This programme combines a series of processes that target to facilitate the end user to extract useful insights from stock market data. The entire process was designed and implemented in such a way that serves three main functions:

1. Provides a robust tool to aid in the investor's capital and investment planning procedure.
2. Allows the user to alter or adjust specific programme's features by incorporating a higher level of flexibility.
3. Does not require any specialized technical knowledge from the end user and provides an intuitive and fairly easy to understand structure.

The data that were used for this programme were imported from NASDAQ stock exchange and Google financial history database**.** The relevant company datasets were downloaded from Google finance and were processed before being actually used in the programme. Columns were converted to numeric and date types and non-numeric values were denoted as NaN.

In order to give a general overview of the programme's structure and capabilities we shall divide its structure in three distinct, yet fully interactive, parts. The initial part involves the data loading process and a welcome message, the second part allows the user to select company and data frame and the third part is the analysis part along with the methods and tools used. All the above are considered through the lens of increased flexibility without though any sacrifice in the programme's usability. For instance, throughout the programme the user may press the 'Enter' button once to return to the last section. Subsequently, when the user decides that he / she wants to entirely exit the programme, the 'Enter' button may be pressed successively.

When the programme gets initialised, in terms of what the user sees, a welcome message and a short introduction to the programme are provided and at the same time the data are loading. Furthermore, a second optional level has been created, asking the user whether he want some further details that serve as the programme's guidelines.

Next the programme proceeds to the company selection by allowing the user to define the relevant name or symbol. The company selection process is designed to be fairly flexible, giving the user the ability to customize the search and simultaneously allowing him to retry in case of an invalid output. In this case the programme doesn't terminate but gives the user a second opportunity to modify its input and proceed normally to the following step.

When the user has successfully defined the desired company, the relevant data are being loaded. In case the relevant data are unavailable, the programme allows user to enter another company symbol. Generally, throughout the company selection process the user is given flexibility to adjust his / her search based on the name, the symbol, the sector or the industry. If the user does not specify the exact name or symbol, a list of possible matches is being generated to assist throughout the process.

At this level, in order to avoid possible information overload, an optional step has been created that allows the display of a maximum of 20 companies. If the user wishes to see all possible relevant recommendations he / she is allowed to proceed to a second list that displays the remaining relevant results. Otherwise he / she can proceed to the next step.

The next step includes the definition of a specific time period for which the relevant data will be gathered and analysed. The user can make a choice between preselected (default) dates or specify a

desired time frame. In the latter case, the possibility to alter this decision and ultimately proceed with the predefined set of dates has been provided.

After the company and time period have been defined the programme enters its analysis phase. The user is prompted to select if he / she wishes to proceed with statistical, technical or regression analysis. Whenever one selection has been made, the user can select the other two types of analysis as many times as he / she wishes. There is no limitation in the number or the order of the analysis section.

Three main categories have been defined in this section of the code. Descriptive statistics that include a table with the mean, sample standard deviation, relative standard deviation, minimum and maximum values of the selected data along with a correlation matrix. We decided to incorporate some visualization in the descriptive statistics category since we believe that it leads to a more interactive and engaging user experience.

In the next part of the programme, visualization tools have been heavily employed in order to give the user the ability to make sense of the data and turn them into meaningful insights. Technical indicators, including moving averages and time series amongst others, were employed so that the end user is able to recognize insightful and easy to interpret data patterns and ultimately gain added conviction.

The last part of the programme, gives the user the ability to perform regression analysis in order to model the stock market price value for a specific number of days; currently this is set to 10 days. Polynomial regression analysis was chosen, as an effort to better model non-linear phenomena and to increase the accuracy of the prediction itself.