ADVANCED PYTHON HOMEWORK 8

Everyone gets a database.

Choose one of the following tasks and solve it. Every task is worth 5 points.

Lab teacher's notes: Do not forget to test your solutions with a reasonable amounts of tests, and include them in the homework. In this exercise this will correspond to a script that runs various commands and shows that the system works. If you ever make assumptions that are not specified in the exercise, make sure that they are well documented.

Solve one of the following tasks using a relational database (e.g. SQLite). The solution has to meet the following conditions:

- to create and access data use the ORM layer, for example the SQLAlchemy from the lecture;
- data relations (e.g one-to-many) should be explicitly described in the data definition;
- the user interaction of all exercises below should be via program arguments, for example:

```
python3 myprogram.py meeting --add --description=lecture
python3 myprogram.py meeting --show
```

  Popular packages for parsing the program arguments are **argparse**, **sys.argv** or **getopt**.

Exercise 1. Write a program that stores information about owned books (at least author, title, year) and list of friends (at least name, email) who borrow books from us. The database should support operations for adding new books, borrowing books and donating.

Exercise 2. Design a system for keeping information about movies (or another artwork, e.g. music). For each movie store its description (title, production year) and people involved in its production (director, cinematographer, producer).

Exercise 3. Create your own calendar to store events (starting and ending time, description) e.g. classes, meetings, etc. along with a list of participants which are taking part in the meeting (name, email). During the creation of the event, inform if the event is overlapping with any other event, especially if the same participant is assigned to both.