Distributed Systems
Exercise Sheet 3, Wednesday, 11:45
Klingemann, SS 2022

Preliminary Java-Exercise (assessment only in combination with subsequent tasks)

Realize a simple system for the management of equity funds and their stocks. Implement two classes for this purpose: One class for funds and one class for stocks. Each equity fund has two private attributes: a name and a set of stock objects. This set should represent the stocks that belong to the equity fund. (Note, that it is a set of objects and not just a number!) Each stock has three private attributes: a name, a dividend and a quantity.
An equity fund should have methods with the following functionality:

- Search for a stock with a particular name. You can assume that there exists at most one. The method returns the corresponding stock object.
- Add a new stock. The method has three parameters: a name, a dividend and a quantity. A corresponding stock object is created and added to the set of stocks of the equity fund.
- Return the set of all stock objects of the equity fund. (The return value has to be a collection of stock objects and not just a number!)
- Return the name of the equity fund.

A stock should have methods with the following functionality:

- Return the name
- Return the dividend
- Return the quantity
- Change the quantity

Implement the two classes and a main-function to test them. You should in particular be able to calculate within your main-function based on the methods above the total quantity of all stocks with a dividend larger than 5.