

Programming assignment: Fixing code

Main.py contains a snippet of a program meant to summarize a portfolio of swaps. The problem is that someone has maliciously changed parts of the code, such that now the program doesn't even run. Your task is to fix as many problems as you can. Tips:

- mistakes are all code-related (don't worry about the methodology)
- some mistakes are data-related, have a look at the files but don't change them
- each bug can be fixed by changing just one line
- some parts are very inefficient – if you have time left after you're done with fixing the bugs feel free to optimize some of the methods for extra credit

Description of the program:

1. Reading the fund's portfolio data

The program reads portfolio data for a specific fund, in this case "EuroSwaps". It first retrieves from holdings.csv the ISIN's (ID's) of instruments in that portfolio, and then appends instrument-specific data retrieved from instruments.csv. The program then filters the data to only keep swaps.

2. Storing the data as an object of class SwapPortfolio

We have two classes used to store portfolio data. Class Portfolio implements all the general methods used across a variety of portfolio types. Additionally, class SwapPortfolio adds methods specific to a portfolio of swaps.

3. Summarizing the portfolio

We need our program to return the following information:

- number of swaps in the portfolio
- total cashflows aggregated at specific tenors (2, 10, 20, 40)
 - instruments.csv gives cashflows for each instrument, but at different tenors than we're interested in. The program needs to attribute them to specific tenors according to the matrix in cashflow_attribution.csv (e.g. 87.5% of CF_3Y is added to the cashflow at 2 years, and 12.5% to the cashflow at 10 years)
- total cashflow per counterparty