

# Programming II – Exercise 2

## Project Description

### Automation of my Dividend Strategy

I am investing in stocks for several years now. But it was only recently when I decided to completely change my strategy.

Every investor loves cash flow, especially when you do not have to work for it. Passive and constant cash flow is what motivates me most to keep investing more and more money in the stock market. Thus, I decided to preferably invest into stocks which pay dividends. Dividends from international, well-run companies are payments you can most of the times rely on the next couple of decades.

This API implementation should when being called easily and quickly be able to tell the user, what the current market mood is, which stock prices are below their general trend and finally retrieve and calculate a verdict whether to buy the stock at the current time or not.

Important disclaimer: The calculation schema for yielding a “Buy” signal is only build upon my personal thoughts and what I personally see as a good schema. Please do not use this implementation without knowing its risks. This project does NOT include any investment recommendations.

The API consists of the following functionality:

- Getting the stock data:
  - ☒ Get all the relevant information from a stock knowing its ticker symbol. These information include the name of the stock, 52-weeks-high and 52-weeks-low and other relevant information.
  - ☒ Get the price of a stock from a certain time.
  - ☒ Get the dividend paid out per share.
- Constructing a Watchlist:
  - ☒ Here we store all the potential candidate stocks to eventually buy.
  - ☒ The Watchlist (WL) also shows the current mood in the stock market by displaying data from the Fear&Greed Index.
- Calculations:
  - ☒ Calculate the general trend and map it to any given period of time in the future. This calculation will be made up by myself.
  - ☒ The programme will calculate the stock's price at which I would consider buying it.
  - ☒ In the end, it will be able to tell my personal recommendation whether to buy the stock now or not, also depending on the current market mood.
- Statistics:
  - ☒ Be able to set a stock to being bought, telling the system which and how many stocks the user bought at which price.
  - ☒ Calculate the dividend the user will approximately receive.
  - ☒ Show the total amount of dividends the user will receive in a year.
  - ☒ Store the data to a local file.
  - ☒ Retrieve the previously stored data from a local file and update it.

The API is implemented in Python using Flask.

## Summary of HTTP Methods:

URL	Type	Description
/wl	GET	Returns the watchlist including all the stocks with their respective data
/buy	GET	Returns all the stocks which emit a "Buy" signal according to the calculation schema
/fng	GET	Returns the current market mood in form of the Fear&Greed-Index
/<tickersymbol>	GET	Returns all data of one specific stock
/buy/<tickersymbol>	POST	Mark a stock as bought. Every "transaction" has its unique ID. Parameters: price, number of shares
/<tickersymbol>/price	GET	Returns the current price of a given stock
/<tickersymbol>/div	GET	Get the dividend paid out per share of a given stock and the sum of the dividend the given company will pay the user this year
/<tickersymbol>/threshold	GET	Return the price at which a given stock is considered to buy. Note that this does not automatically yield a "Buy" signal.
/<tickersymbol>/recommendation	GET	Returns the recommendation of a given stock.
/dividends	GET	Return the sum of all dividends approximately received this year.
/save		Save bought stocks into a local file
/		Load the saved local file about bought stocks
/delete/<transaction_id>	DELETE	Delete a bought stock from the data

All the methods will be tested using PyTest. The project will be kept up to date on GitHub, where also under my profile you can track the progress and always access the project.