

Tools and technologies:

- MS Visual Studio 2017;
- MS SQL Server (in MS Visual Studio);
- Entity Framework;
- Microsoft.AspNet.Identity;
- SimpleInjector;
- Windows Forms.

The project was made in three-layer architecture.

Setup connectionStrings in ProductsStore.WinForms/App.config

```
8  <connectionStrings>
9  <add name="DBConnection" connectionString="data source=(localdb)\MSSQLLocalDB;AttachDBFilename=DataDirectory\ShipmentsStore.mdf;
10     Integrated Security=True;MultipleActiveResultSets = true;"
11     providerName="System.Data.SqlClient"/>
12 </connectionStrings>
13
```

Additionally, that database was in the project (ProductsStore.WinForms/App_data).
ProductsStore.DAL/UnitOfWork

```
--
26 public UnitOfWork()
27 {
28     string root = Environment.CurrentDirectory;
29     root = root.Replace(@"bin\Debug", @"App_Data");
30
31     string connection = ConfigurationManager.ConnectionStrings["DBConnection"].ConnectionString;
32     connection = connection.Replace("DataDirectory", root);
```

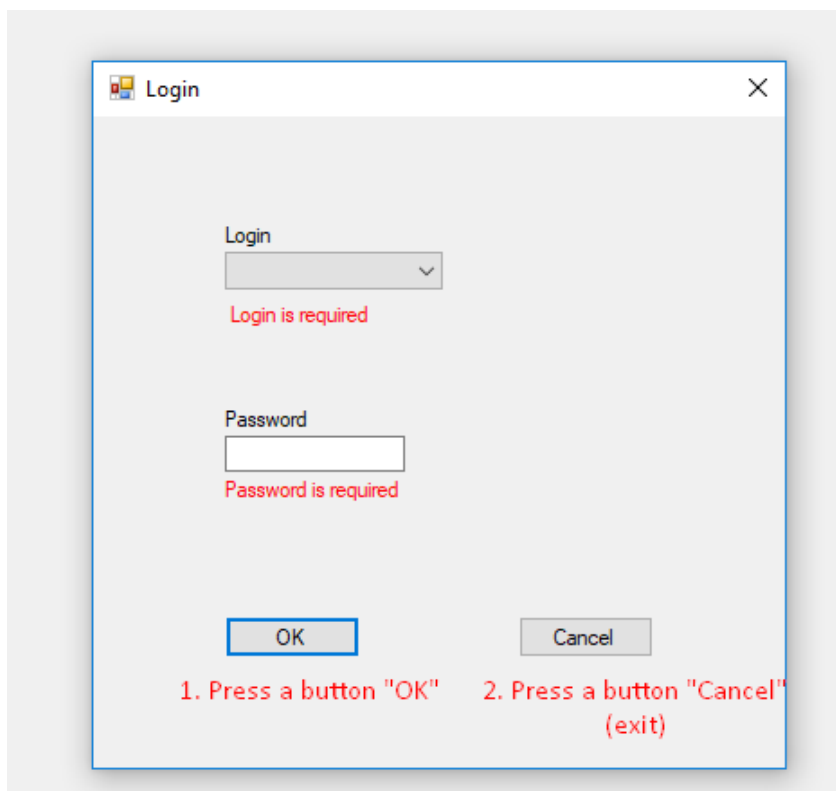
If database was created – program connect to existing database.

If database wasn't created:

- Before the first start program uncomment `UserService.CreateAdmin();` -
- `ProductsStore.WinForms/Login.cs;`

```
4 using ProductsStore.BLL.Interfaces;
5
6 namespace ProductsStore.WinForms
7 {
8     public partial class Login : Form
9     {
10         IUserService UserService { get; }
11
12         public bool Admin { get; set; } = false;
13         public string LoginUser { get; set; }
14
15         public Login(IUserService userService)
16         {
17             UserService = userService;
18             WindowState = FormWindowState.Normal;
19             var userList = UserService.GetAllLogins();
20             InitializeComponent();
21             Text = "Login";
22             LoginsBox.DataSource = userList;
23             LoginsBox.SelectedItem = null;
24         }
25
26         private void Login_OK_Click(object sender, EventArgs e)
27         {
28             bool check = true;
29             //1. CreateAdmin (only when creating a database) !!!
30             UserService.CreateAdmin();
31             if (PasswordBox.Text.Trim() == "")
32             {
33                 Password_Validation.Text = "Password is required";
34                 check = false;
35             }
36
37             if (LoginsBox.SelectedItem == null)
38             {
39                 // ...
40             }
41         }
42     }
43 }
```

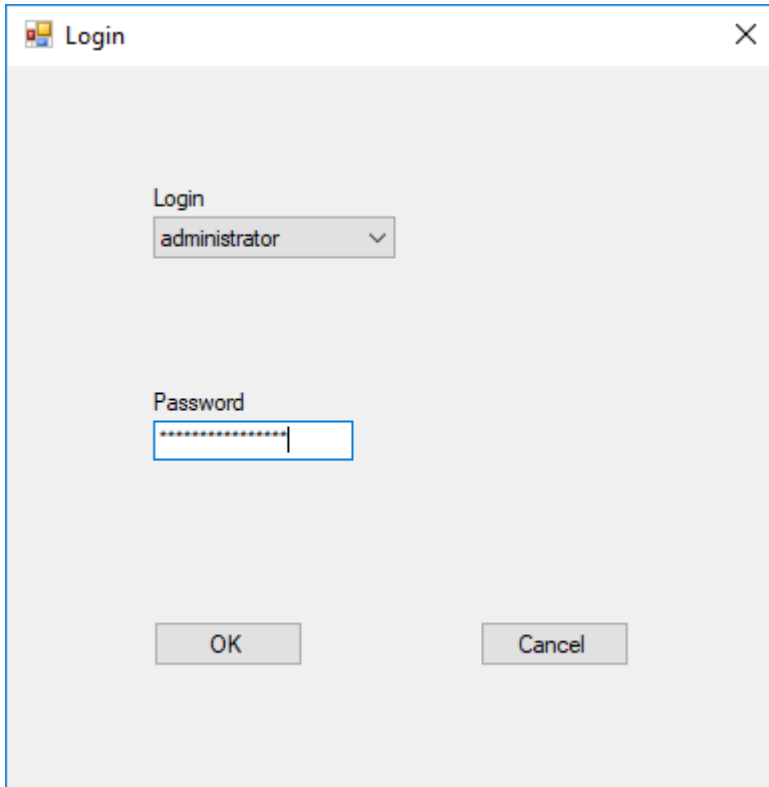
- Start program



- Comment `UserService.CreateAdmin();` - `ProductsStore.WinForms/Login.cs.`

```
29 //1. CreateAdmin (only when creating a database) !!!
30 //UserService.CreateAdmin();
```

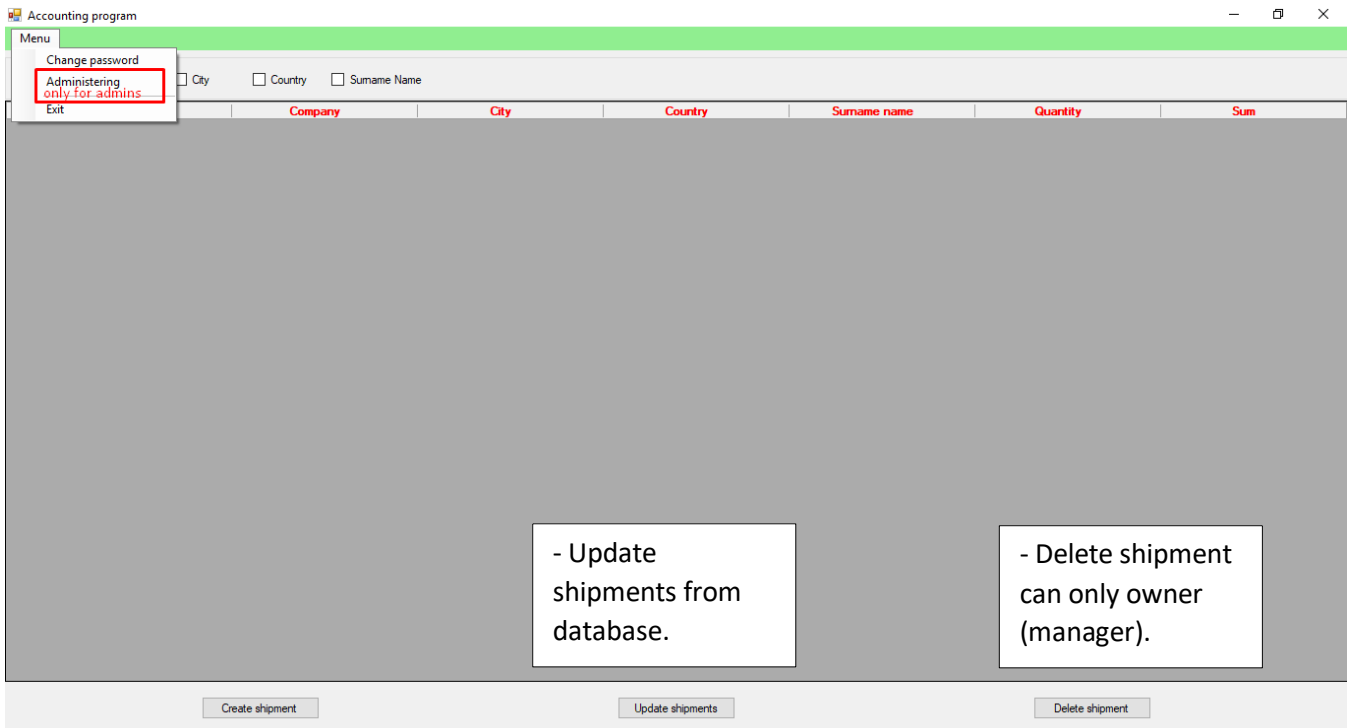
- Start program (password = "Qwerty_123456789")



A login dialog box titled "Login" with a close button (X) in the top right corner. It contains two input fields: "Login" with a dropdown menu showing "administrator" and a small downward arrow, and "Password" with a text box filled with asterisks. At the bottom, there are two buttons: "OK" and "Cancel".

Main features and forms:

- Main window program



The main window of the "Accounting program" features a green title bar and a menu bar with options: "Menu", "Change password", "Administering only for admins", and "Exit". Below the menu bar, there are checkboxes for "City", "Country", and "Surname Name". A table with columns "Company", "City", "Country", "Surname name", "Quantity", and "Sum" is visible. At the bottom, there are three buttons: "Create shipment", "Update shipments", and "Delete shipment".

- Update shipments from database.

- Delete shipment can only owner (manager).

- Grouping

Accounting program

Menu

Select columns for grouping

☐ Date ☐ Company ☐ City ☐ Country ☐ Surname Name

	Date	Company	City	Country	Surname name	Quantity	Sum
▶	21.03.2019 23:14	QWE	Mykolaiv	Ukraine	Petrov Petr	4	123.00
	21.03.2019 15:39	Company	City	Ukraine	Ivanov Ivan	55	555.55
	21.03.2019 16:10	QAZ	Odessa	Ukraine	Ivanov Ivan	5	1055.55

Accounting program

Menu

Select columns for grouping

☒ Date ☐ Company ☐ City ☐ Country ☒ Surname Name

	Date	Company	City	Country	Surname name	Quantity	Sum
▶	21.03.2019 23:14	QWE	Mykolaiv	Ukraine	Petrov Petr	4	123.00
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	21.03.2019 16:10	QAZ	Odessa	Ukraine	Ivanov Ivan	5	1055.55

Menu

Select columns for grouping

☒ Date ☐ Company ☐ City ☐ Country ☒ Surname Name

	Date	Surname name	Quantity	Sum
	21.03.2019	Ivanov Ivan	50	1611.10
	21.03.2019	Petrov Petr	4	123.00

- Create shipment

Rules:

- If first manager`s shipment - allow any data (Sum).
- If first manager`s shipment on current month and year ($\text{Sum} \leq \text{Average Sum last month where were shipments for current manager} + 500$).
- $\text{Sum} \leq \text{average sum on current month for current manager} + 500$.

Accounting program

Menu

Select columns for grouping

☐ Date ☐ Company ☐ City ☐ Country ☐ Surname Name

	Date	Company	City	Country	Surname name	Quantity	Sum
<div> <div>CreateShipment</div> <div> <div>Company</div> <div>Company</div> </div> <div> <div>City</div> <div>City</div> </div> <div> <div>Country</div> <div>Ukraine</div> </div> <div> <div>Quantity</div> <div>55</div> </div> <div> <div>Sum</div> <div>555.5</div> </div> <div> <div>Shipment was added</div> <div>OK</div> </div> <div> <div>OK</div> <div>Cancel</div> </div> </div>							

Create shipment Update shipments Delete shipment

Accounting program

Menu

Select columns for grouping

☐ Date ☐ Company ☐ City ☐ Country ☐ Surname Name

	Date	Company	City	Country	Surname name	Quantity	Sum
▶	21.03.2019 15:39	Company	City	Ukraine	Ivanov Ivan	55	555.55

CreateShipment

Company

City

Country

Quantity

Sum

Sum must be no more 1055.550000 (average Sum of current month for the current manager)+500

OK Cancel

Create shipment Update shipments Delete shipment

Accounting program

Menu

Select columns for grouping

☐ Date ☐ Company ☐ City ☐ Country ☐ Surname Name

	Date	Company	City	Country	Surname name	Quantity	Sum
▶	21.03.2019 15:39	Company	City	Ukraine	Ivanov Ivan	55	555.55

CreateShipment

Company

City

Country

Quantity

Sum

Sum must be no more 1055.550000 (average Sum of current month for the current manager)+500

OK Cancel

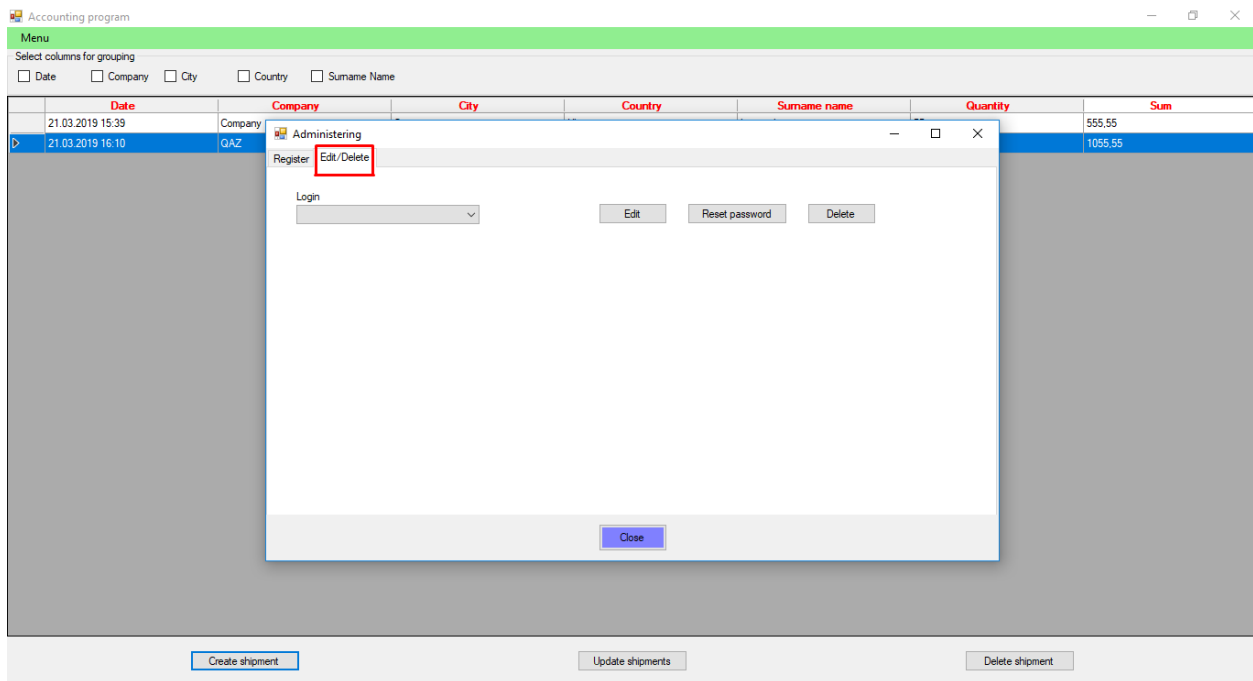
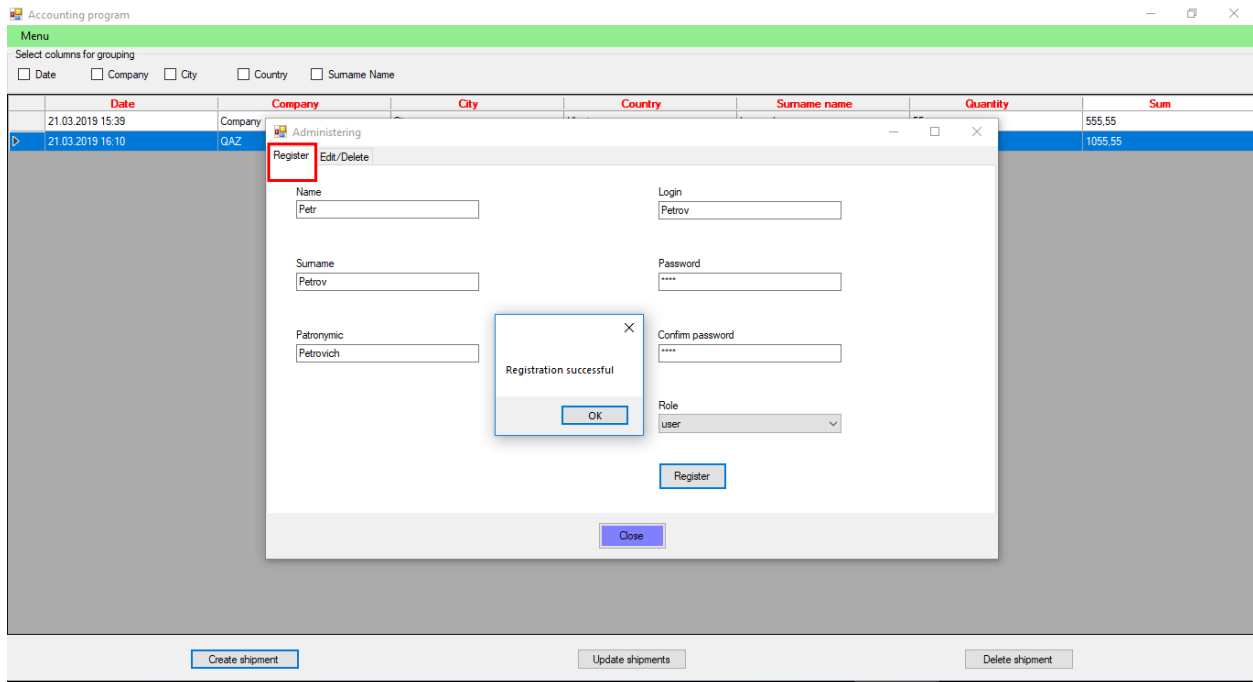
Shipment was added

OK

Create shipment Update shipments Delete shipment

- Administering

Register and Reset password without password reliability checking. User must change password (in there checking password reliability).



Administering

Register Edit/Delete

Login
Petrov

Name
Petr

Surname
Petrov

Patronymic
Petrovich

Role
user

OK Cancel

Close

User edited

OK

Administering

Register Edit/Delete

Login
Petrov123

Password

Confirm password

OK Cancel

Close

Password is reset

OK

In here unlock user
(after 3 consecutive
inputs of the wrong
password)

Administering

Register Edit/Delete

Login
Alex

Edit Reset password Delete

Close

Are you sure you want to delete user's Alex

OK Отмена

If manager made
shipments - Manager
got value deleted in
database (table
AspNetUsers, field
Deleted)

Manager deleted in database (manager didn't make shipments).

OK

- Change password

Change password

Old password

New password

password reliability checking

Passwords must be at least 6 characters. Passwords must have at least one non letter or digit character. Passwords must have at least one digit (0-9). Passwords must have at least one uppercase (A-Z).

OK Cancel

Change password

Old password

New password

Passwords must have at least one lowercase (a-z).

Password 123QW_qw

OK Cancel

Password is changed

OK

- Login

Login

administrator

Password

Login or password incorrect.

OK Cancel

For administrator (role = "admin")
LockoutEnabled = false

Login

Petrov123

Password

Login or password incorrect. Input attempts: 2

OK Cancel

Login

Petrov123

Password

User is locked. For unlock contact your administrator.

OK Cancel

For Petrov123 (role = "user")
LockoutEnabled = true

Users in database:

- Login: "administrator", password: "Qwerty_123456789", role: "admin";
- Login: "Petrov123", password: "123QW_qw", role: "user".