

# CREATING A PROGRAM FOR INVESTMENT PORTFOLIOS



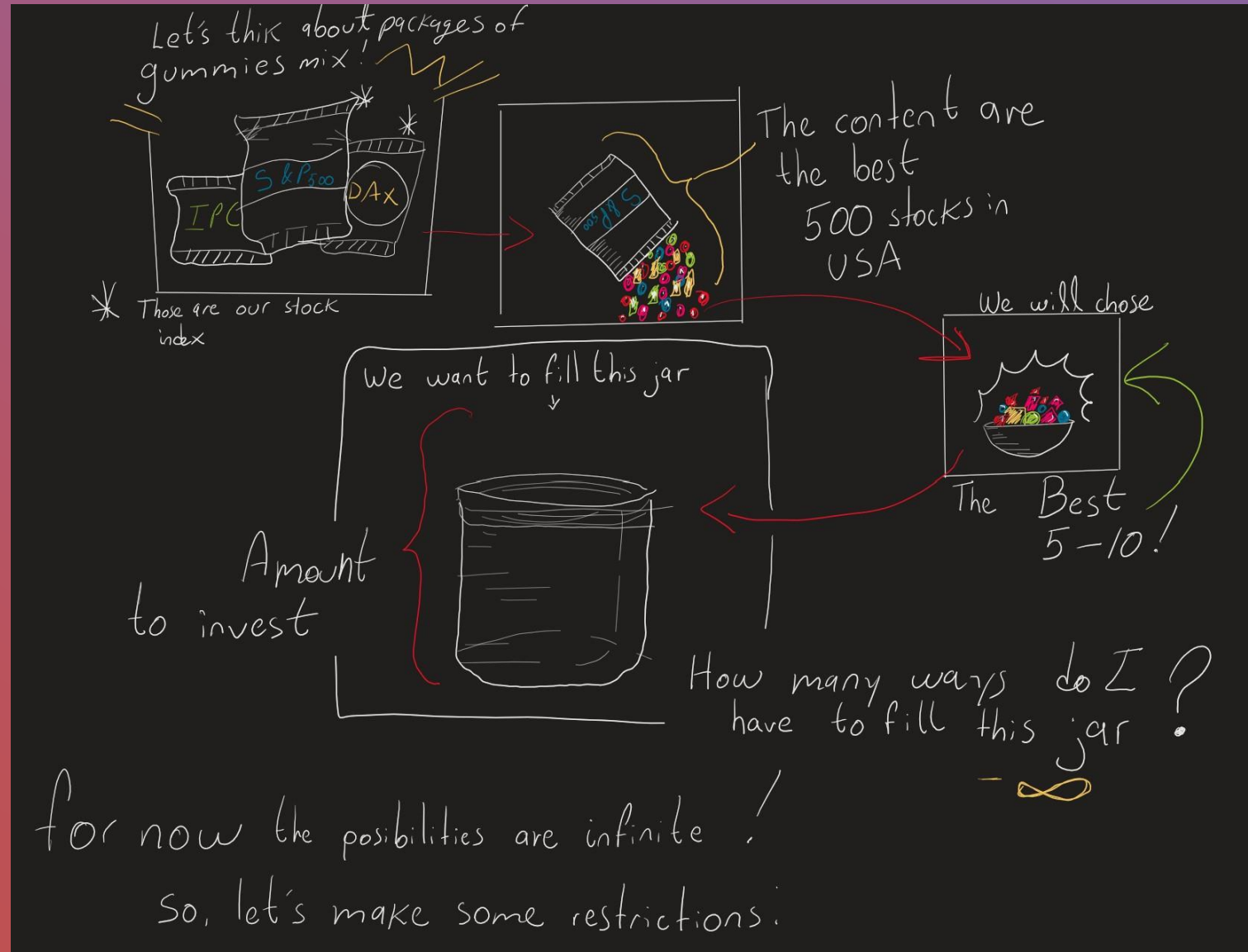
We are not trying to predict the behavior of the  
stocks (it is not a time series problem, no)

Improving the Markowitz efficient frontier

<https://youtu.be/Y3z64MW-gUA>

# INTRODUCTION

CREATING A PROGRAM FOR INVESTMENT  
PORTFOLIOS



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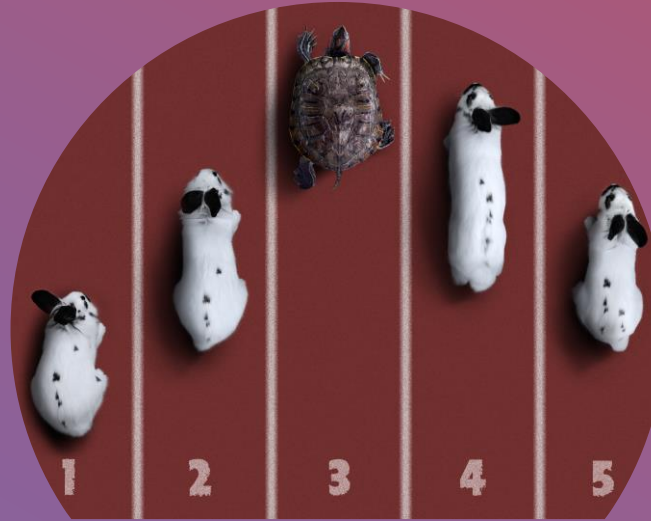


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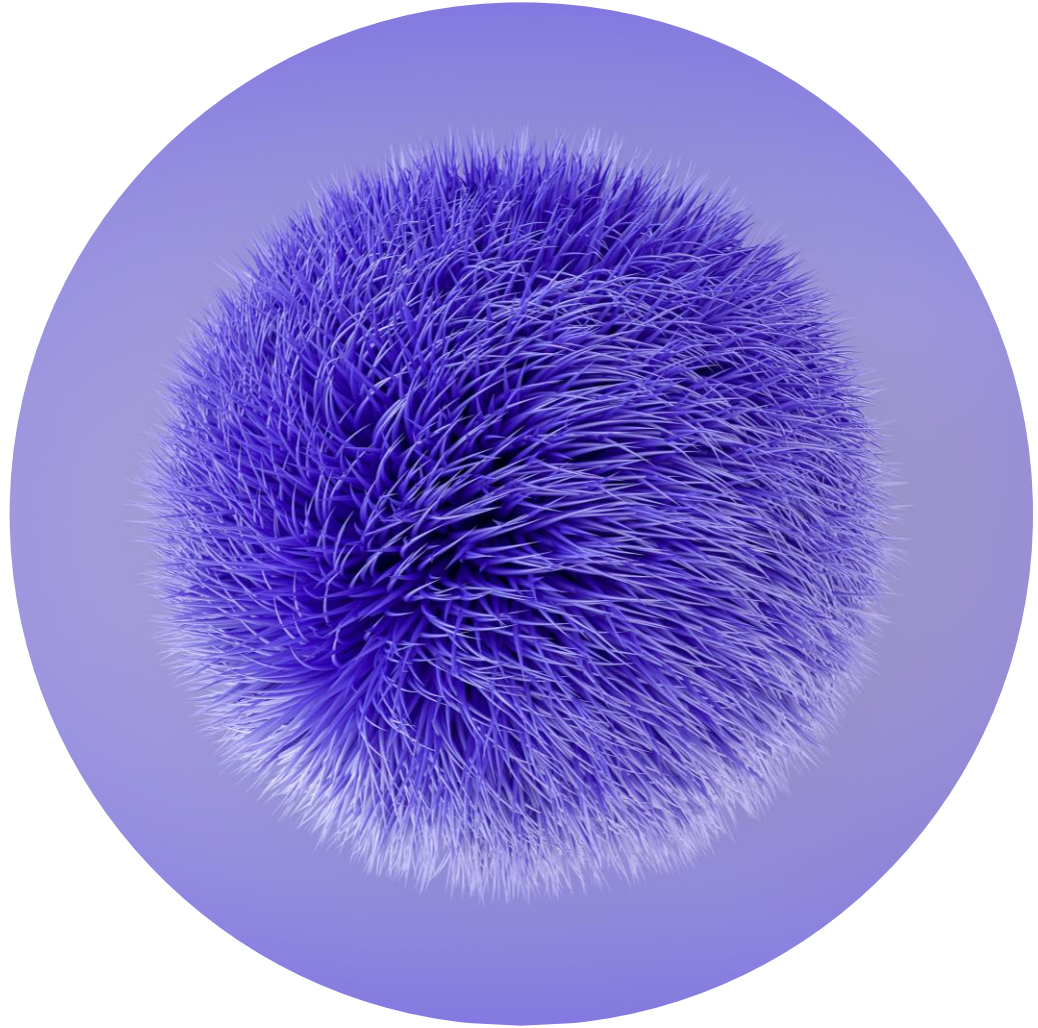
# RESTRICTIONS<sup>3</sup>

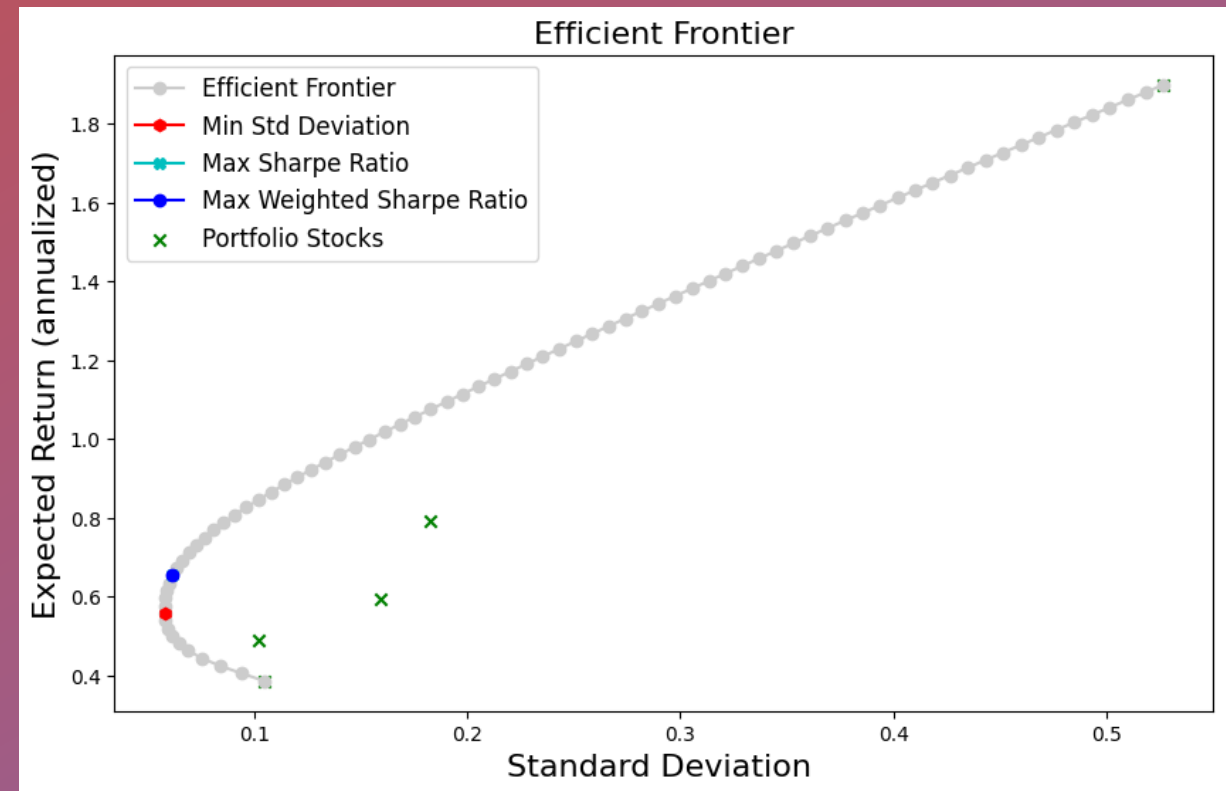
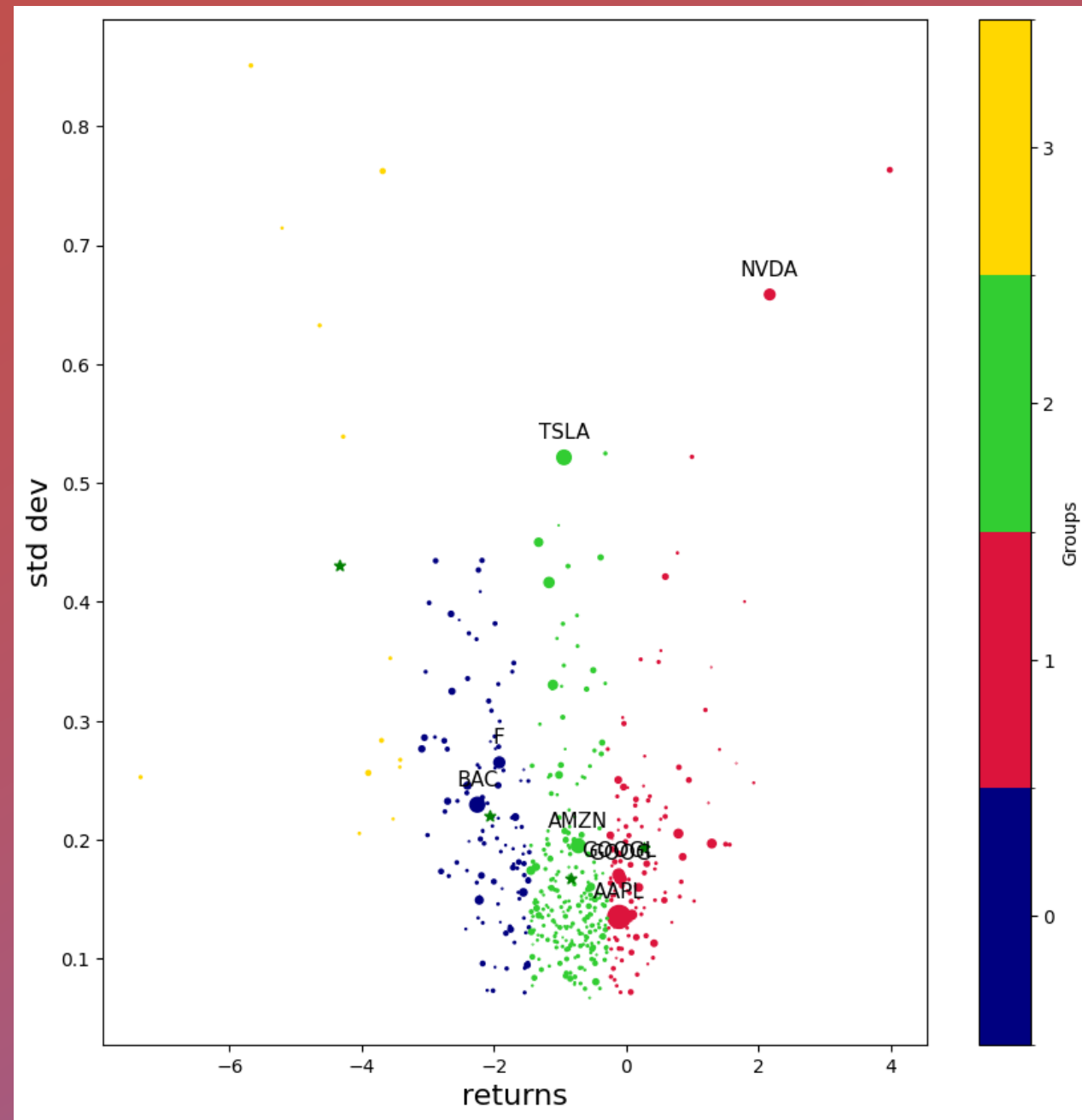
- We need to buy at least one share of each of the 5-10 stocks we chose.
- We cannot spend more than the established amount
- We cannot cut the gummies to fill the jar.



# Phase one

Determine the best  
investment strategy



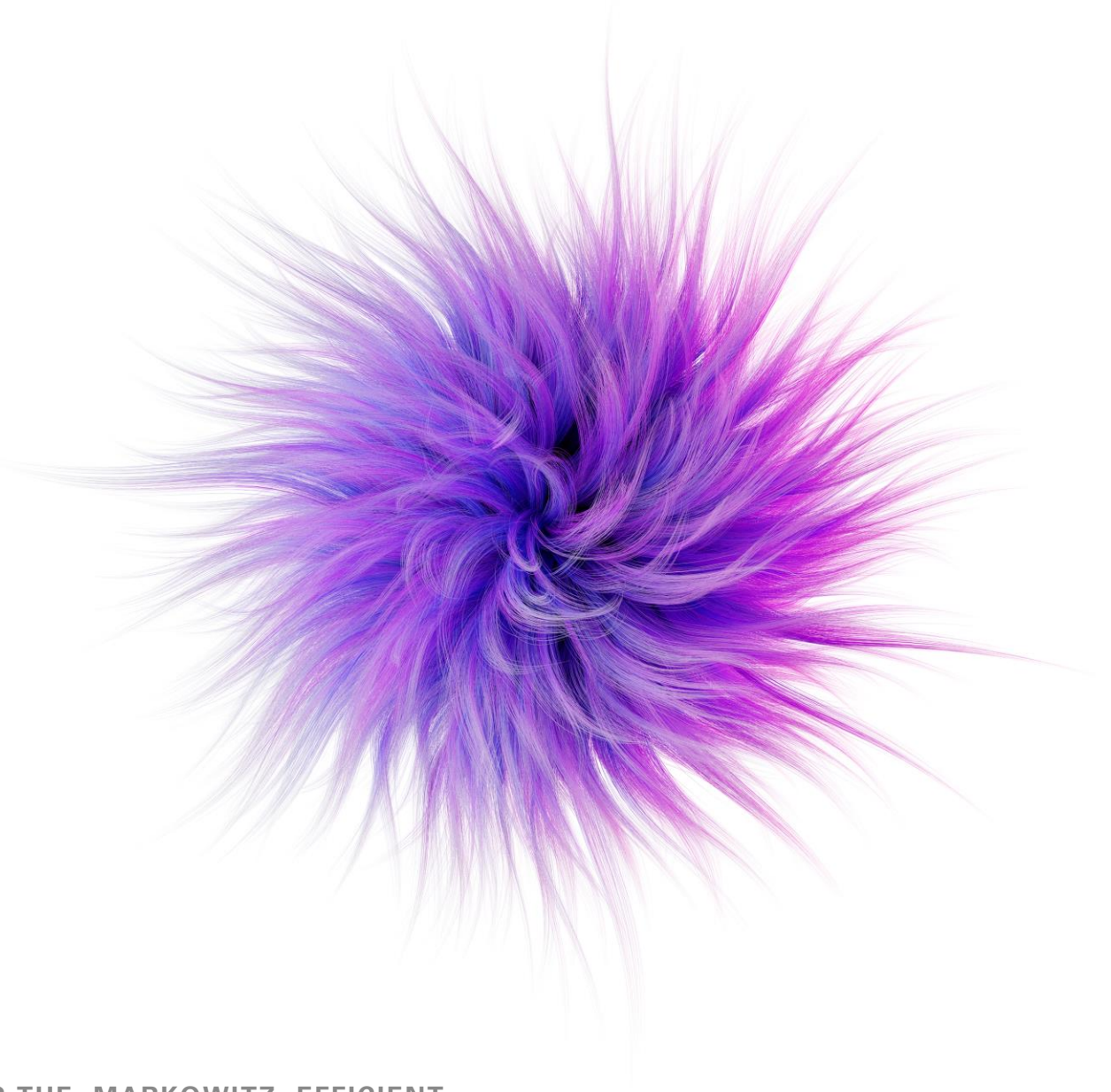


Stock	Weigth	#
DLR	24.3%	197
HCA	39.8%	145
MRNA	3.6%	31
TDY	13.1%	32
ZBRA	19.1%	71



# Phase two

Improving the level of risk



# CHARACTERISTICS

ADJUST THE LEVEL OF RISK ACCORDING TO THE CHARACTERISTICS OF EACH CLIENT  
(MACHINE LEARNING REGRESSION MODEL)



AGE: 30  
NETWORTH: 10,000  
INCOME: 3,000  
EDUCATION LEVEL: MASTER DEGREE  
MARRIED: YES  
KIDS: 0  
OCCUPATION: DATA SCIENTIST  
WILLINGNESS TO TAKE RISK: 4



AGE: 40  
NETWORTH: 50,000  
INCOME: 4,000  
EDUCATION LEVEL: PHD  
MARRIED: NO  
KIDS: 2  
OCCUPATION: RESEARCHER  
WILLINGNESS TO TAKE RISK: 2



AGE: 20  
NETWORTH: 1,000  
INCOME: 1,000  
EDUCATION LEVEL: STUDENT  
MARRIED: NO  
KIDS: 0  
OCCUPATION: STUDENT  
WILLINGNESS TO TAKE RISK: 5



AGE: 31  
NETWORTH: 100,000  
INCOME: 5,000  
EDUCATION LEVEL: PHD  
MARRIED: NO  
KIDS: 0  
OCCUPATION: LAWYER  
WILLINGNESS TO TAKE RISK: 3

# Phase three

Improving asset  
selection



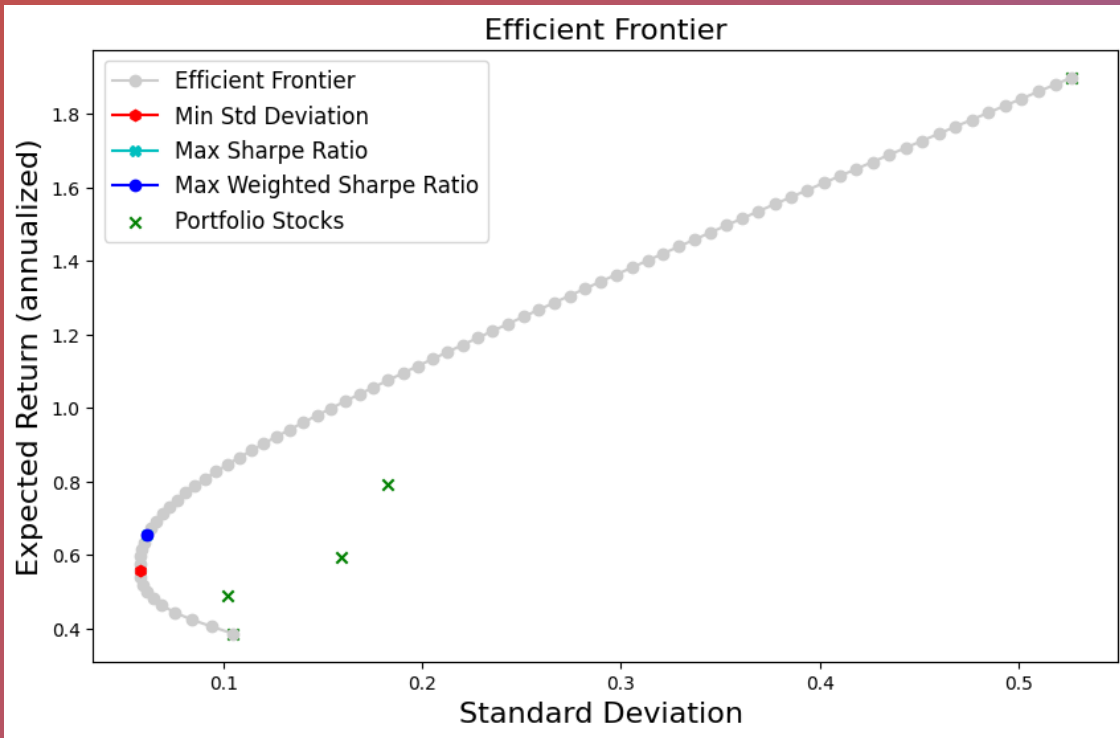




# Improve the risk associated with asset selection

Train a natural language model that translates the news of the assets of interest and adds extra value to the evaluated characteristic for decision making.





# Summary

This project aims to create a program for diagnosing, constructing, and optimizing investment portfolios.

Through the following strategy:

- Determining the efficient frontier and make a portfolio.
- Adjust the risk parameters according to the client.
- Improve asset selection by reading financial news



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# THANK YOU