**Project Title: Monte Crypto**

**Team:**

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**Description:**

Looking at the performance of cryptocurrency as compared to stocks

How to maximizing portfolio performance – what’s the right mix of crypto, stocks, etc.

Assuming an initial investment of: $100,000

**Research Questions to Answer:**

What’s the ideal portfolio mix to maximize profit over a set time period? Assuming a higher risk investor to start.

* What has the best returns historically. What is likely to produce the best returns going forward?
* Use Monte-Carlo simulations

Was this changed or impacted by COVID?

* Is the ideal portfolio mix different before and after the pandemic

Specific case analysis: specific industry performance in the stock market. Balanced portfolio vs. high risk.

**Data Sets to be Used:**

1/1/15-12/31/19 as pre-COVID data

* Top 3 cryptocurrencies: Bitcoin, Ethereum, Litecoin
* S&P500, NASDAQ – pick a specific fund (i.e. Vanguard fund), SPY
* Individual stocks? Industry specific funds?
* Commodities: gold, silver, platinum, corn, soybean, wheat

1/1/15 – 10/31/20, including post-COVID data

Analysis based on daily closing prices. Use Monte Carlo simulations

**Rough Break Down of Tasks:**

* Set up the Group Repo (prior to class on 11/4)
* Identify where to pull data: (figure out data source by 11/4)
  + Rawad: Crypto Data
  + Ken: Agriculture commodities
  + Cassie: Metal commodities
  + Floriane: SPY
  + Antonio: Individual Stocks: Tech, Airline, Pharma
* Clean Data (between 11/4 and 11/7)
  + Nigil and Rawad
* Run statistical historical analysis: Pre-covid, and pre+post-covid
  + Nigil, Cassie, Ken
* Run Monte Carlo simulation: Pre-covid, and pre+post-covid
* Review results and answer initial project questions

**Portfolio Analysis**

**Part 1:**

**Individual analysis on each dataframes**

* Drop down menu with the different individual instruments
  + Stock, commodities, crypto, metals, SPY (equal weight to each individual stock, metal, etc for each investment type)

**Part 2:**

**Combine to find an optimal mix**

* Portfolio Mixes:
  + Even distribution (20% weight) to each investment type
    - Hypothesis: In-between the Cypto and Commodity portfolios
* Weighted towards one type of investment over another
  + Heavily weighted Crypto (50%)
    - Hypothesis: High Risk/High Return Portfolio
  + Heavily weighted commodities (50%)
    - Hypothesis: Low Risk/Low Return Portfolio

**Would the optimal mix be the same without COVID**

* Run the same analysis but cut the data off in early 2020 (up until February 1st)

**Part 3:**

**Future simulation – will certain instruments (i.e. crypto) continue to outperform other instruments**

* 3-4 Portfolio mixes
  + One weighted equally among all instruments
  + The remaining portfolios would be more heavily weighted to certain instruments
  + Should we do one analysis with no weighting?

**Output**

Dashboard with various graphs and analyses