Project definition and requirement documentation

This document is the first contribution of the series of exercises in the module Software Engineering in the summer semester 2022. The group consists of Morris Florek (124437), Ella Gekeler (123767) and Henrik Norderhus (123917), all students of the Master program Digital Engineering.

Overview:

In order to work on the exercises in the Software Engineering module, our group has decided on a project under the name of Flatmate.

The software aims to assist people living in shared accomodations to keep an overview of their flatmates, their finances and shared responsibilities. Each user of the program can create their own account, enter their individual expenses and enter a list of purchased groceries. This information is shared with the other users and allows them to keep track of whether one member of the household is spending disproportionate amounts of money or if the financial situation is balanced. A shared grocery list eases individual shopping and helps to plan meals. Finally, the software is going to assign errands in the household weekly to different users, i.e. whose responsibility it is to vacuum the hallway or to clean the bathroom.

Requirements:

We have decided to split our software into five separate components and we want to implement those five components object oriented as classes. In the following the five classes are listed with the needed requirements and features.

Flatmate (User):

Everybody who wants to organize their shared flat can create their own account and can access the account by entering a Username and password. As a user you can create a new flat, in which you are able to invite your flatmates to or you can join an existing flat.

Flat:

The flat keeps track of all flatmates and actions.

Grocery List:

The grocery list keeps an overview of all groceries needed for the flat. As a user you can add groceries to the list or remove them after you have purchased them. Once a user has purchased something from the grocery list, he can also split his expenses with his flatmates.

Finances:

The main goal of the Finance class is to keep track of all expenses and split them with your flatmates. Therefore, a user needs the possibility of adding new expenses. Those should be defined by a description, the amount of money, the information of who has paid and who the amount is shared with. Additionally, it should be possible to keep track of the current balances from every flatmate and to compensate deviant expenses.

Chores:

The main purpose of the Chores class is to organize all chores and distribute them equally. Therefore, individual chores have to be created. Those chores need a description, a deadline, a frequency and an effort level. Furthermore, the chores have to be assigned automatically to the flatmates and once somebody has completed a chore, the chore is assigned to somebody else. Additionally, we want to keep track of statistics. Depending on the effort level of the chore, points can be earned when a chore has been completed.
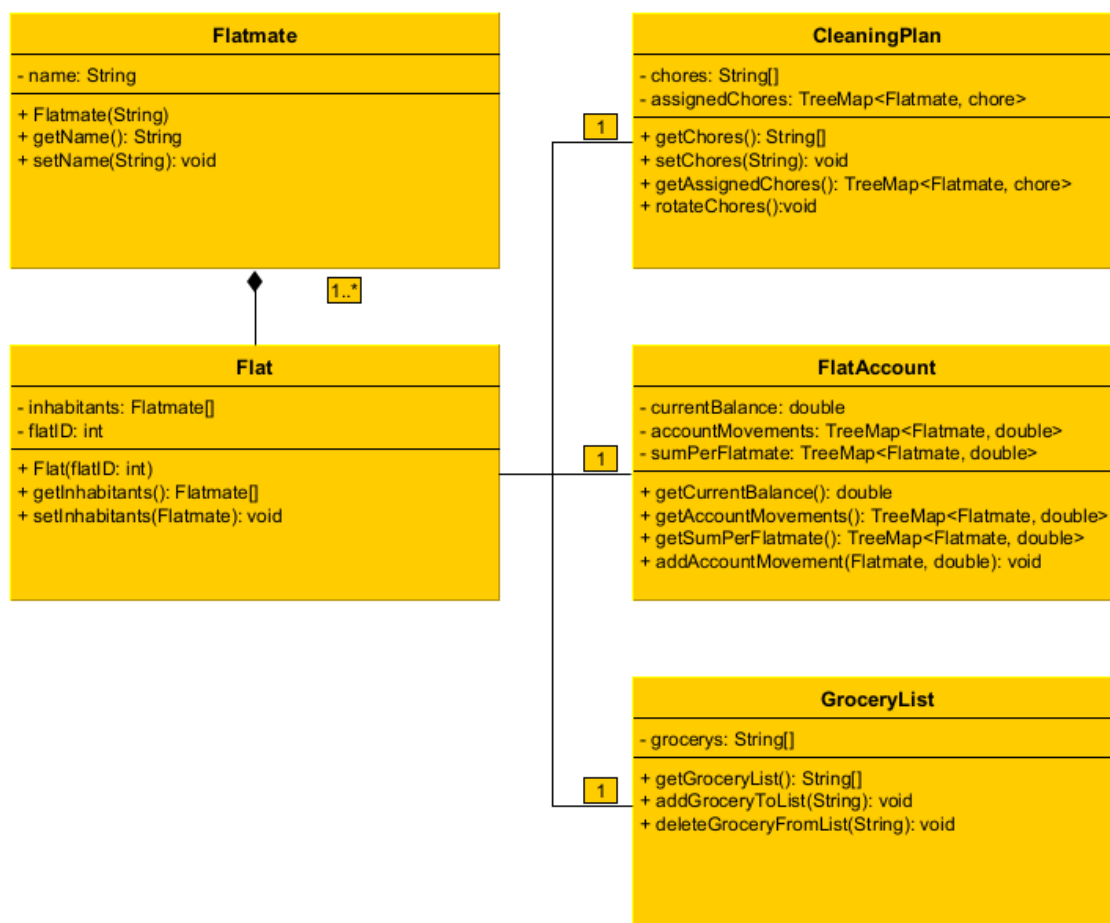
UML-Diagram:

Figure 1 UML Flatmate