
5	XRP	XRP	09-08-2013	0.00436668004840612	0.00425268011167645	0.00425725011155009	0.00429111998528242	0	33547503.2442	August	2013
6	XRP	XRP	10-08-2013	0.00436649983748794	0.00427858019247651	0.00429111998528242	0.0043138200417161	0	33724969.3425	August	2013
7	XRP	XRP	11-08-2013	0.00442061014473438	0.00430027022957802	0.0043138200417161	0.00441532023251057	0	34518485.1564	August	2013
8	XRP	XRP	12-08-2013	0.00452018016945296	0.0043589798733592	0.00441436981782317	0.00444854004308581	0	34778195.4553	August	2013
9	XRP	XRP	13-08-2013	0.00446332013234496	0.00417130999267101	0.00446332013234496	0.00424543023109436	0	33190303.8597	August	2013
10	XRP	XRP	14-08-2013	0.00426704995334148	0.00378538994118571	0.00426704995334148	0.00378841999918222	0	29617450.0458	August	2013
11	XRP	XRP	15-08-2013	0.00380362989380956	0.00306695001199841	0.00378810008987784	0.00309196999296546	0	24172680.7002	August	2013
12	XRP	XRP	16-08-2013	0.00316227995790541	0.00287487008608878	0.00308173010125756	0.00313352001830935	0	24497514.021	August	2013
13	XRP	XRP	17-08-2013	0.00568349985405803	0.00313811004161835	0.00313811004161835	0.00567100988700986	0	44335331.1893	August	2013
14	XRP	XRP	18-08-2013	0.0062637993890047	0.00558527000248432	0.00568673014640808	0.00561744021251798	0	43916526.8332	August	2013
15	XRP	XRP	19-08-2013	0.00583866983652115	0.00522339018061757	0.00558695988729596	0.00526040978729725	0	41125305.6407	August	2013
16	XRP	XRP	20-08-2013	0.00615776982158422	0.00530887022614479	0.00537627004086971	0.00609805015847087	0	47673882.8461	August	2013
17	XRP	XRP	21-08-2013	0.00634879991412163	0.00594996009021997	0.00609830021858215	0.00613065017387271	0	47928746.0533	August	2013
18	XRP	XRP	22-08-2013	0.00613811006769538	0.00514271995052695	0.00613065017387271	0.00514271995052695	0	40205218.1911	August	2013
19	XRP	XRP	23-08-2013	0.00523247988894582	0.004919049795717	0.00517879985272884	0.00513859000056982	0	40172930.3063	August	2013
20	XRP	XRP	24-08-2013	0.00560281984508038	0.00512553984299302	0.00513898022472858	0.00554599007591605	0	43357938.6075	August	2013

Figure 2.14 Changing the name of XRP coin

Table: coin_XRP (2,893 rows)

XRP	Low_XRP	Open_XRP	Close_XRP	Volume_XRP	Marketcap_XRP	month_XRP	year_XRP	DEVIATION_XRP	POS/NEG_XRP
84017804265	0.00561266019940376	0.00587478000670671	0.00561266019940376	0	43879157.32	August	2013	0.000262119807302952	POSITIVE
02005541325	0.00462860986590385	0.00563676003366709	0.004680419806391	0	36591007.7403	August	2013	0.000956340227276087	POSITIVE
01981857419	0.00433260994032025	0.004669229965657	0.00441731978207827	0	34534120.936	August	2013	0.00025191018357873	POSITIVE
02996122837	0.0041752899969363	0.00439665000885725	0.00425417022779584	0	33258632.2164	August	2013	0.000142479781061411	POSITIVE
68004840612	0.00425268011167645	0.00425725011155009	0.00429111998528242	0	33547503.2442	August	2013	-3.38698737323284E-05	NEGATIVE
49983748794	0.00427858019247651	0.00429111998528242	0.0043138200417161	0	33724969.3425	August	2013	-2.7700056436777E-05	NEGATIVE
61014473438	0.00430027022957802	0.0043138200417161	0.00441532023251057	0	34518485.1564	August	2013	-0.000101500190794468	NEGATIVE
18016949296	0.0043589798733592	0.00441436981782317	0.00444854004308581	0	34778195.4553	August	2013	-3.4170225262619E-05	NEGATIVE
32013234496	0.00417130999267101	0.00446332013234496	0.00424543023109436	0	33190303.8597	August	2013	0.000217889901250601	POSITIVE
04995334148	0.00378538994118571	0.00426704995334148	0.00378841999918222	0	29617450.0458	August	2013	0.00047862995415926	POSITIVE
62983809956	0.00306695001199841	0.00378810008987784	0.00309196999296546	0	24172680.7002	August	2013	0.000696130096912384	POSITIVE
27995790541	0.00287487008608878	0.00308173010125756	0.00313352001830935	0	24497514.021	August	2013	-5.17899170517921E-05	NEGATIVE
49985405803	0.00313811004161835	0.00313811004161835	0.00567100988700986	0	44335331.1893	August	2013	-0.00253289984539151	NEGATIVE
37993890047	0.00558527000248432	0.00568673014640808	0.00561744021251798	0	43916526.8332	August	2013	6.92899338901043E-05	POSITIVE
66983652115	0.00522339018061757	0.00558695988729596	0.00526040978729725	0	41125305.6407	August	2013	0.000326550099998713	POSITIVE
76982158422	0.00530887022614479	0.00537627004086971	0.00609805015847087	0	47673882.8461	August	2013	-0.000721780117601156	NEGATIVE
79991412163	0.00594996009021997	0.00609830021858215	0.00613065017387271	0	47928746.0533	August	2013	-3.2349955290556E-05	NEGATIVE
11006769538	0.00514271995052695	0.00613065017387271	0.00514271995052695	0	40205218.1911	August	2013	0.000987930223345757	POSITIVE
47988894582	0.004919049795717	0.00517879985272884	0.00513859000056982	0	40172930.3063	August	2013	4.02098521590233E-05	POSITIVE
81984508038	0.00512553984299302	0.00513898022472858	0.00554599007591605	0	43357938.6075	August	2013	-0.000407009851187468	NEGATIVE

Figure 2.15 Changing the name of XRP coin

- Month and year from date is created as a separate column for each table for easy analysis using month and year.
- A new column is created with difference between opening value and closing value.
- $DEVIATION_BINAN = coin_BinanceCoin[Open_BINAN] - coin_BinanceCoin[Close_BINAN]$
- An another new column is created with data's of positive/negative deviation.
- $POS/NEG_BIT = IF(coin_Bitcoin[DEVIATION_BIT] >= 0, "POSITIVE", "NEGATIVE")$

- CHALLENGES ON DATA PREPARATION

The data preparation is not an easy method to perform as can face some challenges on the data preparation like Inadequate or nonexistent of the data profiling, some data's may be missing or incomplete in every column, can have invalid data values, the name of the column may not be related one, maintaining and expanding the preparation is process is complicated one.

2.2 DATA MODELLING

Data modelling is the act of analysing and defining all the various data of the company produces and collects, as well as the connections between those data points. It can also be the process of using formal techniques to simplify the diagram or data model of a software system. Data modelling is a practise in comprehending and outlining the data requirements, and it produces visual representations of the data as it is used at the company. The objective is to provide examples of the different types of data that are used and stored inside the system, their relationships, possible groupings and organisational structures, formats, and properties. Data models are created for commercial purposes. Data modelling can be done at several levels of abstraction. Gathering data on business requirements from end users and stakeholders is the first stage. The development of a specific database architecture begins with the translation of these business principles into data structures. Standardized schemas and formal methodologies are used in data modelling. These data models should ideally be viewed as live documents that change as the business environment does needs. Planning IT architecture and strategy and supporting business activities both heavily rely on data models. It can be distributed to associates, competitors, and suppliers.

- **TYPES OF DATA MODELS**

Conceptual, logical, and physical data models are the three different categories of data models. Conceptual data models, also known as domain models, provide a broad overview of the system's functionality, organisational structure, and business rules. Entity classes, their traits and limitations, their connections, and pertinent security and data integrity requirements are frequently included. Any notation is usually straightforward. Less abstract and offering more information about the ideas and connections in the topic at hand are logical data models.

- **IMPACTS OF DATA MODELS**

Need a good data model to acquire the most useful analytics for business intelligence that guides decision-making, data modelling and data analytics go hand in hand. Each business unit is forced to consider how they contribute to the overall business goals through the process of developing data models. Additionally, no matter how big and complicated the data estate is or gets, a strong data model ensures improved analytics performance. When all of the data is well-defined, it is considerably simpler to analyse just the data. The linkages between the data attributes have already been established, making it easy to analyse and observe effects as altered the procedures, costs, or staffing.

- **DATA MODELING PROCESS**

The data modelling process includes identifying the entities of the table, identifying the key properties of each entity, identifying the relationships among entities as the each table contains some relationship among the entities, Mapping the attributes to entities completely, Assigning the keys as needed and deciding on a degree of normalization that balance the need to reduce redundancy with performance requirements and then finalizing and validating the data model

- **BENEFITS OF DATA MODELING**

Errors in the creation of databases and software are decreased via data modelling. They substantially improve enterprise-wide consistency in documentation and system architecture. Database and application performance are improved through data modelling. They facilitate data mapping across the enterprise and enhance coordination between the business intelligence and development teams. Additionally, they facilitate and expedite the conceptual, logical, and physical phases of database design. The data model relationship of data is defined by default and hence the data model relationship of data set is defined as one-to-one relation for all table as shown in FIG 2.8

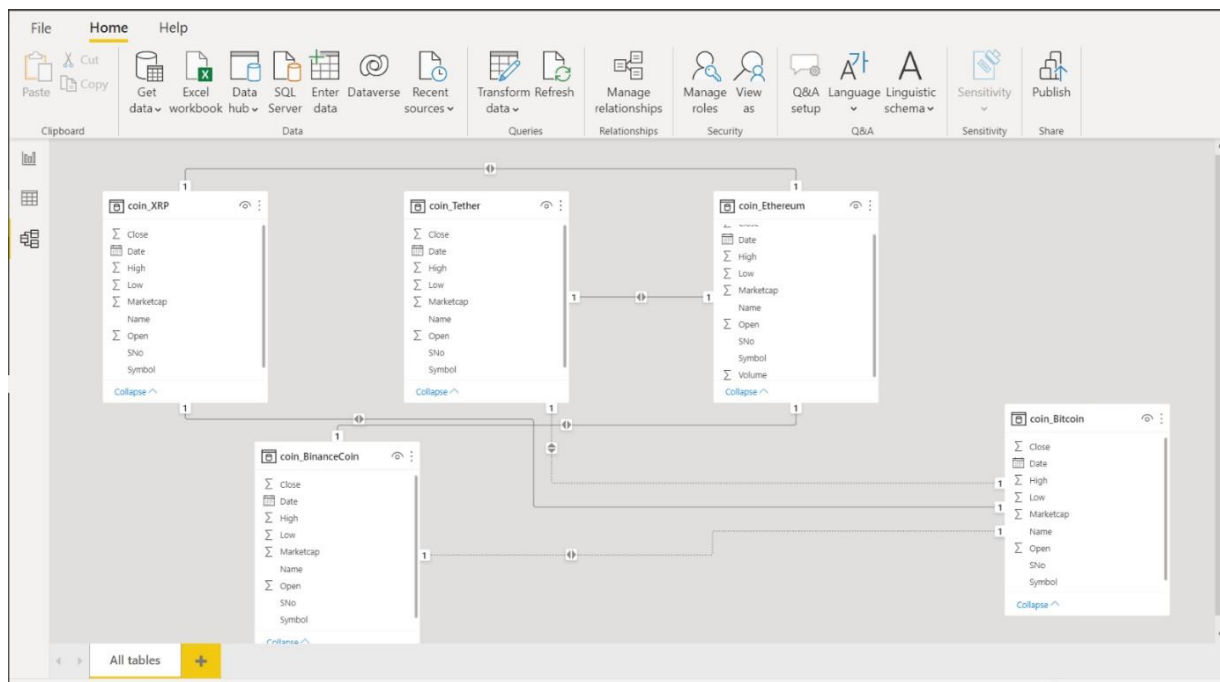


Figure 2.8 Data model

CHAPTER 3

DATA ANALYSIS AND INTERPRETATION

3.1 DATA ANALYSIS

The Data Analysis is a process to conclude what is happening and what has happened in that particular industry or domain. Data analysts look back at previous performance to determine what went wrong in the performance of the company or the institution. It is also a method of predicting future performance based on historical data which would be very helpful for future investments of the business companies etc. Analytic dashboards are frequently the outcome of the analysis. Finding relevant information, drawing conclusions from data, and supporting decision-making are the objectives of data analysis. Concluding Data Analysis is the process of scrutinising, purifying, changing, and modelling data with the objective of unearthing pertinent information, guiding deductions, and assisting decision-making.

QUESTIONS PREPARED FOR THE DATASET

1. How did all the cryptocurrencies values have been increased/decreased with time?
2. Which coin has the largest value among binance coin, tether, XRP for the summation of high value of each day?
3. Which are the most and least profitable coin in the month of August in the range of years.
4. Which coin has the highest and lowest average deviation of opening and closing value?
5. Find which month has the highest and lowest volume of transaction in the year 2017 for the coin tether?
6. Analyse the number of days in which the Ethereum had a market cap greater than 60000000 for year by year and also by month by month?
7. Which among the 4 coins have recorded the least value in all the years?
8. Which coin is most transacted coin for every month?
9. How has ethereum volume of transaction varied over time?
10. The number of days in which the volume of transaction of the coin XRP is equal to 0?

11. In Which month XRP was most profitable?
12. Find the top 2 coins out of 4 based on market cap?
13. The number of positively deviated values in Ethereum (opening value is higher than closing value)
14. Compare the opening value of coin XRP over the time period?
15. Which among the coin Ethereum and XRP have recorded the high value in all the years?
16. Which coin is the least profitable coin among the 4?
17. Compare the closing value of Ethereum for each month and give the highest and lowest value recorded month.
18. Count the number of negatively deviated days in the table Tether for each year.
19. In which year the market cap of coin Tether was the highest?
20. Which coin has the best average deviation among 4 coins?

3.2 PUBLISHING DASHBOARDS

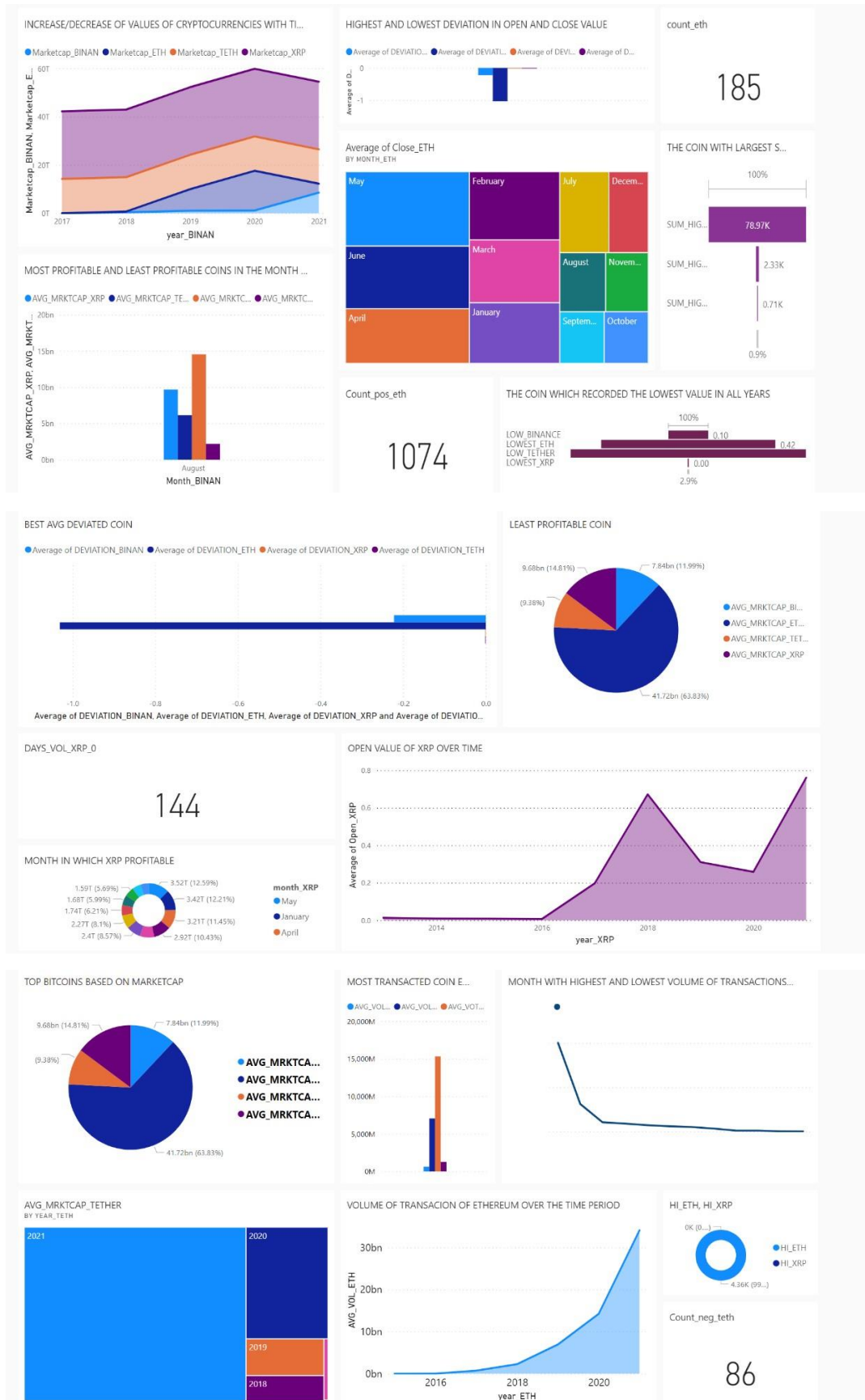


Figure 3.1 Dashboard

3.3 INFERENCE

1.How did all the cryptocurrencies values have been increased/decreased with time?

STEPS:

Visualizations → Stacked area chart

X axis → year_BINAN

Y axis → Marketcap_BINAN, Marketcap_TETH, Marketcap_XRP, Marketcap_ETH

OUTPUT:

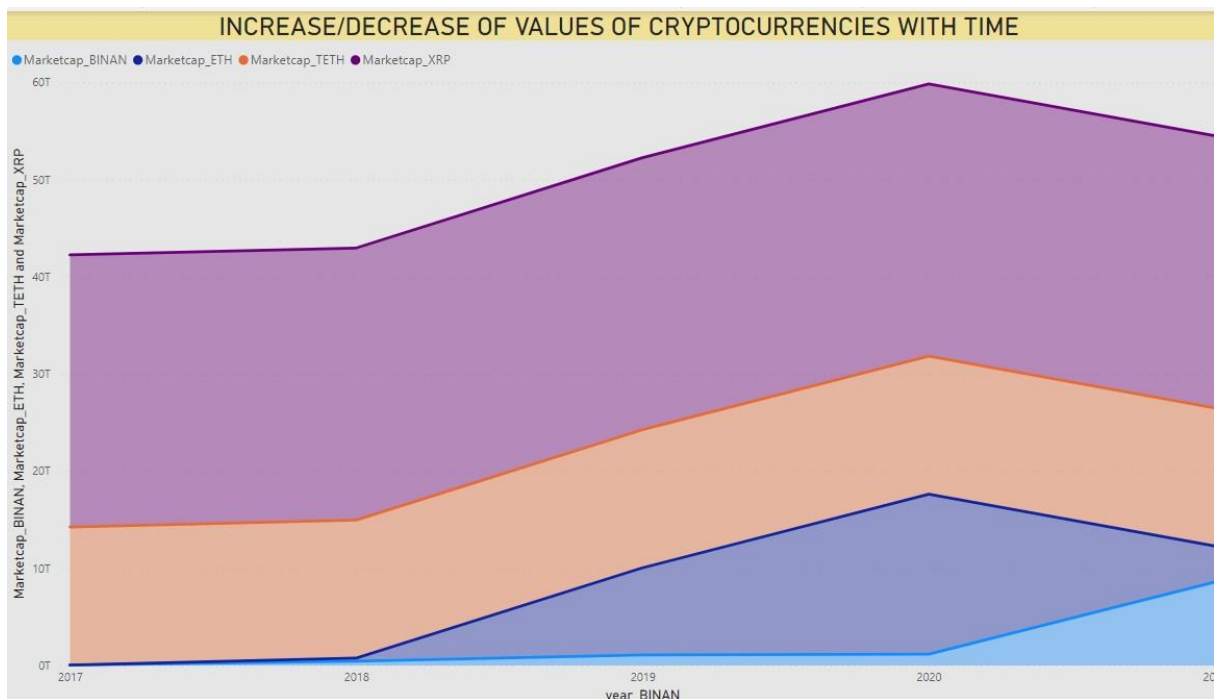


Figure 3.1 increase/decrease with time

INFERENCE:

- The Marketcap of BINANCE COIN has been constantly growing in the years 2017, 2018, 2019, 2020 and suddenly increased with a high value after 2020.
- The Marketcap of XRP coin, Marketcap ETHEREUM coin, Marketcap TETHER COIN has been increased from the year 2017 to 2018 and increased highly from 2018 to 2020 and suddenly decreased after 2020

2. Which coin has the largest value among binance coin, tether, XRP for the summation of high value of each day?

STEPS:

Measure created for sum of high values of each day.

SUM_HIGH_BINAN = SUM(coin_BinanceCoin[High_BINAN])

SUM_HIGH_XRP = SUM(coin_XRP[High_XRP])

SUM_HIGH_TETH = SUM(coin_Tether[High_TETH])

Visualisations ☐ funnel chart

Values ☐ measures

OUTPUT:

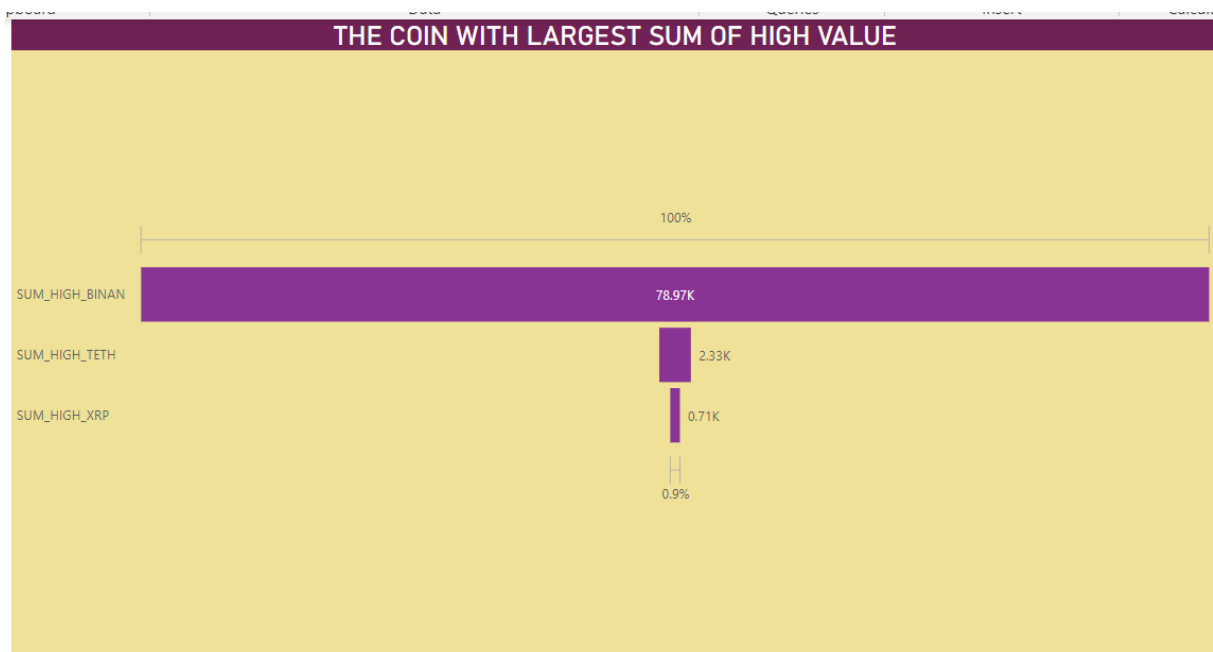


Figure 3.2 coin with largest sum of high value

INFERENCE:

Binance coin has the largest value among binance coin, tether, XRP for the summation of high value of each day with a value of 78.97k

3. Which are the most profitable coins and least profitable coin in the month of August in the range of years.

STEPS:

Measures created for average of marketcap of all coins

AVG_MRKTCAP_BINANCE = **AVERAGE**(coin_BinanceCoin[Marketcap_BINAN])

AVG_MRKTCAP_ETHERE = **AVERAGE**(coin_Ethereum[Marketcap_ETH])

AVG_MRKTCAP_TETHER = **AVERAGE**(coin_Tether[Marketcap_TETH])

AVG_MRKTCAP_XRP = **AVERAGE**(coin_XRP[Marketcap_XRP])

Visualisations ☐ clustered columnchart

X axis ☐ Month_BINAN

Y axis ☐ average measures of all coins

Filter ☐ month ☐ august

Slicer ☐ year_BINAN

OUTPUT:

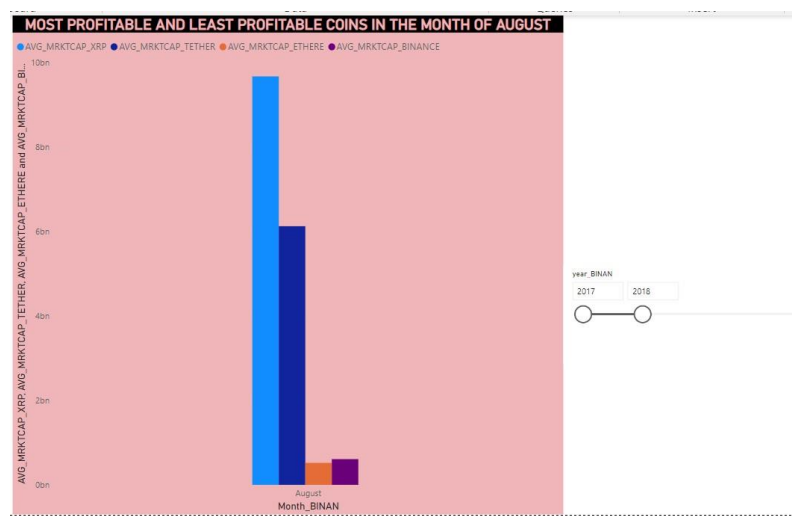


Figure 3.3 most and least profitable coin on august

INFERENCE:

The most profitable coins and least profitable coin in the month of August in

- 2017 – 2018 are XRP AND ETHEREUM
- 2017 – 2019 are ETHEREUM AND BINANCE
- 2017 – 2020 are ETHEREUM AND BINANCE
- 2017 – 2021 are ETHEREUM AND BINANCE

4. Which coin has the highest and lowest average deviation of opening and closing value?

STEPS:

Visualisations ☐ clustered column chart

Y axis ☐ Deviation of opening and closing values columns of all coins

Filter ☐ average of deviation column

OUTPUT:

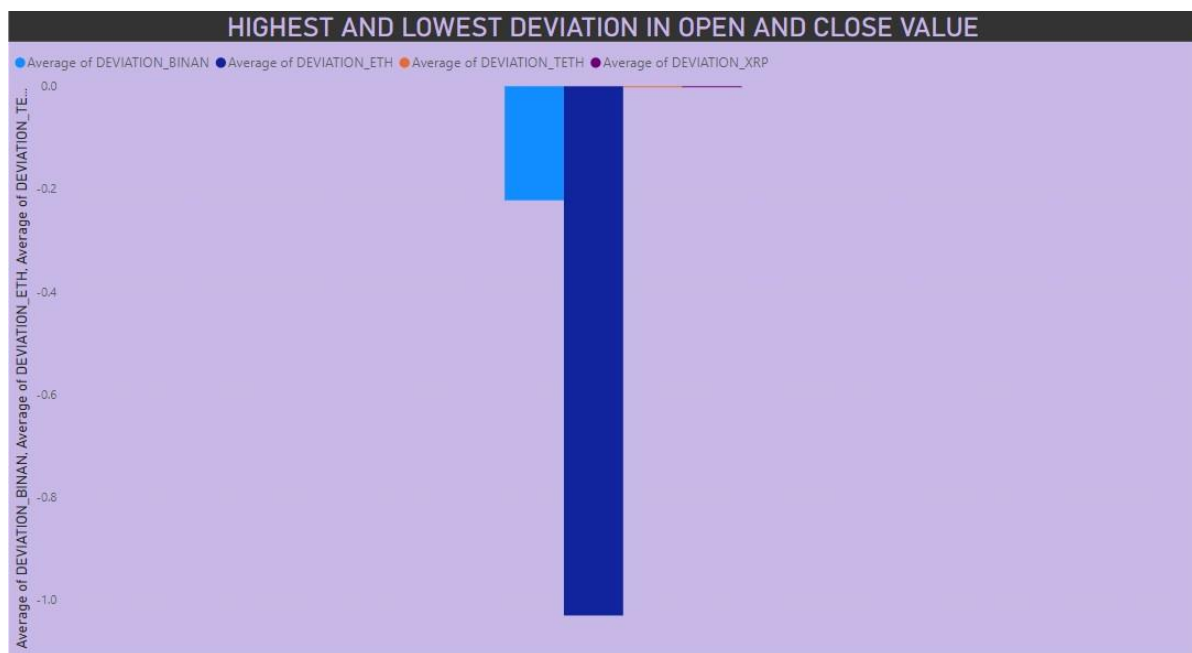


Figure 3.4 highest and lowest deviation

INFERENCE:

Ethereum has the highest average deviation of opening and closing value of -1.03 and XRP, TETHER has the lowest average deviation of opening and closing value of 0.00

5. Find which month has the highest and lowest volume of transaction in the year 2017 for the coin tether?

STEPS:

Measure for average volume of transaction of coin tether.

AVG_VOT_TETHER = **AVERAGE**(coin_Tether[Volume_TETH])

New column YEAR, MONTH is created.

month_TETH = coin_Tether[Date_TETH].[Month]

visualisations → LINE CHART

x axis → month_TETH

y axis → measure

legend → year

filter → basic filter → year – 2017

OUTPUT:

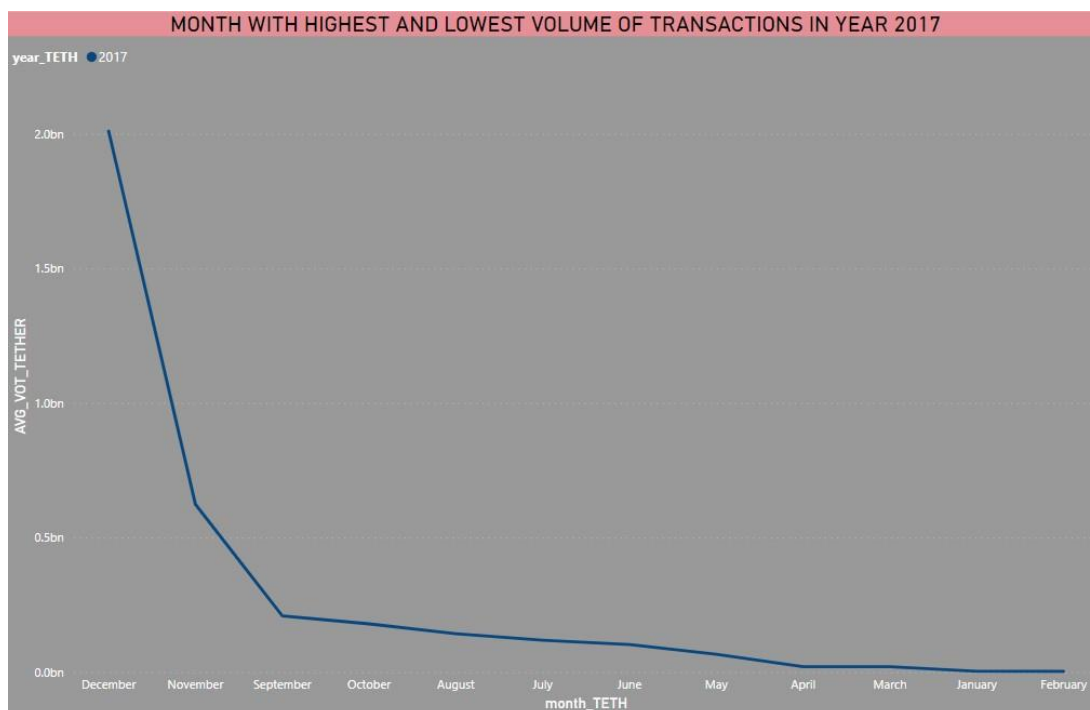


Figure 3.5 month with highest and lowest volume of transactions

INFERENCE:

DECEMBER month has the highest volume of transaction and FEBRUARY month has the lowest volume of transaction in the year 2017 for the coin tether

6. Analyse the number of days in which the Ethereum had a market cap greater than 60000000 for year by year and also by month by month?

STEPS:

Measure:

count_eth =

`CALCULATE(COUNT('coin_Ethereum'[Marketcap_ETH]),'coin_Ethereum'[Marketcap_ETH]>60000000)`

Visualisations → card

Value → count_eth

Slicer 1 → year_eth

Slicer 2 → month_ETH

OUTPUT:

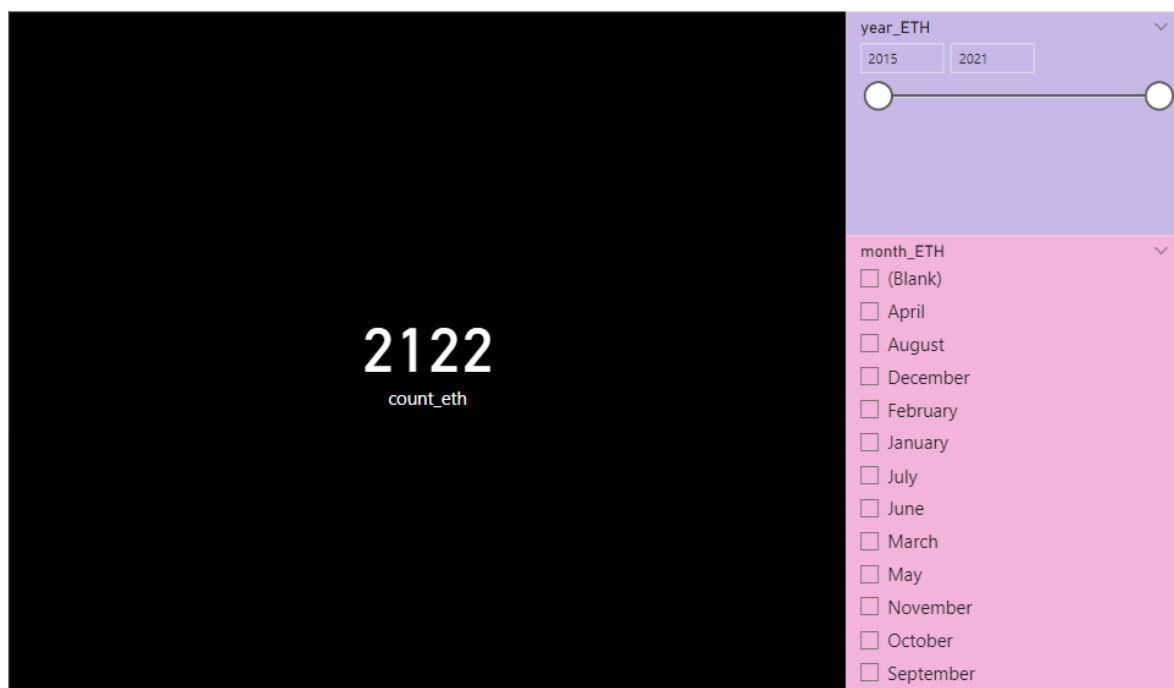


Figure 3.6

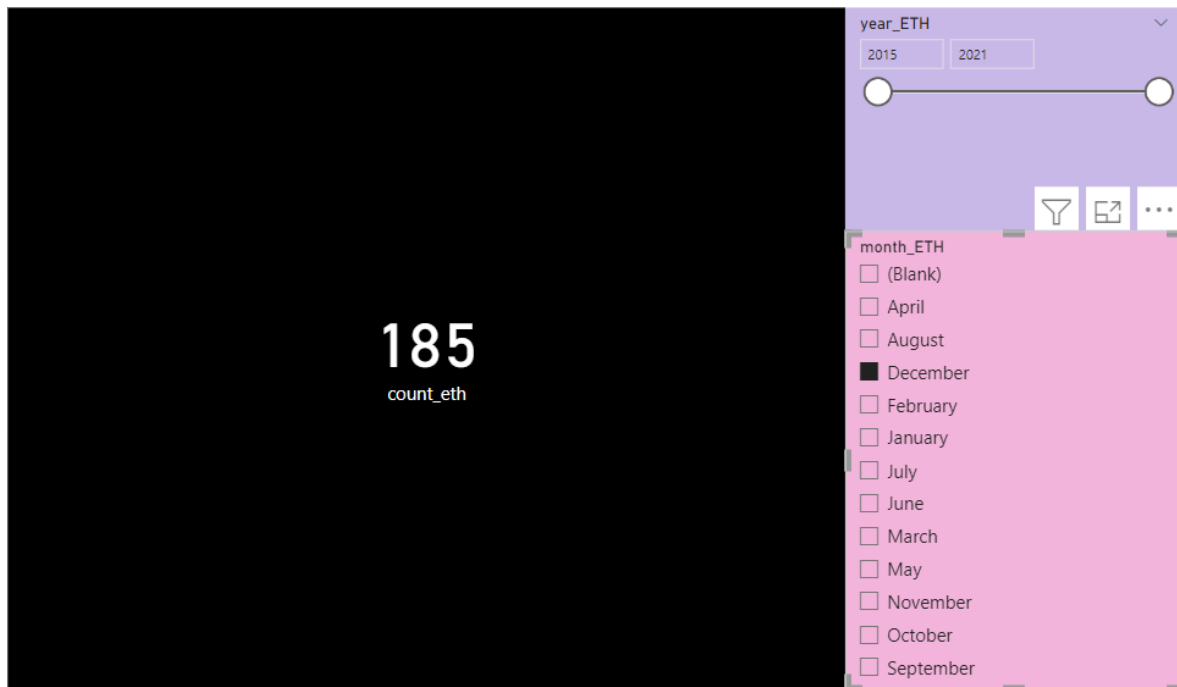


Figure 3.7

INFERENCE:

- The number of days in which the Ethereum had a market cap greater than 60000000 for the range of year 2015 to 2021 is 2122
- The number of days in which the Ethereum had a market cap greater than 60000000 for the range of year 2015 to 2021 only in the December month is 185
- We can find for all required period of year and month, in which it have to be analyzed

7. which among the 4 coin have recorded the least value in all the years?

STEPS:

Measure for min is created

LOW_BINANCE = MIN(coin_BinanceCoin[Low_BINANCE])

LOWEST_ETH = MIN(coin_Ethereum[Low_ETH])

LOW_TETHER = MIN(coin_Tether[Low_TETHER])

LOWEST_XRP = MIN(coin_XRP[Low_XRP])

Visualisations → funnel chart

Values → measures

OUTPUT:

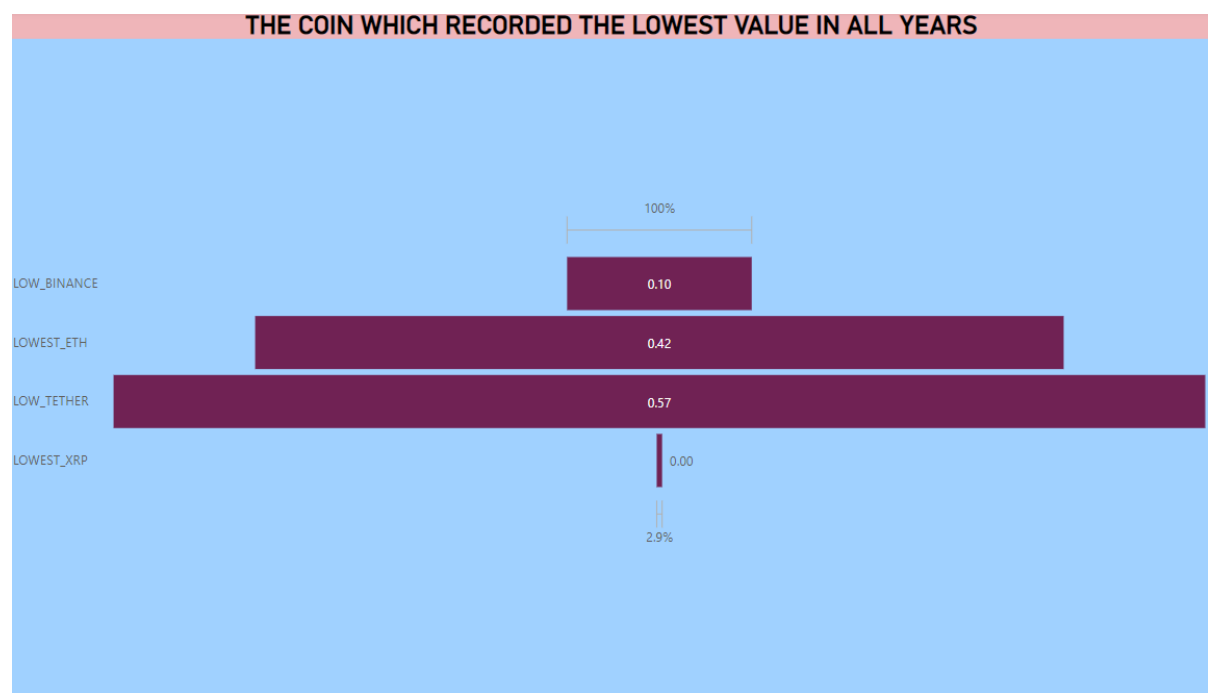


Figure 3.8 coin which recorded lowest value

INFERENCE:

The lowest value recorded among the All coins in all years is 'XRP COIN' with a lowest value of 0.00

8. which coin is most transacted coin for every month?

STEPS:

Measure is created for average of volume of transaction of all coins.

AVG_VOT_TETHER = AVERAGE(coin_Tether[Volume_TETH])

AVG_VOL_BINAN = AVERAGE(coin_BinanceCoin[Volume_BINAN])

AVG_VOL_ETH = AVERAGE(coin_Ethereum[Volume_ETH])

AVG_VOL_XRP = AVERAGE(coin_XRP[Volume_XRP])

Visualisations → clustered column chart

Y axis → average measures

Slicer → month_TETH

OUTPUT:

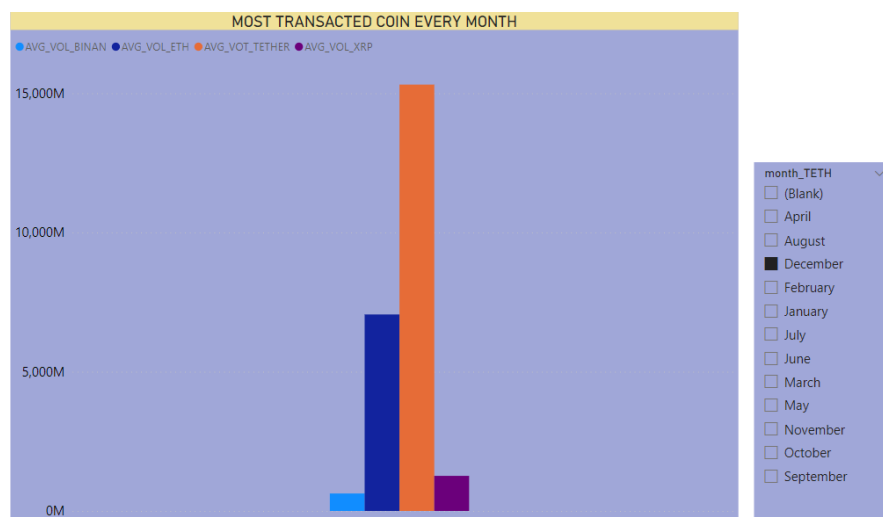


Figure 3.9 most transacted coin every month

INFERENCE:

The coin which is most transacted coin for every month

- January - TETHER
- February - TETHER
- March - TETHER
- April - TETHER
- May - TETHER
- June – TETHER
- July - TETHER
- August - TETHER
- September - TETHER
- October - TETHER
- November - TETHER
- December – TETHER

9. How has ethereum volume of transaction varied over time?

STEPS:

Measure is created for the average volume of transaction of Ethereum

AVG_VOL_ETH = `AVERAGE`(coin_Ethereum[Volume_ETH])

Visualizations → area chart

X axis → year_ETH

Y axis → measure

OUTPUT:

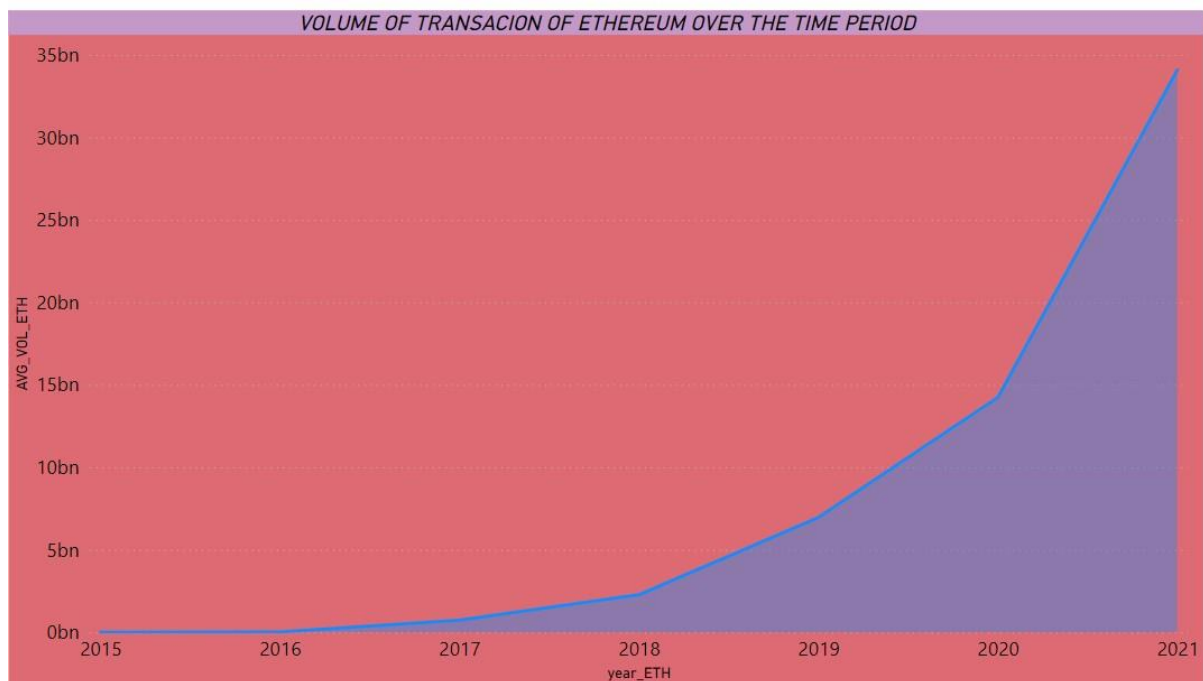


Figure 3.10 volume of transaction of ethereum

INFERENCE:

Ethereum volume of transaction has been increased over time.

10. The number of days in which the volume of transaction of the coin XRP is equal to 0?

STEPS:

Measure:

DAYS_VOL_XRP_0 =

`CALCULATE(COUNT(coin_XRP[Volume_XRP]),coin_XRP[Volume_XRP]=0)`

Visualisations → card

Value → DAYS_VOL_XRP_0

OUTPUT:

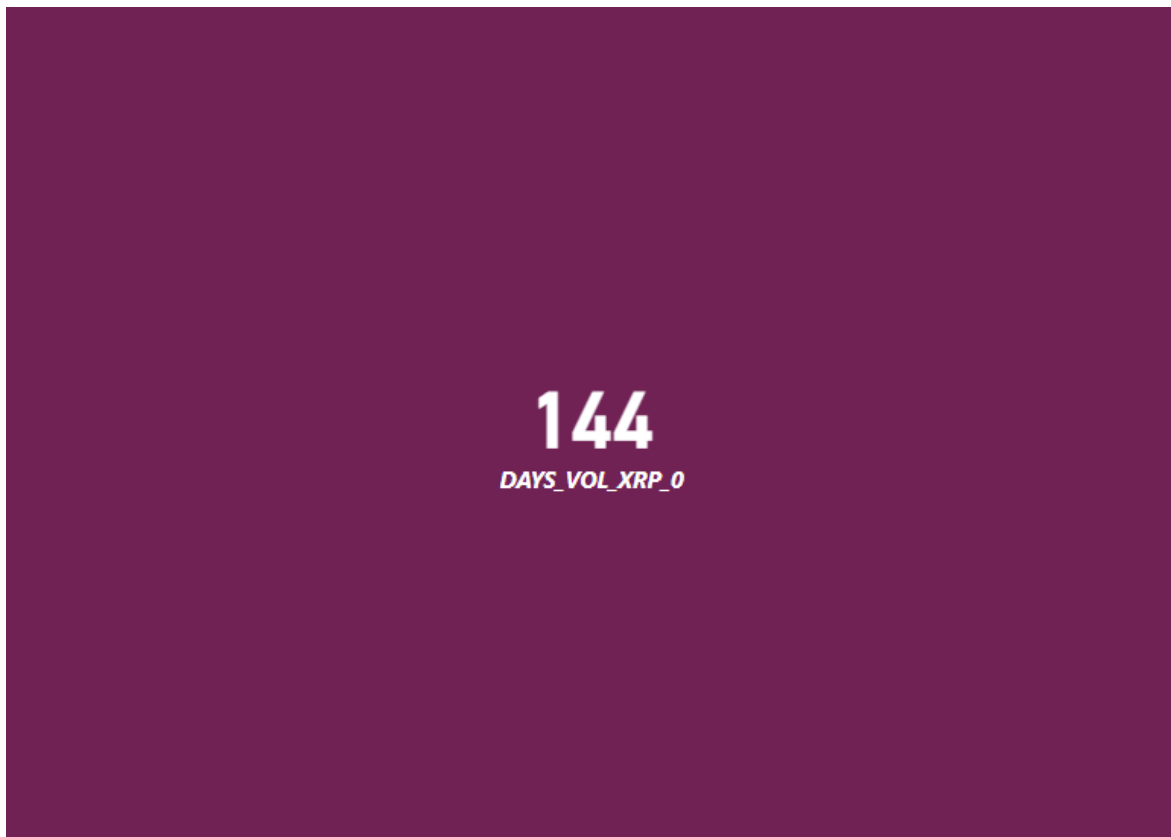


Figure 3.11

INFERENCE:

The number of days in which the volume of transaction of the coin XRP is equal to 0 is 144 days.

11. In Which month XRP was most profitable?

STEPS:

Measure:

$SUM_MRKTCAP_XRP = SUM(coin_XRP[Marketcap_XRP])$

Visualisations → Donut chart

Values → $SUM_MRKTCAP_XRP$

Legend → month_XRP

OUTPUT:

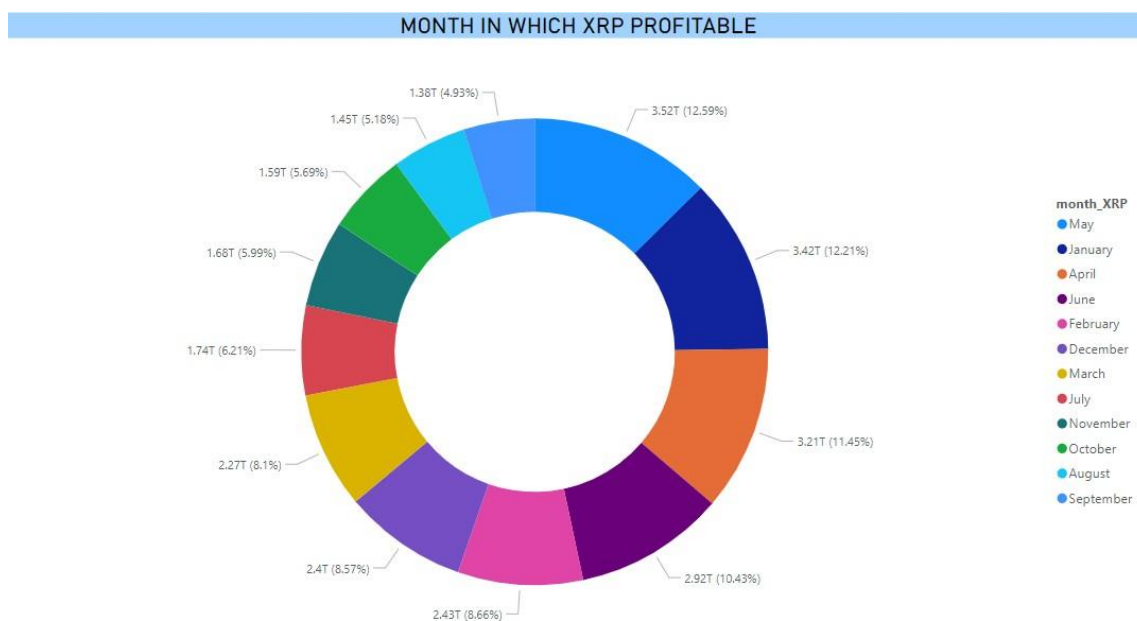


Figure 3.12 month in which XRP more profitable

INFERENCE:

The month in which XRP was most profitable is MAY

12. Find the top 2 coins out of 4 based on market cap?

STEPS:

Measures created for each coin for avg market cap

AVG_MRKTCAP_BINANCE = AVERAGE(coin_BinanceCoin[Marketcap_BINAN])

AVG_MRKTCAP_ETHERE = AVERAGE(coin_Ethereum[Marketcap_ETH])

AVG_MRKTCAP_TETHER = AVERAGE(coin_Tether[Marketcap_TETH])

AVG_MRKTCAP_XRP = AVERAGE(coin_XRP[Marketcap_XRP])

Visualisations → pie chart

Values → measures of average marketcap

OUTPUT:

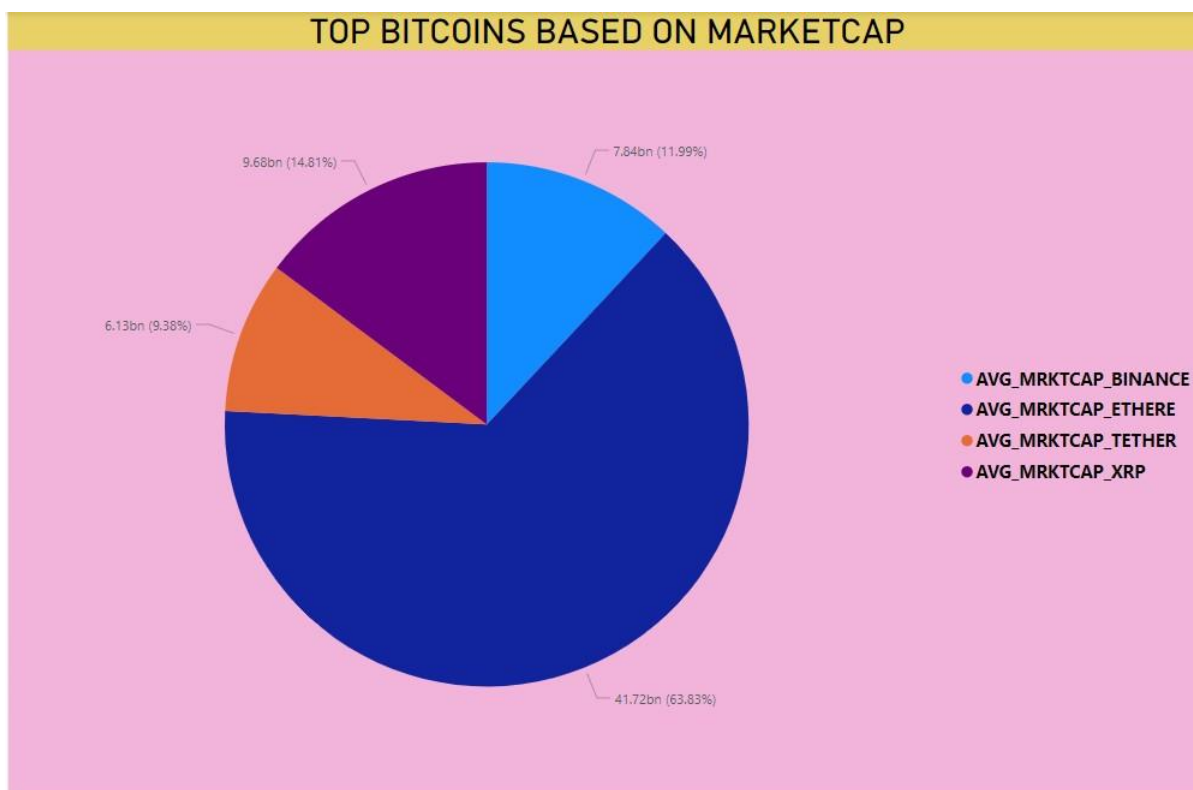


Fig 3.13 top bitcoins based on marketcap

INFERENCE:

Ethereum and XRP are the top 2 coins out of 4 based on market cap.

13. The number of positively deviated values in Ethereum (opening value is higher than closing value)?

STEPS:

Measure:

Count_pos_eth =

CALCULATE(**COUNT**(coin_Ethereum[POS/NEG_ETH]),coin_Ethereum[POS/NEG_ETH]
="POSITIVE")

Visualisations→card

Value→count_pos_eth

OUTPUT:

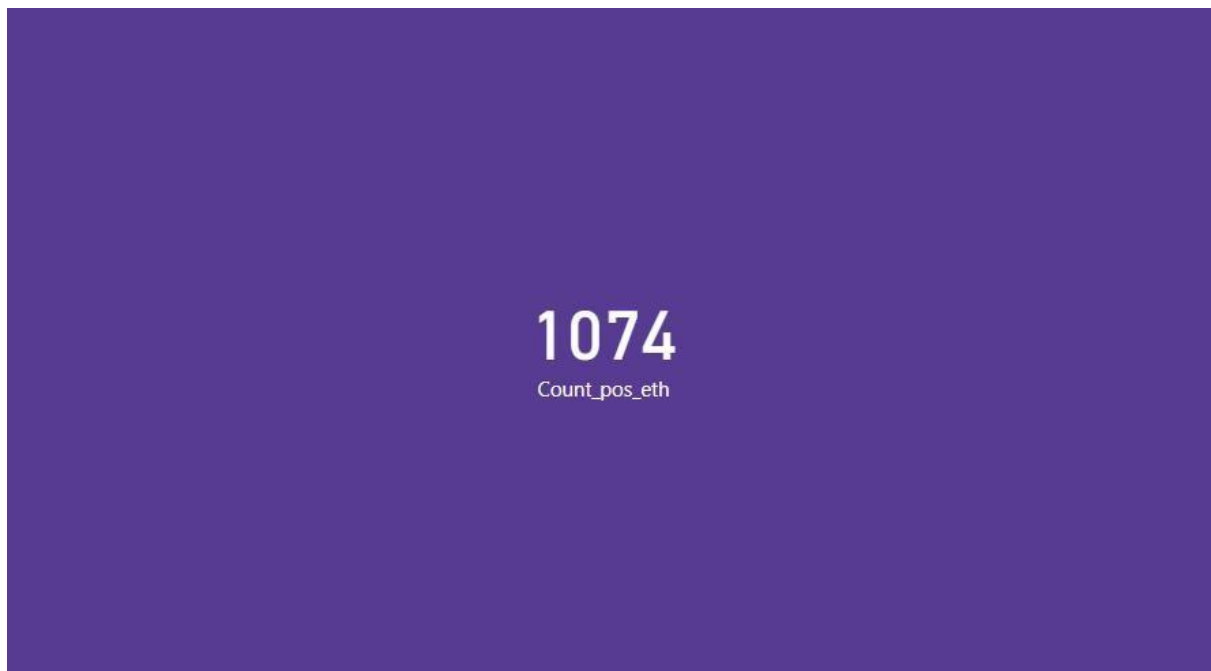


Figure 3.14

INFERENCE:

1074 values has positive deviated values in Ethereum i.e. opening value is higher than closing value.

14. Compare the opening value of coin XRP over the time period?

STEPS:

Visualizations → area chart

X axis → year_XRP

Y axis → Average of OPEN_XRP

OUTPUT:

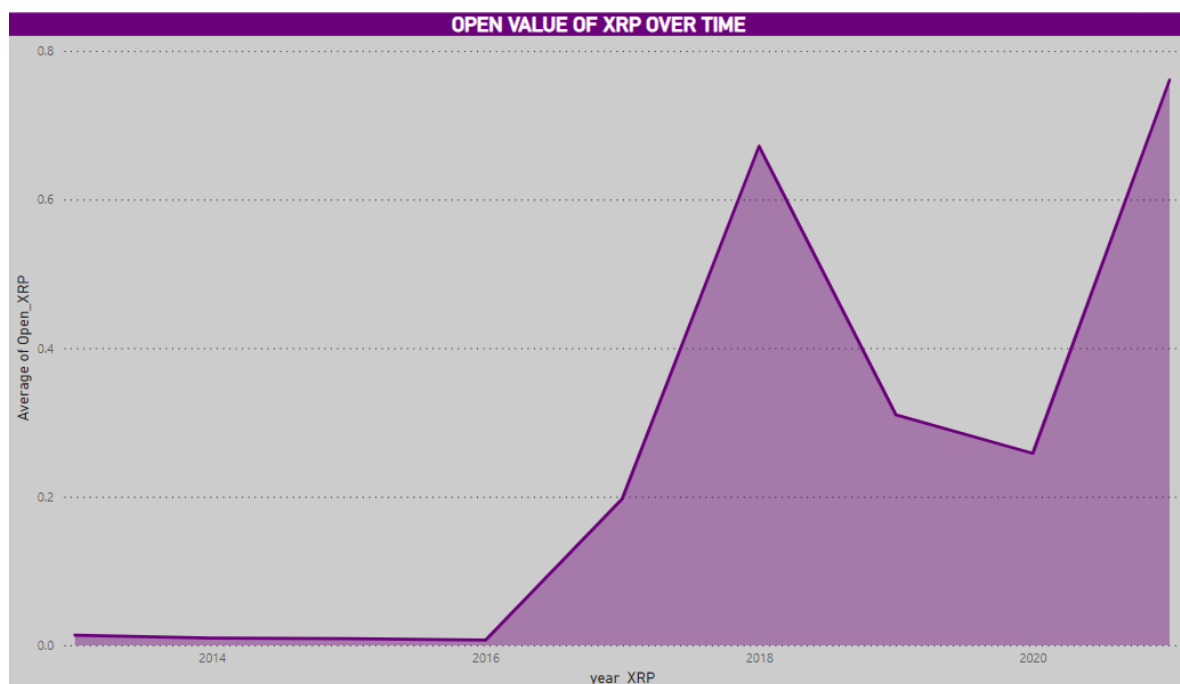


Figure 3.15 open value of XRP

INFERENCE:

- The opening value of the XRP a low value in the years 2014 and 2016
- It increased during the year 2016 to 2018
- Decreased slightly till 2020
- Then started increasing after 2020

15. Which among the coin Ethereum and XRP have recorded the high value in all the years?

STEPS:

Measure for min is created

$HI_XRP = \text{MAX}(\text{coin_XRP}[\text{High_XRP}])$

$HI_ETH = \text{MAX}(\text{coin_Ethereum}[\text{High_ETH}])$

Visualisations → donut chart

Values → measures

OUTPUT:

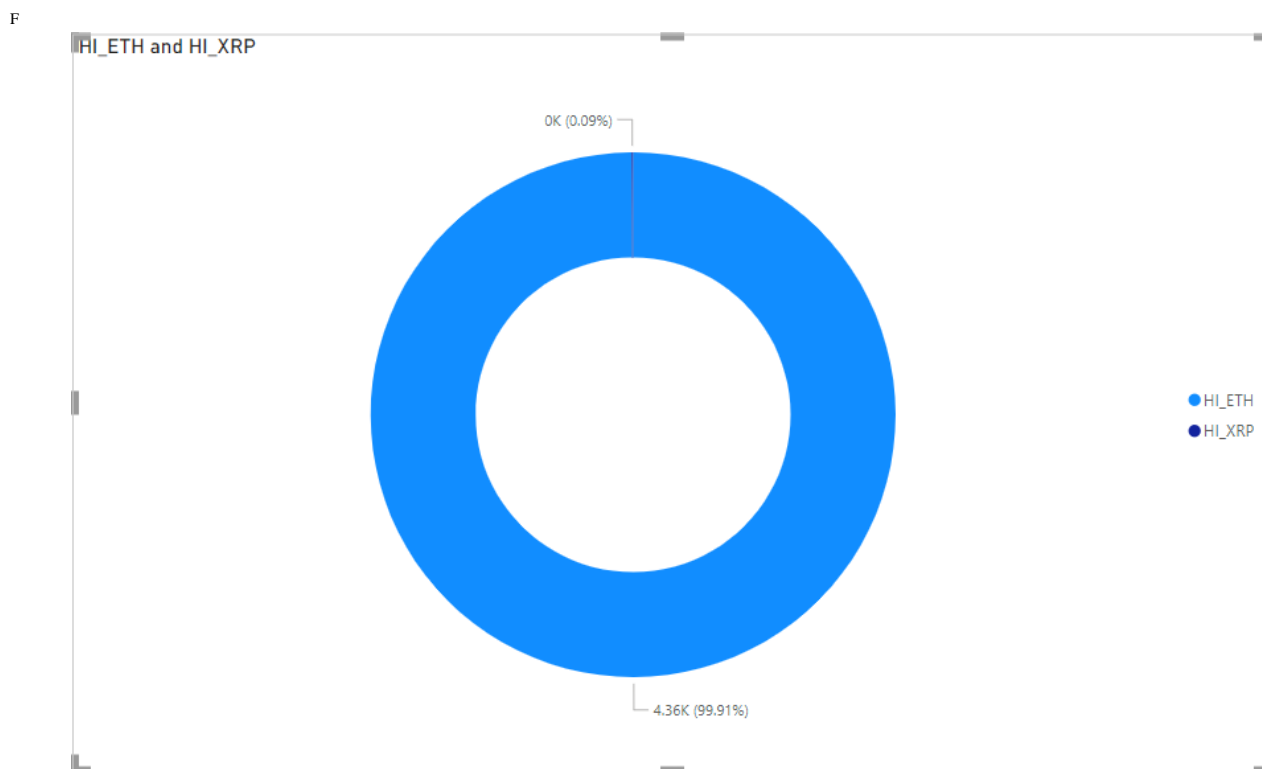


Figure 3.16 highest value in all years

INFERENCE:

Ethereum have recorded the high value in all the years among the coin Ethereum and XRP.

16. Which coin is the least profitable coin among the 4?

STEPS:

Measures created for average of marketcap of all coins

AVG_MRKTCAP_BINANCE = `AVERAGE(coin_BinanceCoin[Marketcap_BINAN])`

AVG_MRKTCAP_ETHERE = `AVERAGE(coin_Ethereum[Marketcap_ETH])`

AVG_MRKTCAP_TETHER = `AVERAGE(coin_Tether[Marketcap_TETH])`

AVG_MRKTCAP_XRP = `AVERAGE(coin_XRP[Marketcap_XRP])`

Visualisations → pie chart

Values → measure of average of marketcap

OUTPUT:

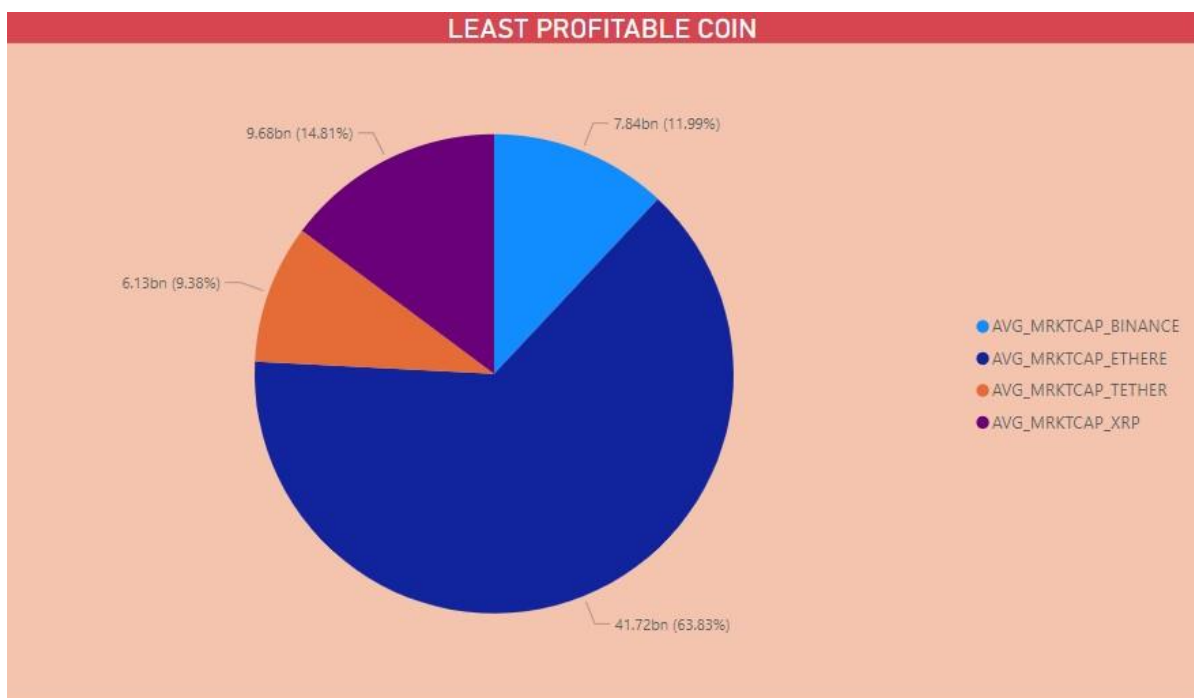


Fig 3.17 least profitable coin

INFERENCE:

Tether is the least profitable coin among the 4

17. Compare the closing value of Ethereum for each month and give the highest and lowest value recorded month.

STEPS:

Visualisations → tree map

Values → average of closing value of Ethereum.

OUTPUT:



Fig 3.18 closing value of Ethereum

INFERENCE:

Highest value □ may of a value of 730.83

Lowest value □ October of a value of 180.74

18. Count the number of negatively deviated days in the table Tether for each year.

STEPS:

Measure:

Count_neg_teth

=

`CALCULATE(COUNT(coin_Tether[POS/NEG_TETH]),coin_Tether[POS/NEG_TETH]="NEGATIVE")`

Slicer ☐ year_eth

Visualisation → card

Field → count_neg_eth

OUTPUT:

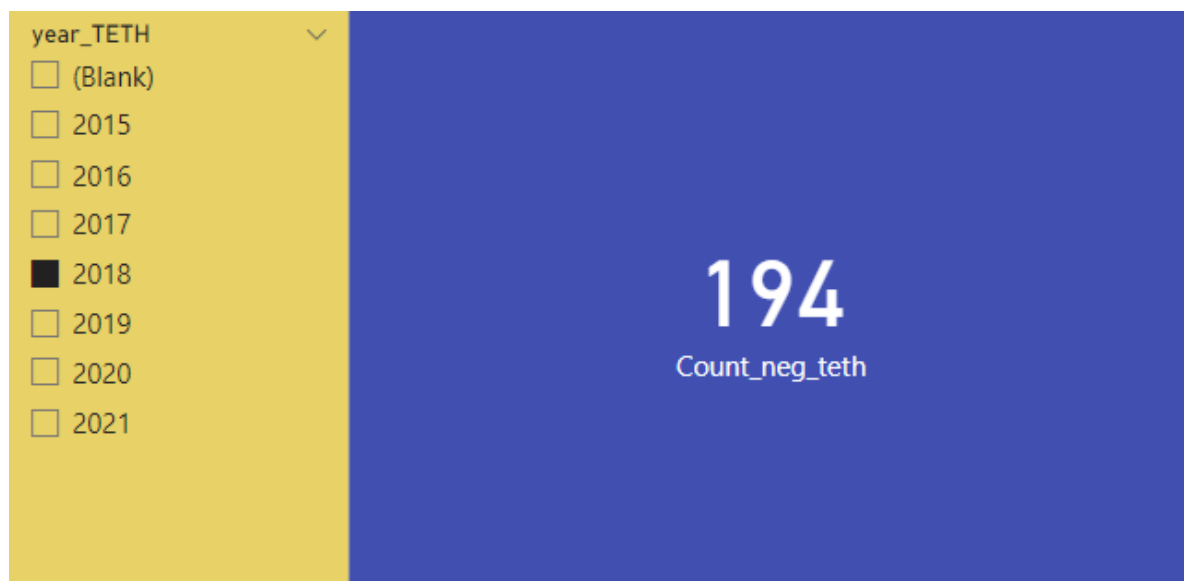


Figure 3.19

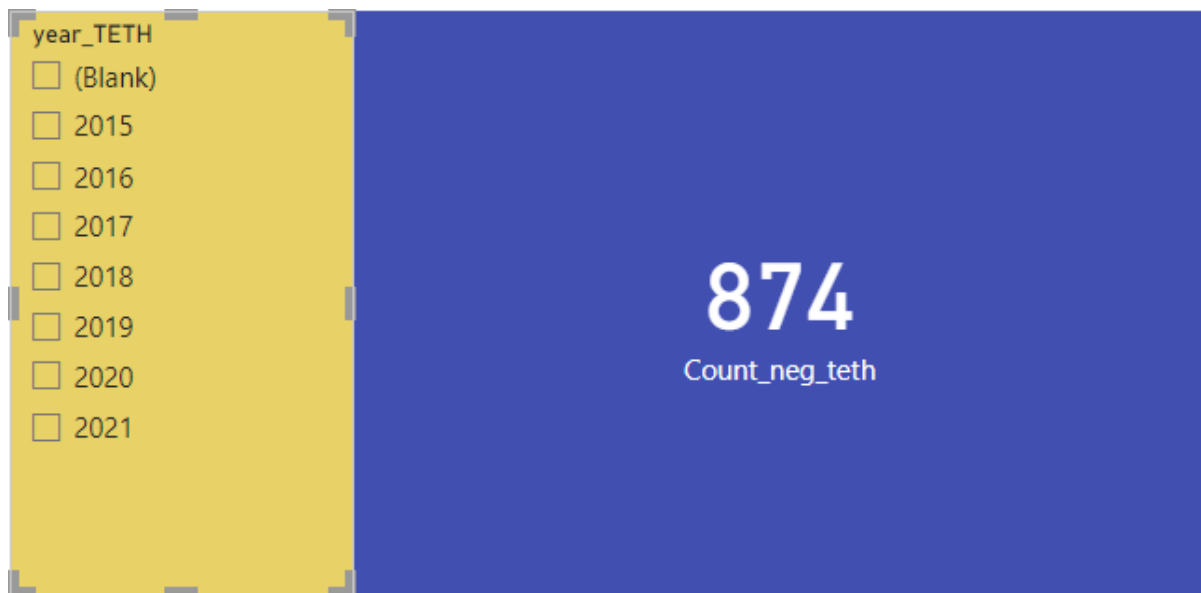


Figure 3.20

INFERENCE:

The number of negatively deviated days in the table Tether for each year are

- 2015 – 5 days
- 2016 – 51 days
- 2017 – 171 days
- 2018 – 194 days
- 2019 – 178 days
- 2020 – 189 days
- 2021 – 86 days
- Totally 874 days for all years

19. In which year the market cap of coin Tether was the highest?

STEPS:

Measure:

AVG_MRKTCAP_TETHER = `AVERAGE(coin_Tether[Marketcap_TETH])`

Visualisations → tree map

Category → year_TETH

Values → AVG_Marketcap_TETH

OUTPUT:

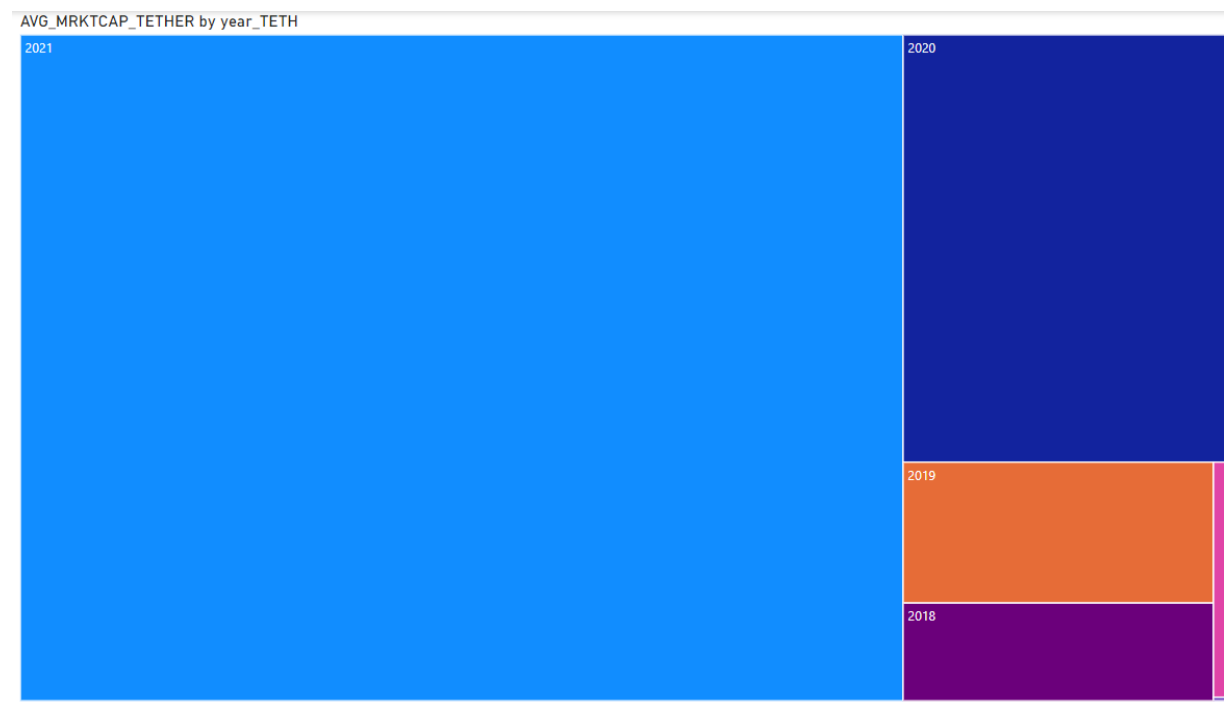


Figure 3.21 year in which marketcap of tether the highest

INFERENCE:

The year in which the market cap of coin Tether was the highest is 2021

20. Which coin has the best average deviation among 4 coins?

STEPS:

Visualisations → pie chart

Values → Average of deviation of binance , Ethereum and bitcoin

OUTPUT:

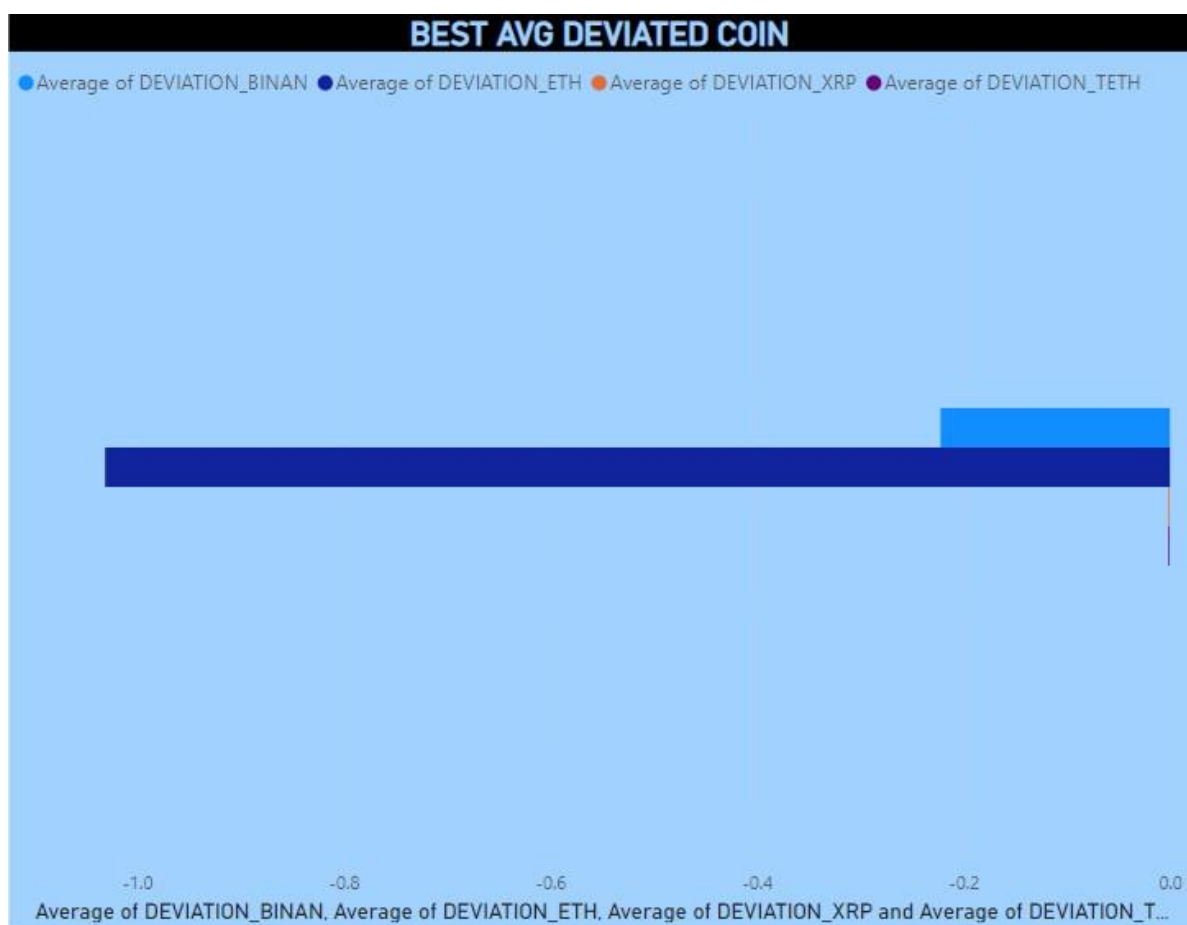


Figure 3.22 best deviated coin

INFERENCE:

The coin which has the best average deviation among 4 coins is Ethereum

CONCLUSION

Many analysis have been done on the top 4 cryptocurrencies in the world and the analysis gave us many pros and cons, which will help us to choose the best cryptocurrency to invest for. Since there are thousands of different cryptocurrencies in the world, people found difficulties to choose the better one among all cryptocurrencies to invest their money. According to market capitalization, which measures the combined value of all coins in circulation, the top 5 cryptocurrencies are: Bitcoin (BTC), Ethereum (ETH), Tether (USDT), Binance Coin (BNB), and XRP (XRP). Even after listing the top 5 among 14,000 cryptocurrencies, it is hard to choose the right one, the coin which can be trusted. Many people have lost their investments by choosing the cryptocurrencies to invest in a wrong way. Many people lose their investment by choosing untrusted cryptocurrencies. Normally people store their cryptocurrencies on their crypto wallet files on their computers. Therefore, they can be stolen if there is no proper security. Since cryptocurrency investment includes real time money, profit, loss, at first a better analysed overview of all those cryptocurrencies is required for every customer for choosing among those coins. For choosing those cryptocurrencies to invest for, this analysis will be very useful.

REFERENCES

- I. <https://www.oswego.edu/cts/basics-about-cryptocurrency#:~:text=A%20cryptocurrency%20is%20a%20digital,you%20need%20a%20cryptocurrency%20wallet>.
- II. <https://www.kaspersky.com/resource-center/definitions/what-is-cryptocurrency>
- III. <https://www.investopedia.com/terms/c/cryptocurrency.asp>
- IV. <https://www.investopedia.com/analyze-crypto-6456223#:~:text=A%20cryptocurrency%20analysis%20involves%20examining,to%20determine%20its%20trends%20better>.