

Configuration Manual

MSc Artificial Intelligence
Practicum 2

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Configuration Manual

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Section 1 - Preparation of the execution environment

Instructions to set up the required environment on your computer to run the trading simulator with all the necessary dependencies and requirements

1.1 Clone the project from the GitHub repository

To perform this step, is required to have the GitHub libraries installed on your computer in order to use the 'git' command

```
git clone https://github.com/rodrigoEGnci/NLP\_News\_with\_DQN\_to\_Stock\_Market\_Predictions.git
```

1.2 Move to the simulator's location.

```
cd NLP_News_with_DQN_to_Stock_Market_Predictions/Simulator
```

1.3 Prepare Python Environment

To run this project, is required to have Python version 3.10 installed on your computer, as this is the version that supports the different library versions used

1.3.1 Set up Python 3.10 in your location

To perform this step, is required to have pyenv libraries installed on your computer in order to use the 'pyenv' command

```
pyenv install 3.10.13  
pyenv local 3.10.13
```

1.3.2 Set up Virtual Environment

```
python -m venv simulatorenv  
source simulatorenv/bin/activate
```

1.4 Install requirements . txt file

This file contains all the necessary libraries used in the project.

```
pip install -r requirements.txt
```

1.5 Check that everything has been installed correctly

Validate that the setup is complete and that you have everything you need to start running the project.

```
python -c "import dateutil.relativedelta, pandas, yfinance, numpy, torch, matplotlib, IPython; print('Successful Instalation!')"
```

Section 2 - Running the Simulation

To run the simulator is required to execute the "app.py" file. The execution of this program includes 4 configurable variables that must be defined when running it: "capital", "start_date", "end_date", and "company".

The meaning of each is:

capital: Amount of money you will start trading with, in int format (whole number).

start_date: Starting day for the simulation, in "YYYY-MM-DD" format.

end_date: Final day for the simulation, in "YYYY-MM-DD" format.

company: Symbol of the company you will invest in (Example: SPY, NVDA, MSFT, AAPL, AMZN, META, GOOGL, TSLA).

- **NOTE: The model being applied in the simulation was trained with SPY**

Example of execution command:

```
python app.py --capital 10000 --start_date 2015-05-03 --end_date 2020-05-03 --companion SPY
```

Section 3 – Organization of the Project Structure

The code downloaded from GitHub contains the data exploration process, the preprocessing steps to organize the information, the experiments performed to train various models, and the simulator. Its structure is as follows

