Python Exercises - Introduction

Variables, Lists, Dictionaries, functions, read/write files

Exercise 1.1
- Create a variable named x and assign the value 50 to it.
- Display the sum of 50 + 10, using two variables: x and y.

Exercise 1.2
- Create a variable named school and assign the value "Skema" to it.
- Use the len method to print the length of the string

Exercise 1.3
- Create a list "greeks" with 3 strings: "delta", "gamma", "vega"
- Print the second element of the list
- Change the value from "vega" to "voma" in the list
- Using the append method add the "theta" item to the list
- Use the remove method to remove "delta" from the greeks list

Exercise 1.4
- With the append method, build a list named "list_integers" which contains all integers from 0 to 100
- Repeat the same with a comprehensive list

Exercise 1.5
Write a function "compute_max" that returns the maximum of two numbers val1 and val2.

Exercise 1.6
Write a function called showNumbers that takes a parameter called "limit" as input. It should print all the numbers between 0 and limit with a label to identify the even and odd numbers. For example, if the limit is 3, it should print:
0 EVEN
1 ODD

2 EVEN
3 ODD

Exercise 1.7
Build a dictionary named "equity" with
- keys: "stock.price", "stock.volatility", "stock.code"
- Values: 2500, 0.1, "GOOG"

WIth the get method print the content of the "stock.price" key
Change stock price from 2500 to 3500
Add the key/value "stock.list_indices"/["DowJones", "Nasdaq"] to the dictionary
Print the dictionary keys and values.

Exercise 1.8
Build a function average_return_stock_price which takes a text file containing stock prices as an input and:
- Read the text file
- Convert the text file into a python list with stock prices
- Computes the stock returns (stored in a list)
- Returns the average stock return

Test the function on the file estoril_stock_price.txt file.

Exercise 1.9
Build a function named "convert_spot_to_returns" which takes as arguments two text files and:

- Read the first text file
- Convert the text file into a python list with stock prices
- Computes the stock returns (stored in a list)
- Write the stock returns in the second text file (one stock return by line)

Exercise 1.10
Create a function unique(L) which removes the duplicate items of a list L.

Exercise 1.11
Create a function bisect(func, low, high, N) using the bisection method to find the root of a function "func", starting for the boundaries low and high, and iterating N times to find the root.