

MGMT Capstone Project PPC - Smart Portfolio Builder for Crypto Assets

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Agenda

- Quick refresher on our project
- Where we left off in MSCI 401
- What we changed for 402
- Algorithm Update
- Demo
- Next Steps

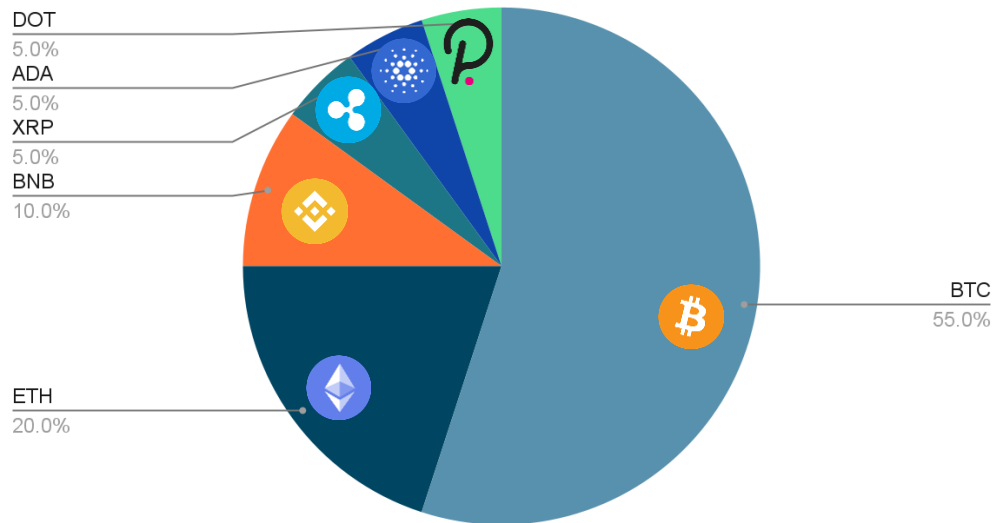


Need Statement

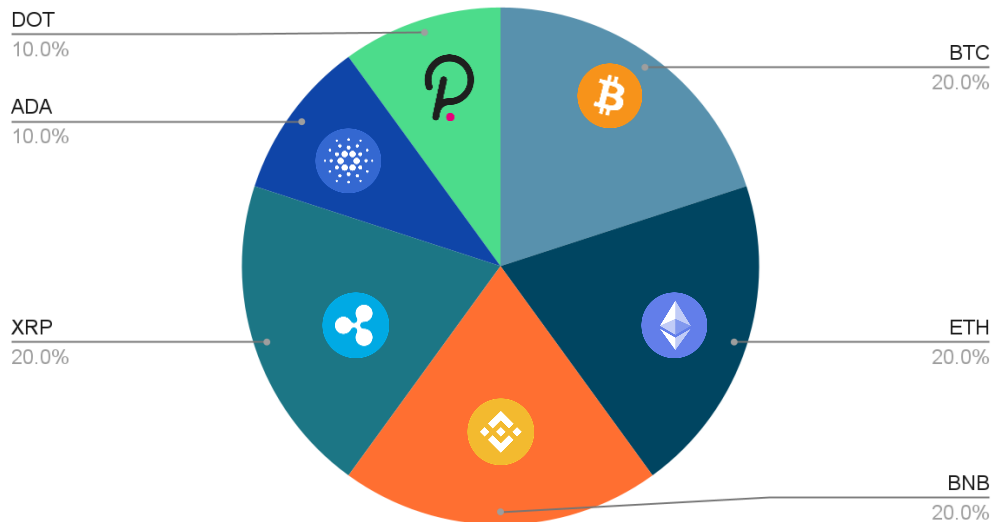
Need Statement: “Need for a tool that assists users with making safe, educated decisions regarding which holdings to purchase in the cryptocurrency space as the market grows and asset classes evolve.”

Smart Crypto Portfolio Building

Low Risk Portfolio



High Risk Portfolio





Where we left off at MSCI 401

- Initial problem/market analysis
- Potential user Analysis
- Finalized design objectives
- Second Iteration of solution prototyping
- Basic research on backend index building algorithm



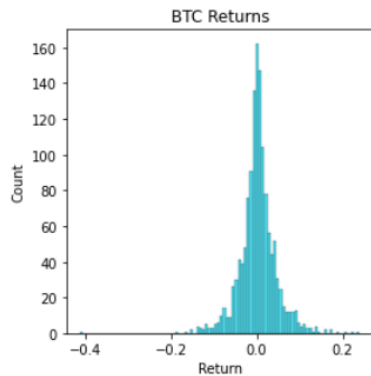
New For MSCI 402

- Removed wallet linking capability
 - Complex logic and time Limitation
 - Feedback received saying public is not likely to trust a 3rd party with their wallet
 - Legal & liability concerns
 - Can still make MVP without it (To build a tool that generates a diversified crypto portfolio tailored to the users risk tolerance)
- Functional Web App (WIP)
 - Feedback received, last design was too bright/flashy.
- Settled on risk evaluation models:
 - User Eval -> Crypto Eval -> Portfolio Allocation
 - Survey -> Weiss Rating -> Markowitz Optimization Model

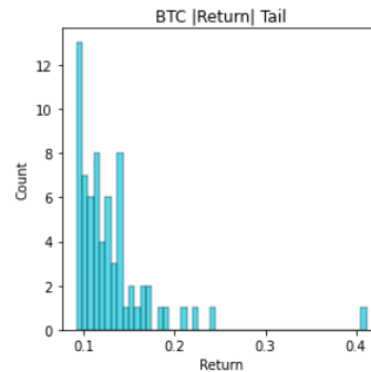


Tail Index Research

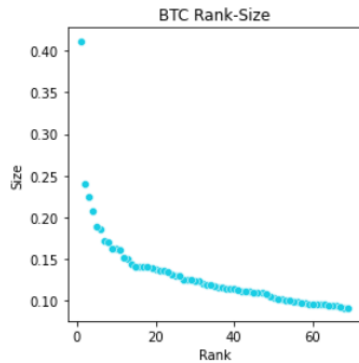
1)



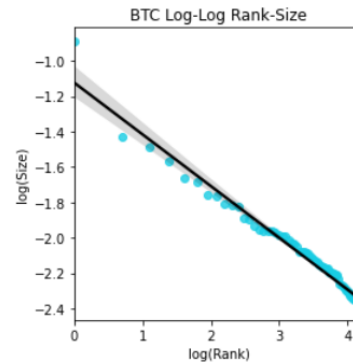
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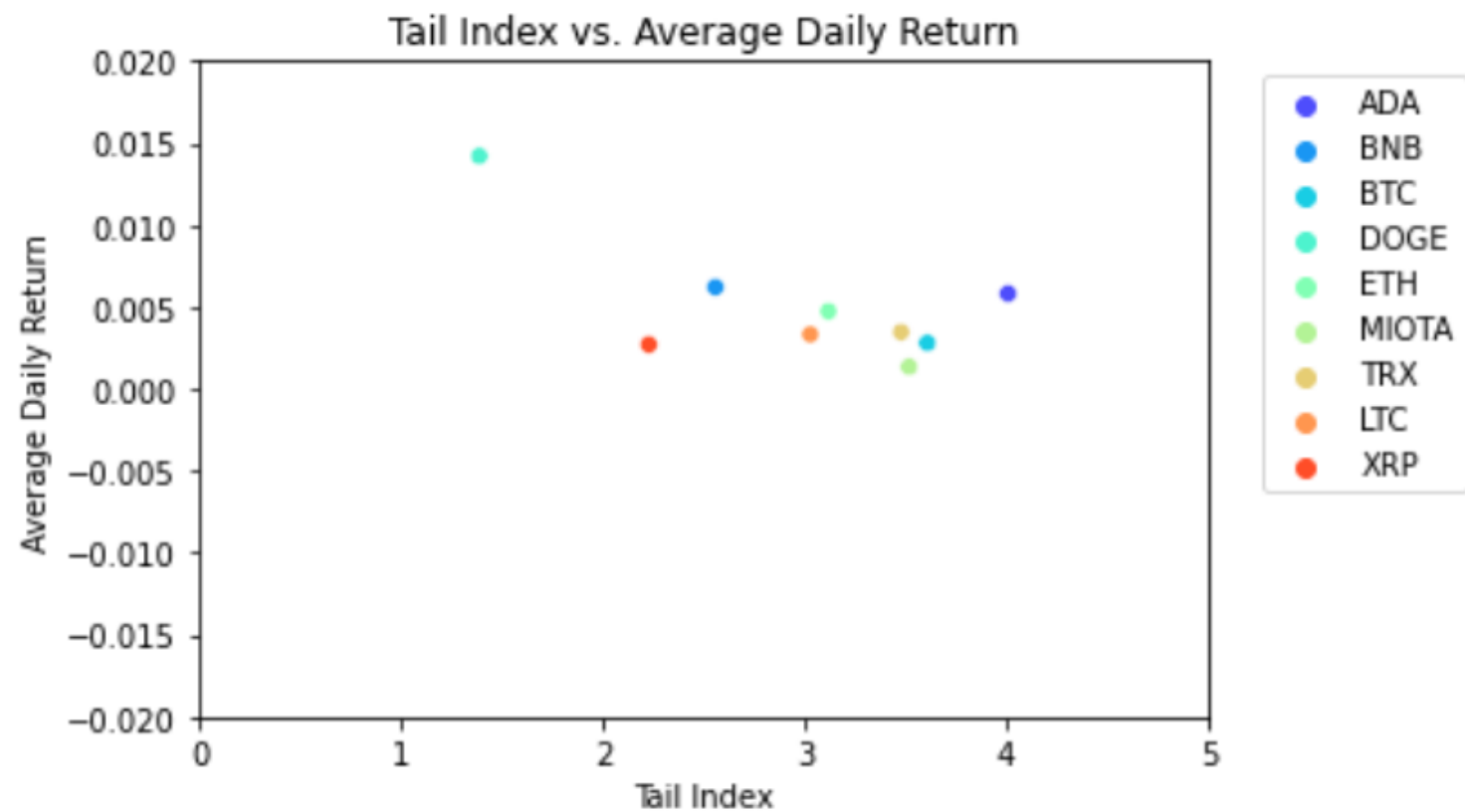


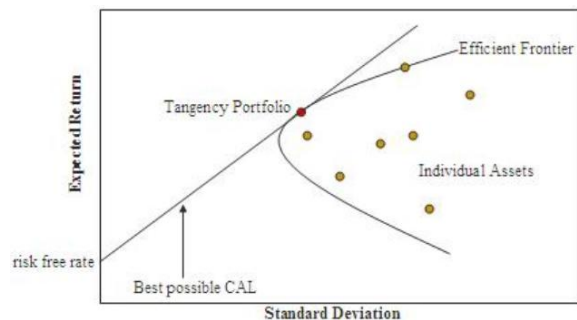
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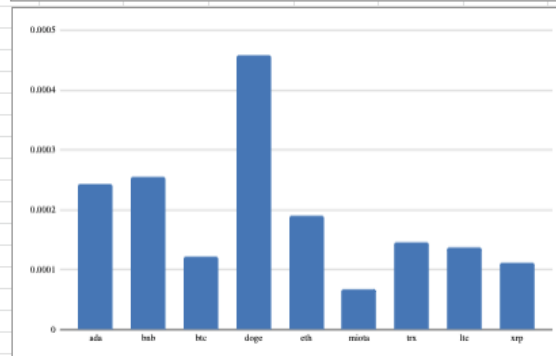
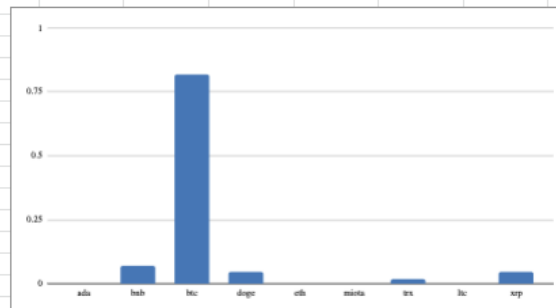




[illegible]

Asset Name	Allocation
ada	0
bnb	0.06976039
btc	0.81906053
doge	0.04478507
eth	0
miota	0
trx	0.01898895
ltc	0
xrp	0.04740503

	Mean Return
ada	0.00024389
bnb	0.00025443
btc	0.00012195
doge	0.00045841
eth	0.00018947
miota	0.00006637
trx	0.00014566
ltc	0.00013636
xrp	0.00011149





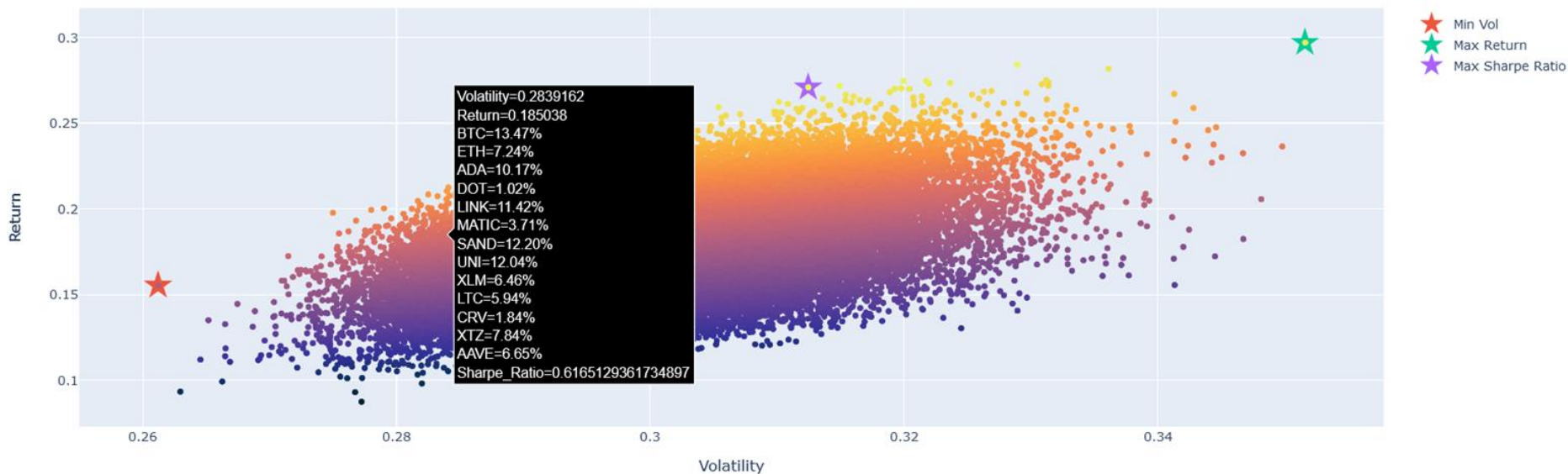
Random Portfolio Generation

	BTC	ETH	ADA	DOT	LINK	MATIC	SAND	UNI	XLM	LTC	CRV	XTZ	AAVE	Return	Volatility	Sharpe_Ratio
0	2.05%	10.82%	2.12%	10.17%	10.92%	6.77%	0.31%	0.90%	14.01%	16.43%	7.18%	5.69%	12.64%	0.138171	0.300741	0.426184
1	3.63%	8.62%	10.64%	6.27%	10.28%	9.51%	2.80%	4.37%	7.49%	7.76%	15.11%	3.19%	10.33%	0.173180	0.312457	0.522249
2	3.00%	4.85%	0.50%	1.70%	16.06%	17.49%	13.69%	3.79%	15.58%	19.37%	3.42%	0.54%	0.00%	0.217090	0.302352	0.684928
3	11.64%	13.56%	12.38%	3.72%	13.80%	10.73%	0.21%	13.61%	11.94%	1.55%	0.64%	0.42%	5.78%	0.156391	0.289934	0.504914
4	3.42%	16.80%	6.93%	15.61%	10.04%	1.94%	4.12%	4.79%	4.07%	15.59%	0.54%	10.41%	5.74%	0.133807	0.290167	0.426674
...
49995	6.83%	8.60%	1.50%	2.59%	10.92%	12.03%	8.23%	3.78%	15.94%	11.37%	1.38%	1.28%	15.55%	0.192795	0.292769	0.624367
49996	14.03%	9.07%	6.86%	11.03%	3.71%	4.25%	5.77%	13.40%	12.58%	7.96%	2.72%	5.43%	3.18%	0.145201	0.283029	0.477692
49997	15.52%	16.85%	2.85%	3.31%	1.17%	11.20%	6.21%	5.86%	5.95%	8.34%	8.02%	0.63%	14.10%	0.179812	0.289002	0.587581
49998	8.31%	8.94%	12.45%	8.43%	3.28%	0.35%	10.51%	7.39%	9.26%	12.07%	4.05%	8.41%	6.54%	0.154630	0.284535	0.508303
49999	3.24%	9.92%	13.35%	1.04%	10.33%	13.31%	12.27%	7.82%	4.92%	4.14%	5.49%	1.20%	12.97%	0.230758	0.306253	0.720835

50000 rows × 16 columns



Optimal Portfolios



Demo





Next Steps

- Further iteration on Markowitz Analysis
- Continue development
 - o Refine usage of Smart Contract & NFT
- Continuously iterating on design and features based on feedback

The End, thank you!

Q&A





Appendix





Get Started

Make money from
lunar portfolio

Welcome Back!

Enter your email and password to sign in


Email

Password

☐ Remember me

SIGN IN

Or log in with

 Continue with Google

 Continue with Facebook

Don't have an account? [Sign Up](#)

Welcome!

Use these awesome forms to login or create new account in your project for free.

Register With



or

Name

Gary

Email

Your email address

Password

Your password

☐ Remember me

SIGN UP

Already have an account? [Sign In](#)

Dashboard

Survey

ACCOUNT PAGES

Profile

Good Morning Bill,

this is your portfolio today.

Active Portfolio Status

GROSS BALANCE

\$123 000 +\$5400

Portfolio

Re-evaluate Your Risk Tolerance

Your risk tolerance may change as you become more experienced in the market, have new investment goals or if your financial situation changes.

Re-evaluate

Latest Crypto Related Information



Security Tokens

What are Security Tokens? How are they used? Why is it being used? (5 min read)

Read



Stable Coins

Stable Coins 101: What You Need to Know (10 min read)

Read

Overall Performance

(+5%) more in 2021



Dashboard

Survey

ACCOUNT PAGES

Profile



Gary Yong
yonggary329@gmail.com

OVERVIEW

TEAMS

PROJECTS

Paper Trading Balance

Current Value

\$438 **+\$438**

Starting Balance

\$10 000

Reset Balance

Profile Information

Hi, I'm Esthera Jackson, Decisions: If you can't decide, the answer is no. If two equally difficult paths, choose the one more painful in the short term (pain avoidance is creating an illusion of equality).

Full Name: Esthera Jackson**Mobile:** (44) 123 1234 123**Email:** esthera@simmmple.com**Location:** United States**Social Media:**

Evaluation History

Very Conservative	2022/02/01
Very Conservative	2022/01/11
Very Conservative	2022/01/01
Very Conservative	2021/11/01
Very Conservative	2021/06/01

Projects

Architects design houses



Project #2

Project #2

July 2nd, 2021



Security Tokens

What are Security Tokens? How are they used? Why is it being used?

(5 min read)

[Read](#)

June 2nd, 2021



Stable Coins

Stable Coins 101: What You Need to Know (10 min read)

[Read](#)

June 2nd, 2021



Blockchain

Blockchain 101: What You Need to Know (10 min read)

[Read](#)

User Risk Evaluation

Lets do a quick check on your personal risk tolerance, this will help us provide you with a balanced crypto portfolio that fits you best. Answer the following 11 simple multiple choice questions that evaluates your risk tolerance based on experience, habit, goal, and financial standing.

📈 Experience

📊 Goal

🔍 Financial Standing

Start Risk Survey



ACCOUNT PAGES

1 Question 1: Experience

Is this your first time investing in crypto?

☐ Yes☐ No**2** Question 2: Experience**3** Question 3: Goal**4** Question 4: Goal**5** Question 5: Habit**6** Question 6: Habit**7** Question 7: Habit**8** Question 8: Habit**9** Question 9: Habit

ACCOUNT PAGES



Very Conservative

Overall Score [-30 to -19]

Your risk tolerance is Very Conservative. This means that you are new to investing in crypto, and have a fear of losing your initial investment. Keep in mind that crypto is way more volatile than most other investment assets but we have created one of the safest diversified crypto portfolios with stable coins to fit your needs. Visit our learning page for some additional knowledge about this market and how you can make further informed decisions to increase your potential gains

CHECK OUT YOUR NEW PORTFOLIO

REDO SURVEY

ACCOUNT PAGES



Conservative

Overall Score [-18 to -08]

Your risk tolerance has been evaluated as Conservative. This means that although you may know some sounding strategies for investing in general, you still need to work on solidifying some of the fundamental knowledge that could help you in difficult markets. We have provided you with a relatively safe crypto portfolio to start with, hopefully as you stay in this market longer, your risk tolerance will improve overtime. Visit our learning pages to learn more about the crypto market to gain more confidence and maximize future returns.

CHECK OUT YOUR NEW PORTFOLIO

REDO SURVEY



Dashboard



Survey

ACCOUNT PAGES



Profile



Moderate

Overall Score [-07 to 5]

Your risk tolerance has been evaluated as Moderate. This means that although you have more to learn to improve your investment strategy and mindset, you are capable of taking on a controlled level of risk. Thus, we will provide you with a portfolio that could fluctuate relatively more aggressively in the short term but has more potential for higher gains in the medium to long term.

[CHECK OUT YOUR NEW PORTFOLIO](#)[REDO SURVEY](#)

ACCOUNT PAGES



Aggressive

Overall Score [6 to 16]

Your risk tolerance has been evaluated as aggressive. This means that you understand the market and are comfortable with seeing your portfolio fluctuate. Because of this, we will provide one of our more risky crypto portfolios for you to begin with. You will see high short term volatility with this portfolio which means significant losses at times, but it could also yield much higher long term returns.

CHECK OUT YOUR NEW PORTFOLIO

REDO SURVEY

ACCOUNT PAGES



Very Aggressive

Overall Score [17 to 28]

Your risk tolerance has been evaluated as Very Aggressive. This means that you have very sounding techniques and mindset when it comes to investing in general. Although crypto market can be very volatile at times, you know how to react and stike high returns. We are providing you with one of the most risky portfolio to get started with, this portfolio could very often see large fluctuations in value, however, in the medium to long term, we could see exponitial returns from this portfolio.

[CHECK OUT YOUR NEW PORTFOLIO](#)[REDO SURVEY](#)

Hi Gary,

Based on our evaluation of your risk tolerance, we came up with the following diversified crypto portfolio.

Portfolio Allowcation

GROSS BALANCE
\$10 000



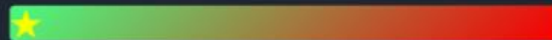
21%
45%
12%
9%

Portfolio

Risk Preference

Very Conservative

Your risk tolerance has been evaluated as very conservative. This means that either you are new to investing in crypto, or you have habits that could lead you to massive losses in a risky market.



Re-evaluate Your Risk Tolerance

You can re-do the risk evaluation survey anytime to make a new diversified crypto portfolio that perfectly fits your risk tolerance levels.

If you want to redo the survey, click the button below and we will take you back.

Re-evaluate

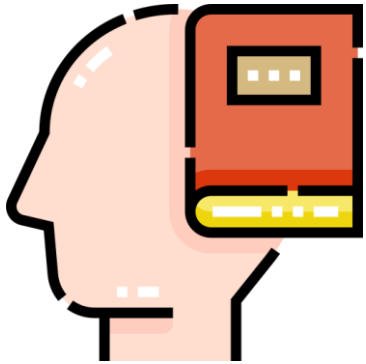
Historical Performance

(+5%) more in 2021





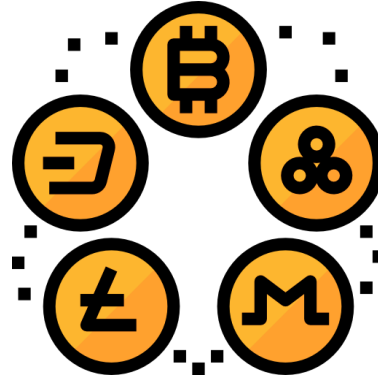
Problem Causes



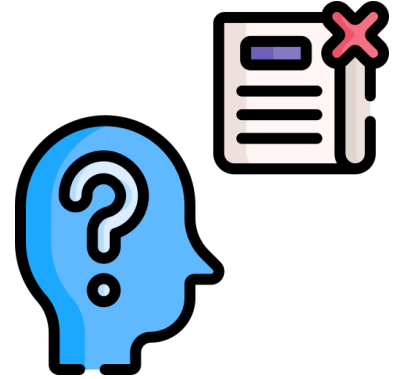
Familiarity



Capital Gain



Choices



Misinformation

Which Coins to Use?

- Over 4000 different cryptocurrencies exist
- Many don't have a following or trading volume
- Need a way to separate garbage coins and legitimate coins
- Weiss Crypto Rating
 - Long time ratings company founded in 1971
 - Covers over 40,000 stocks, mutual funds and ETFs
 - Weiss Crypto ratings founded in 2018





Weiss Ratings

- Technology Model
- Adoption Model
- Risk Model
- Momentum Model
- Availability Model
- Liquidity Model
- Include all coins with a C rating or better
- DST updates as Weiss ratings update

Top Coins by Market Cap

Watch	Overall Rating	Crypto	Type	Technology/ Adoption Grade	Market Performance Grade	Price	24-Hour Change	24-Hour Volume	Market Cap	7-Day Price History
	B	Bitcoin (BTC)	Coin	A-	D	\$34,179.18	-1.26% ▼	\$14.80B	\$640.70B	
	B+↓	Ethereum (ETH)	Coin	A	D+	\$2,286.72	-1.02% ▼	\$14.73B	\$266.43B	
	C+	Ripple (XRP)	Coin	B-	D	\$0.66924100	-2.68% ▼	\$1.31B	\$66.92B	
	C	Binance (BNB)	Token>Coin	C-	D	\$310.93	1.38% ▲	\$1.20B	\$52.68B	
	C+↓	Cardano (ADA)	Coin	B-	C-	\$1.42	-1.24% ▼	\$792.27M	\$45.86B	

```
+ Code + Text

from google.colab import drive
drive.mount('/content/drive')

Mounted at /content/drive

[ ] import requests
    from google.colab import files
    import json

    OL = {
        "symbol": "symbol",
        "c1": "rating",
        "c2": "currency",
        "c3": "type",
        "c4": "tech_adoption_grade",
        "c5": "market_performance_grade",
        "c6": "price",
        "c7": "day_volume",
        "c8": "market_cap",
        "c9": "day_change"
    }

    RL = 'https://weisscrypto.com/en/cryptos/screener-query'
    params = {'key': 'value'}
    = requests.get(url = URL)
    response = r.json()
    atings = []
    or row in response['rows']:
        parsed = {}
        for key in COL.keys():
            if row[key] == '<span class="r-icon-lock r-platinu
                parsed[COL[key]] = row[key]
            ratings.append(parsed)
        print(ratings)

    ith open('/content/drive/MyDrive/data/ratings.json', 'w'
        f.write(json.dumps(ratings, indent=4))

ratings.json
/content/drive/MyDrive/data/ratings.json
1 [
2 {
3   "symbol": "BTC",
4   "rating": "B",
5   "currency": "Bitcoin",
6   "type": "Coin",
7   "tech_adoption_grade": "A-",
8   "market_performance_grade": "D",
9   "price": 33687.187966,
10  "day_volume": 14847482071.387321,
11  "market_cap": 631481699780.3824,
12  "day_change": -0.052277581
13 },
14 {
15   "symbol": "ETH",
16   "rating": "B+",
17   "currency": "Ethereum",
18   "type": "Coin",
19   "tech_adoption_grade": "A",
20   "market_performance_grade": "D+",
21   "price": 2215.868622,
22   "day_volume": 14175306785.995771,
23   "market_cap": 258170442380.35834,
24   "day_change": -0.049990712
25 },
26 {
27   "symbol": "XRP",
28   "rating": "C+",
29   "currency": "Ripple",
30   "type": "Coin",
31   "tech_adoption_grade": "B-",
32   "market_performance_grade": "D",
33   "price": 0.662528,
34   "day_volume": 1414235353.224845,
35   "market_cap": 66246412179.31059,
36   "day_change": -0.050932338
37 },
38 {
39   "symbol": "USD",
40   "rating": "B"
```