Specification for P-assignment
187 Stock purchase

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Deskription

- The program will give guidance on stock purchases.
- To find out whether a chosen stock is worth buying or not, the user is able to choose between a technical or fundamental analysis.
- The program will read from multiple files to perform all necessary calculations.
- The program will be able to rank stocks according to their beta value.

Algorithm

```
• Repeat the following until the user wants to quit the program:
      a. Show menu
      b. Read the user's menu choice
      c. Execute choice using correct methods and functions

• For selection of a analysis:
      Repeat the following until the user wants to quit the program:
          a. Show available stocks
          b. Read the user's menu choice
          c. Execute choice using correct methods and functions.

• The program updates and reads the files needed to make all the necessary
  calculations and shows the result to the user.
```

Data structures

When the necessary files are updated, stock objects will be created to place the right data in to the object. All stocks will be placed in a list of available stocks.

Classes and methods

```
class Stock:

      ’’’
      Attributes:
      name:       Name of the company
      soli:       Soliditet
      pe:         Price per Earnings
      ps:         Price per Sales
      beta_value: The Beta value
      ’’’

def __init__(self, name, solidity, beta, pe, ps):

      self.name = name
      self.soli = solidity
      self.beta = beta
      self.pe = pe
      self.ps = ps

def __lt__(self, other):

      ’’’
      For sorting stocks by beta value
      :return: self.beta < other.beta
      ’’’

def update(self):

      ’’’
      Updates the stock with up to date information from fundamentals.txt.
      :return: nothing.
      ’’’

def fundamental_analysis(self):

      ’’’
      Gives the user the fundamental analysis of the stock.
      :return: A string with all information in the fundamental analysis.
      ’’’

def technical_analysis(self):

      ’’’
      Gives the user the technical analysis of the stock.
      :return: A string with all information in the technical analysis.
      ’’’
```

Functions

```
def read_movements_from_file(movement_name):

      ’’’
      Used to get data from movements or index file using movement_name.
      :param stock_name: The name of the
      :return: A list of the last days close price and the close price
      30 days from that day.
      ’’’

def read_fundamentals_from_file(file_name):

      ’’’
      Used to get data from file
      :param file_name: The file with the information
      :return: List of fundamental values // Solidity, P/e, P/s
      ’’’

def csv_reader(in_file):

      ’’’
      Used to read files saved from nasdaq’s webb site and put in the correct
      data in the correct file.
      :param in_file: File from nasdaq
      :return: nothing
      ’’’

def beta_value(name):

      ’’’
      :return: Calculated beta value.
      ’’’

def get_int_input(prompt_string):

      """
      Used to get an int from the user, asks again if input is not
      convertible to int
      :param prompt_string: the string explaining what to input :return: the
      int that was asked for
      """

def update_stocks():

      ’’’
      Updates the available_stock list with all available stocks.
      :return: nothing
      ’’’
```

```
def menu():
      """
      Used to display the menu:

      ----------------Meny-------------------
      What would you like to do?
      1 - Fundamental analysis (Long term)
      2 - Technical analysis (Short term)
      3 - List of available stocks by their beta value
      4 - Exit

      Which alternative do you choose?

      :return: (nothing)
      """

def menu_choice():
      """
      Used to get input on what the user wants to do
      :return: an int, the chosen menu option
      """

def execute(choice):
      """
      Used to execute the option that the user chose
      :param choice: an int corresponding the the chosen option
      :return: (nothing)
      """
```

General information

Information and data is fetched from http://www.nasdaqomxnordic.com/ and https://www.avanza.se/start. The fetched files includes more information than necessary to be able to build on the program after this specification is met.