Documentation

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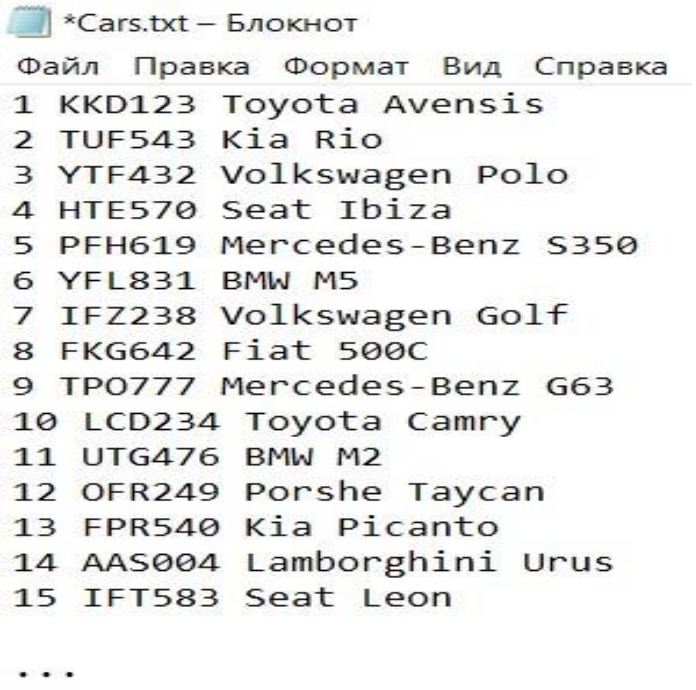
Exercise: Car fleet manager.

To begin with inputs lists. Wiser, easier and more practically if we get two documents form fuel station. In the first document the first important thing that we get the **indexes of the cars**, after that the second important thing that we have **unique number of each car** (Ex. KKK111), third get the mark and the model.

Example of the first list,



The second list will be only with indexes, dates of refueling (as example yyyy.mm.dd), liters and mileage of on the day of refueling. In this case for us important the indexes of the cars (in the first list it was the number of the car).

And in this case, we are planning to use two dimensional linked list from our two inputs lists.

Some different and important moments for lists and working with them,

1. For us the separator that is space between two peace of date information, that is why it should be only one space
2. In the second list, we don't need and don't have sequence of the date (for ex. 2021.08.21 that is don't guarantee that next date will be 2021.08.22)
3. Our cars refueling, when there is no petrol/gas left in the tank

Example of the second list,

Structures and Functions:

- **Struct Car**
- **Struct Date**
- **Struct Fuel**
- **Struct FuelNode**
- **Struct CarNode**
- **CarNode* AddNodeToCarList(CarNode* hp, Car* newCar)**
- **void PrintCar(CarNode* car)**
- **void PrintFuel(Fuel* fuel)**
- **void PrintCars(CarNode* head) //Function to print our nodes**
- **void PrintAll(CarNode* head)**
- **CarNode* FindCarNodeById(CarNode* head, int id)**
- **void AddFuelNodeToCarNode(CarNode* car, Fuel newFuel)**
- **void LoadAllFuelsFromFile(CarNode* head, FILE* fp)**
- **float getAverageConsumptionByCarId(CarNode* head, int id)**
- **void PrintConsumptionByCar(CarNode* head, CarNode* car)**
- **void PrintAverageConsumptionForAllCars(CarNode* head)**
- **int Services(CarNode* head, int id)**
- **void AddNewReFuel(CarNode* head, int id)**
- **void SaveToFile(CarNode* head, FuelNode*fn)**
- **int userInput()**
- **char SelMenu(int sel, CarNode* CarsHead)**
- **int main()**

Secondly, we are planning implement the following statements:

1. Should load existing database into memory or create a new if we don't have database.
2. Add new re-fueling entry into the database,
3. Save the re-fuelling database (from the memory) into a file.

To complete the tasks we can follow the rules of lists in our text!

4. For do this statement we need minimum 3 strings about refueling of the car, because first mention of refueling the car don't get for us necessary information. Also, if we have more than 3 dates of refueling we should see dates with the smallest interval. After that, we can get the exact value!
5. List all cars that need to go to service in the near future. The machine needs service if the mileage of the car > 20000 km or in the future it predictably will be more than 20000 km in the next 3 months.

In the next step do the block diagram for our program: