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AIT
4 year

General description and difficulty level

Create a reservation system for an imaginary company. The system contains information on scheduling, customers, and the company's resources.

The company has a limited amount of resources. These resources can be, for example, maintenance areas and mechanicians in a car repair shop, chairs in a barbershop, or hotel rooms. The information on the resources has been added into the program.

The program saves information about reservations into a calendar and marks the chosen resources as reserved for that time. When making a reservation causes a conflict (the resource has already been reserved), the reservation doesn't go through. The program adds relevant information on the customer to each reservation.

The program can be used to check the reservations on a given point of time and to print out information on reservations within a time interval determined by the user.
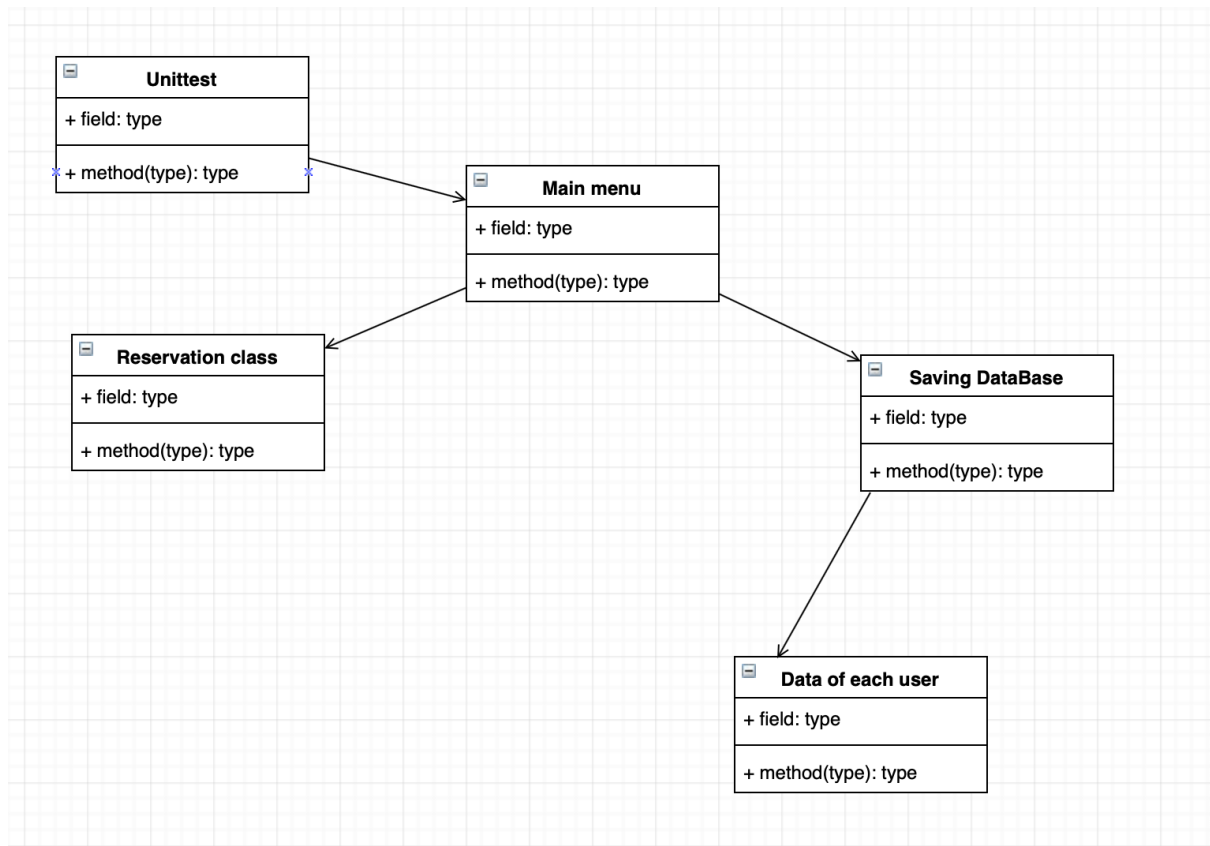
I want to implement project in hard level.

Use case description and draft of the user interface

The user will use the program through a graphical interface. On the main menu, the user will see reservations for the next month or week, free dates, prices for them, etc. When choosing a certain free date, the user will have to enter his data and he will be notified of the price.

Program's structure plan

UI of the program will be described in Main menu class. DataBase class will contain the data of all registered users. It will also save the entire database to a separate file so that the program does not delete all data when it is closed. Reservation class will check time slot for reservation and make it, if its possible. After all send it to DataBase class. Main menu will be main class of the program. Maybe UI class will be implemented separately.

Unittest

Unittest
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Main menu
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Reservation class
+ field: type
+ method(type): type

Saving DataBase
+ field: type
+ method(type): type

Data of each user
+ field: type
+ method(type): type

Data structures

At the moment it seems to me that I don't have to use dynamical data structures. All data will be stored in txt or xml format. The decision on their use will be made as they are implemented. Non-dynamic arrays will be used for reservation, since all data is either known in advance or limited by symbols. Also different classes will be used for the data structure.

Files and file formats

As I wrote above, I will use text format or xml.

Algorithms

I may have to use some algorithms to find a specific user's reservation in a data array or, for example, in a specific place. This will need to be done if there are many reservations to reduce the program execution time.

Testing plan

Testing will take place by using test methods for errors, testing of individual modules of the application source code(unit tests) and manual tests.
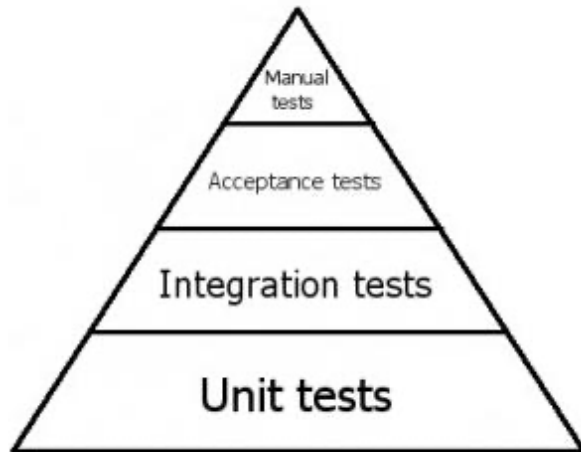
Libraries and other tools

I think I don't need a lot of libraries, only PyQt for UI

Course materials and all included links, https://www.python.org, https://tutsplus.com/,https://www.sololearn.com/,https://www.techbe am ers.com/,htt ps://hackr.io/tutorials/learn-python, https://realpython.com/, Head First Python, 2nd Edition(book).

Schedule

Most of the work must be done before the end of the month. Everything will be planned out by weeks, in the second week it will go to the menu and creating a raw version of the main game interface. Then next week finishing interface and main structure and maybe rest of time will go for improving the appearance of the reservation system and testing.