Advanced Python: Homework set 11

2023/2024

Please program the following tasks using a relational database (e.g. SQLite). Solutions should meet the following conditions:

1. the program should contain at least three classes (tables), without additional tables used to build many-to-many relationships;
2. data creation and access is to be done using the ORM layer, e.g. using SQLAlchemy discussed in the lecture
3. relationships between data (e.g. one-to-many) should be explicitly described in data declarations;
4. each table should contain at least one validation;
5. the user interface is to call the program with appropriate arguments, e.g. `python3 myprogram.py meetings ––add`
   `python3 myprogram.py meetings ––unsubscribe`

Assume that for each model there is at least the ability to add, update and search. Use ready-made packages to analyze program call arguments, e.g. argparse or getopt. Also, make sure to provide information about the arguments for calling the program, e.g. after specifying the —help argument.

Problem 1

Write a program that stores information about the books you own (at least author, title, year) and a list of friends (at least name, email) who they borrow books from us. Also program operations for adding new books, borrowing books and returning books.

Problem 2

Program a system that stores information about movies (it may also be different songs, e.g. music). The data to be stored is the description of the video itself (title, year of creation) and people involved in its creation (director, cinematographer, producer).

Problem 3

Program your own calendar storing events (starting and... ending, description), e.g. classes, meetings, etc., along with a list of people (name, email) who are assigned to the event. When adding events, indicate whether the event does not interfere with an already remembered event.

You must complete one of these assignments for class. Each task is worth 5 points. This task will be developed in subsequent task lists.