

# Rental cars

## Vision

“Rental cars” is web-application which allows users to record information about clients, cars and the rental orders.

Application should provide:

- Storing rental orders, clients and cars in a database;
- Display list of orders;
- Updating the list of orders (adding, editing, removing);
- Display list of clients;
- Updating the list of clients (adding, editing, removing);
- Display list of cars;
- Updating the list of cars (adding, editing, removing);
- Display number of the orders for cars and clients;
- Filtering by date for orders and clients;
- Filtering by rental cost for cars.





## 1. Orders

### 1.1 Display list of orders

The mode is designed to view the list of orders, if it possible to display the number of orders for a specified period of time.

**Main scenario:**

- User selects item “Orders”;
- Application displays list of Orders.

Orders list						
Orders	Clients	Cars				
			add			
date from:		01/02/2018		by:	01/04/2018	
Car number	Client passport number	Add date	Rental time	Car rental cost	Total cost	
412	ab241	02.03.2018	2	85.00	170.00	 
542	ac4123	12.03.2018	3	77.00	231.00	 

Pic. 1.1 View the Orders list.

The list displays the following columns:

- Car number – unique car number;
- Client passport number – unique client passport number;
- Add date – date of adding a rental order;
- Rental time – rental time in days, minimal time is one day;
- Car rental cost – cost of car rental for one day;
- Total cost – total cost of car rental, total cost is calculated as the rental time multiplied by car rental cost.

Aggregate function: Total cost = Rental time \* Car rental cost.

### **Filtering by date:**

- In the order list view mode, the user sets a date filter and presses the refresh list button (to the right of the date entry field);
- The application will display a form to view the list of orders with updated data.

## **1.2 Add order**

### **Main scenario:**

- User clicks the “Add” button in the orders list view mode;
- Application displays form to enter order data;
- User enters order data and presses “Save” button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then record is adding to database;
- If error occurs, then error message is displaying;
- If new order record is successfully added, then list of orders with added records is displaying.

### **Cancel operation scenario:**

- User clicks the “Add” button in the order list view mode;
- Application displays form to enter order data;
- User enters order data and presses “Cancel” button;
- Data don't save in data base, then list of orders records is displaying to user.
- If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

Add order				
Orders	Clients	Cars	Cancel	Save
Client name:	Богдан Попов ▼			
Car description:	bmw ▼			
Rental time:	4			
Add date:	01/02/2018 📅			

Pic. 1.2 Add order.

When adding a order, the following details are entered:

- Client name – client's first and last name;
- Car description – car description;
- Rental time – rental time in days, minimal time is one day;
- Add date – date of adding a rental order.

## **1.3 Edit order.**

### **Main scenario:**

- User clicks the “Edit” button in the orders list view mode;
- Application displays form to enter order data;
- User enters order data and presses “Save” button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then edited data is added to database;
- If error occurs, then error message is displaying;
- If order record is successfully edited, then list of orders with added records is displaying.

#### **Cancel operation scenario:**

- User clicks the “Edit” button in the orders list view mode;
- Application displays form to enter order data;
- User enters order data and presses “Cancel” button;
- Data don’t save in data base, then list of orders records is displaying to user.
- If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

Pic. 1.3 Edit order.

When editing a order, the following details are entered:

- Client name – client’s first and last name;
- Car description – car description;
- Rental time – rental time in days, minimal time is one day;
- Add date – date of adding a rental order.

Constraints for data validation:

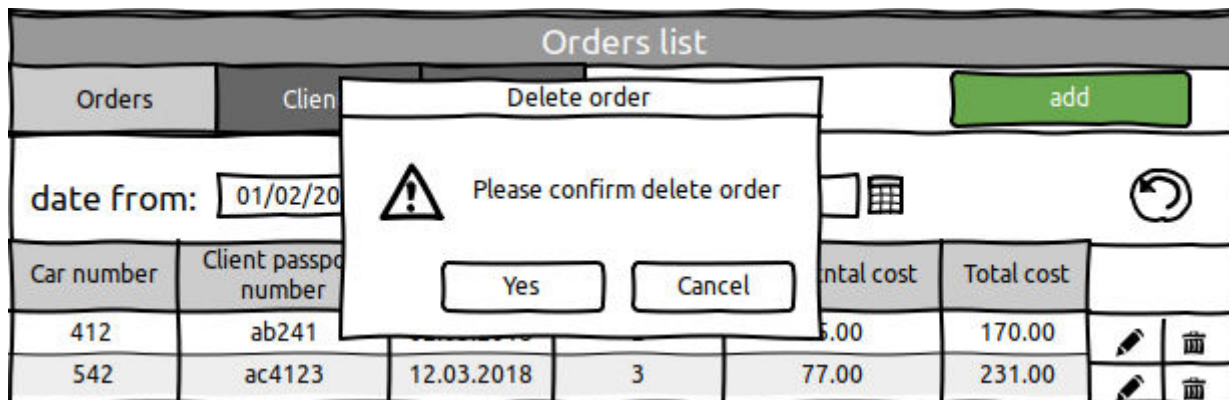
- Client name – maximum length of 90 characters;
- Car description – maximum length of 90 characters;
- Rental time – minimal value is one day;
- Add date – order add date in format dd/mm/yyyy.

## **1.4 Removing the order**

#### **Main scenario:**

- The user, while in the list of orders, presses the "Delete" button in the selected order line;

- If the order can be removed, a confirmation dialog is displayed;
- The user confirms the removal of the order;
- Record is deleted from database;
- If error occurs, then error message displays;
- If order record is successfully deleted, then list of orders without deleted records is displaying.



Pic. 1.4 Delete order dialog.

**Cancel operation scenario:**

- User is in display mode of orders list and press "Delete" button;
- Application displays confirmation dialog "Please confirm delete order?";
- User press "Cancel" button;
- List of orders without changes is displaying.

## 2. Clients

### 2.1 Display list of Clients

This mode is intended for viewing and editing the clients list.

#### **Main scenario:**

- User selects item “Clients”;
- Application displays list of clients.

Clients list				
Orders	Clients	Cars	Add	
date from: 01/01/2018 by: 01/08/2018				
First name	Last Name	Registration date	Number of orders	
Борис	Иванов	01.03.2018	1	
Антон	Петров	12.03.2018	2	
Богдан	Попов	21.07.2018	1	

Pic 2.1 View the clients list.

The list displays the following columns:

- First name – client’s first name;
- Last name – client’s last name;
- Registration date – client’s date registration;
- Number of orders – client’s number of rental orders.

#### **Filtering by date:**

- In the clients list view mode, the user sets a date filter and presses the refresh list button (to the right of the date entry field);
- The application will show the clients only for a certain period of time.

Restrictions:

- Start date of the period should be less then end date of the period;
- If start date is blank, then filtering by end date only.
- If end date is blank, then filtering by start date only.
- Updating data after selecting the filtering conditions is carried out by pressing the “Refresh” button.

### 2.2 Add client

#### **Main scenario:**

- User clicks the “Add” button in the clients list view mode;
- Application displays form to enter client data;
- User enters client’s data and presses “Save” button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then record is adding to database;

- If error occurs, then error message is displaying;
- If new client record is successfully added, then list of clients with added records is displaying.

**Cancel operation scenario:**

- User clicks the “Add” button in the clients list view mode;
- Application displays form to enter client’s data;
- User enters client’s data and presses “Cancel” button;
- Data don’t save in data base, then list of clients records is displaying to user.
- If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

Add client	
Orders	Clients
Cars	
First name:	Богдан
Last name:	Иванов
Passport number:	ab42354
Add date:	12/07/2018

Pic. 2.2 Add client.

When adding a client, the following details are entered:

- First name – client’s first name;
- Last name – client’s last name;
- Passport number – client’s unique passport number;
- Registration date – client’s date registration.

Constraints for data validation:

- First name – maximum length of 45 characters;
- Last name – maximum length of 45 characters;
- Passport number – unique, maximum length of 30 characters;
- Registration date – client’s registration date in format dd/mm/yyyy.

## 2.3 Edit client

**Main scenario:**

- User clicks the “Edit” button in the clients list view mode;
- Application displays form to enter client data;
- User enters client’s data and presses “Save” button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then edited data is added to database;
- If error occurs, then error message is displaying;
- If client’s record is successfully edited, then list of clients with added records is displaying.

**Cancel operation scenario:**

- User clicks the “Edit” button in the clients list view mode;
- Application displays form to enter client data;
- User enters client data and presses “Cancel” button;
- Data don’t save in data base, then list of clients records is displaying to user.
- If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

Pic. 2.3 Edit client.

## 2.4 Removing client

### *Main scenario:*

- The user, while in the list of clients mode, presses the "Delete" button in the selected client line;
- Application displays confirmation dialog “Please confirm delete client?”;
- The user confirms the removal of the client;
- Record is deleted from database;
- If error occurs, then error message displays;
- If client record is successfully deleted, then list of clients without deleted records is displaying.

First name	Last name	Date of birth	Number of orders
Борис	Иванов	12.03.2018	1
Антон	Петров	21.07.2018	2
Богдан	Попов	12.03.2018	1

Pic. 2.4 Delete client dialog.

### *Cancel operation scenario:*

- User is in display mode of clients list and press “Delete” button;
- Application displays confirmation dialog “Please confirm delete client?”;

- User press “Cancel” button;
- List of clients without changes is displaying.



### 3. Cars

#### 3.1 Display list of cars

This mode is intended for viewing and editing the cars list

**Main scenario:**

- User selects item “Cars”;
- Application displays list of cars.

Cars list				
Orders	Clients	Cars		
rental cost from: 70.00		by: 85.00	↻	
Car description	Rental Cost	Number of orders		
bmw	85.00	1		
renault	75.00	2		

Pic. 3.1 View the cars list.

The list displays the following columns:

- Car description – car’s description;
- Rental cost – car’s rental cost for one day;
- Number of orders – car’s number of rental orders.

**Filtering by rental cost:**

- In the cars list view mode, the user sets a rental cost filter and presses the refresh list button (to the right of the rental cost entry field);
- The application will display a form to view the list of cars with updated data.

#### 3.2 Add car

**Main scenario:**

- User clicks the “Add” button in the cars list view mode;
- Application displays form to enter car data;
- User enters car data and presses “Save” button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then record is adding to database;
- If error occurs, then error message is displaying;
- If new car record is successfully added, then list of cars with added records is displaying.

**Cancel operation scenario:**

- User clicks the “Add” button in the cars list view mode;
- Application displays form to enter car data;
- User enters car data and presses “Cancel” button;

- Data don't save in data base, then list of cars records is displaying to user.
- If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

The image shows a web application form titled "Add car". At the top, there are three tabs: "Orders", "Clients", and "Cars". The "Cars" tab is currently selected. To the right of the tabs are two buttons: "Cancel" and "Save". Below the tabs, there are three input fields with labels: "Car description:", "Car number:", and "Rental cost:". The values entered in these fields are "bmw", "41251", and "89.00" respectively.

Pic. 3.2 Add car

When adding a car, the following details are entered:

- Car description – car's description;
- Car number – car's unique registration number;
- Rental cost – car's rental cost for one day.

Constraints for data validation:

- Car description – maximum length of 90 characters;
- Car number - unique, maximum length of 30 characters;
- Rental time – minimal value is one day.

### 3.3 Edit car

#### **Main scenario:**

- User clicks the "Edit" button in the cars list view mode;
- Application displays form to enter car data;
- User enters car data and presses "Save" button;
- If any data is entered incorrectly, incorrect data messages are displayed;
- If entered data is valid, then edited data is added to database;
- If error occurs, then error message is displaying;
- If car record is successfully edited, then list of cars with added records is displaying.

#### **Cancel operation scenario:**

- User clicks the "Edit" button in the cars list view mode;
- Application displays form to enter car data;
- User enters car data and presses "Cancel" button;
- Data don't save in data base, then list of cars records is displaying to user.

If the user selects the menu item "Orders", "Clients" or "Cars", the data will not be saved to the database and the corresponding form with updated data will be opened.

Edit car	
Orders	Clients
Cars	Cancel Save
Car description:	bmw
Car number:	41251
Rental cost:	89.00

Pic. 3.3 Edit car.

### 3.4 Removing the car

#### Main scenario:

- The user, while in the list of cars mode, presses the "Delete" button in the selected car line;
- Application displays confirmation dialog "Please confirm delete car?";
- The user confirms the removal of the car;
- Record is deleted from database;
- If error occurs, then error message displays;
- If car record is successfully deleted, then list of cars without deleted records is displaying.

#### Cancel operation scenario:

- User is in display mode of cars list and press "Delete" button;
- Application displays confirmation dialog "Please confirm delete car?";
- User press "Cancel" button;
- List of cars without changes is displaying.

Cars list			
Orders	Clients	Cars	add
Delete car			
Please confirm delete car			
Yes Cancel			
rental cost from:			
Car description			orders
bmw			
renault	75.00	2	

Pic. 3.4 Delete car dialog.