SEMINAR VII – LAYERED ARCHITECTURE (I)

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WHAT YOU SHOULD KNOW AFTER ATTENDING

- How to analyze a problem statement in order to determine the required business entities.
- How to validate business entities
- How to create and use custom exceptions
- How to implement a reusable ***Repository***.
- How to implement Python test cases and measure your code's coverage

PROBLEM STATEMENT

Create an application for a car rental business using a console based user interface. The application must allow keeping records of the company's list of clients, existing car pool and rental history. The application must allow its users to manage clients, cars and rentals in the following ways:

Clients

- Add a new client. Each client is a physical person having a unique ID, name, age and driver license series.
- Update the data for any client.
- Remove a client from active clients. Note that removing a client must not remove existing car rental statistics.
- Search for clients based on ID and name.
- All client operations must undergo proper validation!

Cars

- Add a new car to the car pool. Each car must have a valid license plate number, a make and model taken from a list of makes and models. In addition, each car will have a color.
- Remove a car from the car pool.
- Search for cars based on license number, make and model and color.
- All car operations must undergo proper validation!

Rentals

- An existing client can rent one or several cars from the car pool for a determined period. When rented, a car becomes unavailable for further renting.

- When a car is returned, it becomes available for renting once again.
- Search the rental history of a given client, car, or all rentals during any given period.

Statistics

- The list of all cars in the car pool sorted by number of days they were rented.
- The list of clients sorted descending by the number of cars they have rented.

The application must have support for unlimited undo/redo with cascading.

SOURCE CODE

The source code for this seminar is the Seminar.07.zip archive.