Homework 2:
Object-oriented Programming

Florian Fink

Symbolische Programmiersprache

Due: Thursday November 19, 2020, 16:00

In this exercise you will:

- Practice creating simple classes and objects with Python.

- As always, you need to submit your solution using the folder we provided in your GitLab account.

- Note: this sheet has *two* pages.

Exercise 1: Bank account class [5 points]

1. Using the slides & the script, put together a file containing the complete Account class. Each method must have a documentation string at the beginning which describes what the method is doing.

2. Create a main application where you create a number of accounts. Play around with depositing / withdrawing money. Change the account holder of an account using a setter method.

3. Change the withdraw function such that the minimum balance allowed is -1000.

4. Write a function `apply_interest(self)` which applies an interest rate of 1.5% to the current balance and call it on your objects.

5. Implement the `__str__` magic method[1] and use it to print accounts.

---

[1]In the old slides this method was referenced as *hook* – but *magic method* appears to be the correct terminology

Exercise 2: Employee class [5 points]

1. Write the complete code for the Employee class (including constructor, `__str__`,...)

2. Create a main application, create a few employee objects and show how you can manipulate them using the methods.

3. Create a department dictionary (dictionary of string to lists or sets of employees) with at least two departments (e.g. *accounting*, *sales*,...) with each at least two employees. Print for each employee in the dictionary:
   <department> <employee name>.