Министерство образования Республики Беларусь
Учреждение образования
«Брестский государственный технический университет»
Кафедра ИИТ

ОТЧЕТ
по лабораторной работе
№10 Дисциплина «СПП»

Выполнил:
Студент гр. ПО-3

Будяков В.В.

Проверил:
Крощенко А. А.

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Цель работы: приобрести практические навыки разработки многооконных приложений на JavaFX для работы с базами данных

Задание:

На основе БД, разработанной в лабораторной работе No9, реализовать многооконное приложение-клиент, позволяющее выполнять основные операции над таблицей в БД (добавление, удаление, модификацию данных).

База данных «Торгово-закупочная деятельность фирмы»

Ход работы

Текст программы:

Main.java

```
import javafx.application.Application;
import javafx.fxml.FXMLLoader;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.stage.Stage;

public class Main extends Application {
  @Override
  public void start(Stage primaryStage) throws Exception{
     Parent root = FXMLLoader.load(getClass().getResource("sample.fxml"));
primaryStage.setTitle("СПП 3 лаба");
     primaryStage.setScene(new Scene(root, 600, 400));
     primaryStage.setMinHeight(400);
     primaryStage.setMinWidth(600);
     primaryStage.show();
  }
  public static void main(String[] args) {
     launch(args);
  }
}
```

DatabaseController.java

```
import java.sql.*;
import java.util.ArrayList;
import java.util.List;

public class DatabaseController {
  Connection connection;
  Statement state;
  public DatabaseController () throws SQLException {
     connection=

DriverManager.getConnection("jdbc:postgresql://localhost:5432/lab3?user=postgres&password=1111&ssl
=false");
     state = connection.createStatement();
  }
  public List<Element> getProductsClients() throws SQLException
  {
     ResultSet result = state.executeQuery("SELECT * FROM products_clients;");  List<Element> list =
new ArrayList<Element>();
     while(result.next()) {
        Statement state2= connection.createStatement();
        Statement state3= connection.createStatement();
        String client1="null", product1="null", contr="null";
        ResultSet client = state2.executeQuery("SELECT * FROM clients WHERE
idclients="+result.getString(3)+";");
        if(client.next())
           client1=client.getString(3)+ " " + client.getString(2);
        ResultSet product = state3.executeQuery("SELECT * FROM products WHERE
idproducts="+result.getString(2)+";");
        if(product.next())
           product1=product.getString(2);
        String idProduct = result.getString(2);
        Statement state4 = connection.createStatement();
        ResultSet result4 = state4.executeQuery("SELECT name FROM providers WHERE idproviders =
(SELECT idproviders FROM products_providers WHERE idproducts ="+idProduct+");");
        if(result4.next())
           contr = result4.getString(1);
        list.add(new Element(product1, client1, result.getInt(4), contr, result.getInt(1)));
     }
     return list;
  }
  public int getProductInProductsClientsById(int id) throws SQLException  {
     String query=String.format("SELECT * FROM products_clients WHERE idproducts_clients= %d;",
id);
     ResultSet result = state.executeQuery(query);
```

```
        if(!result.next()) {
            System.out.println("-1!!!!!!!!!!!!!!!!!!!!");
            return -1;
        }
        return Integer.parseInt(result.getString(2));
    }
    public int getClientInProductsClientsById(int id) throws SQLException  {
        String query=String.format("SELECT * FROM products_clients WHERE idproducts_clients= %d;",
id);
        ResultSet result = state.executeQuery(query);
        if(!result.next()) {
            System.out.println("-1!!!!!!!!!!!!!!!!!!!!");
            return -1;
        }
        return Integer.parseInt(result.getString(3));
    }
    public int getContrInProductsClientsById(int id) throws SQLException  {
        String query=String.format("SELECT idproviders FROM providers WHERE idproviders= %d;", id);
        ResultSet result = state.executeQuery(query);
        if(!result.next()) {
            System.out.println("-1!!!!!!!!!!!!!!!!!!!!");
            return -1;
        }
        return Integer.parseInt(result.getString(1));
    }
    public int getCountInProductsClientsById(int id) throws SQLException  {
        String query=String.format("SELECT * FROM products_clients WHERE idproducts_clients= %d;",
id);
        ResultSet result = state.executeQuery(query);
        if(!result.next()) {
            System.out.println("-1!!!!!!!!!!!!!!!!!!!!");
            return -1;
        }
        return Integer.parseInt(result.getString(4));
    }
    public void deleteRow(int id) throws SQLException
    {
        String query=String.format("DELETE FROM products_clients WHERE  idproducts_clients='%s';",
String.valueOf(id));
        state.executeUpdate(query);
    }
    public List<Product> getProducts() throws SQLException {
        ResultSet result=state.executeQuery("SELECT * FROM products;");  List<Product> list=new
ArrayList<Product>();
        while(result.next())
        {
```

```
        Product product=new Product(result.getInt(1), result.getString(2),  result.getDouble(3), result.getInt(4));
        list.add(product);
    }
    return list;
  }
  public List<Client> getClients() throws SQLException {
    ResultSet result=state.executeQuery("SELECT * FROM clients;");  List<Client> list=new ArrayList<Client>();
    while(result.next())
    {
        Client client=new Client(result.getInt(1), result.getString(2),  result.getString(3), result.getString(4));
        list.add(client);
    }
    return list;
  }
  public List<Contr> getContrs() throws SQLException {
    ResultSet result=state.executeQuery("SELECT * FROM providers;");
    List<Contr> list=new ArrayList<Contr>();
    while(result.next())
    {
        Contr contr=new Contr(result.getInt(1), result.getString(2),  result.getString(3), result.getString(4));
        list.add(contr);
    }
    return list;
  }
  public boolean addNewRecord(int idProduct, int idClient, int count, int idContr) throws SQLException
  {
    String query=String.format("INSERT INTO products_clients (idproducts, idclients,  count) VALUES ('%d', '%d', '%d');", idProduct, idClient, count);
    String query1=String.format("UPDATE products_providers SET idproviders='%d' WHERE idproducts='%d';", idContr, idProduct);
    try {
        state.executeUpdate(query);
        state.executeUpdate(query1);
        return true;
    }
    catch(SQLIntegrityConstraintViolationException E)
    {
        return false;
    }
  }
  public boolean updateRecord(int id, int idProduct, int idClient, int count, int idContr) throws SQLException
  {
```

```
        String query=String.format("UPDATE products_clients SET idproducts='%d', idclients='%d',
count='%d' WHERE idproducts_clients='%d';", idProduct, idClient, count,  id);
        String query1=String.format("UPDATE products_providers SET idproviders='%d' WHERE
idproducts='%d';", idContr, idProduct);
        try {
            state.executeUpdate(query);
            state.executeUpdate(query1);
            return true;
        }
        catch(SQLIntegrityConstraintViolationException E)
        {
            return false;
        }
    }
}
```

Controller.java:

```
import javafx.collections.FXCollections;
import javafx.collections.ObservableList;
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.fxml.Initializable;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.control.*;
import javafx.scene.control.cell.PropertyValueFactory;
import javafx.stage.Modality;
import javafx.stage.Stage;

import java.awt.event.ActionEvent;
import java.net.URL;
import java.util.Comparator;
import java.util.List;
import java.util.ResourceBundle;

public class Controller implements Initializable {
    @FXML
    public TableView<Element> table;
    @FXML
    public TableColumn<Element, String> tableItemProduct;
    @FXML
    public TableColumn<Element, String> tableItemClient;
    @FXML
    public TableColumn<Element, Integer> tableItemCount;
    @FXML
    public TableColumn<Element, Integer> tableItemId;
    @FXML
    public TableColumn<Element, String> tableItemContr;
    @FXML
    public CheckBox checkBox;
    @FXML
```

```
    public TextField textArea;
    @FXML
    public Button searchButton;
    DatabaseController DBController;
    boolean searchState=false;
    @Override
    public void initialize(URL location, ResourceBundle resources)  {
        tableItemProduct.setCellValueFactory(new PropertyValueFactory<>("product"));
        tableItemClient.setCellValueFactory(new PropertyValueFactory<>("client"));
        tableItemCount.setCellValueFactory(new PropertyValueFactory<>("count"));
        tableItemContr.setCellValueFactory(new PropertyValueFactory<>("contr"));
        try {
            DBController = new DatabaseController();
        }
        catch(Exception e){System.out.println("Exception "+e.toString());}
        updateTable();
    }
    void updateTable()
    {
        try {
            List<Element> list=DBController.getProductsClients();  if(checkBox.isSelected());
            {
                class comparator implements Comparator<Element> {
                    public int compare(Element a, Element b) {
                        return a.getProduct().compareTo(b.getProduct());
                    }
                }
                list.sort(new comparator());
            }
            if(searchState)
                for(int i=0; i<list.size(); i++)
                    if(!list.get(i).getProduct().contains(textArea.getText())) {
                        list.remove(i);
                        i--;
                    }
            ObservableList<Element> tableItemsList = FXCollections.observableArrayList();  for(int i = 0; i<list.size();
i++)
                tableItemsList.add(list.get(i));
            table.setItems(tableItemsList);
        }
        catch(Exception e)
        {
            System.out.println("Exception "+e.toString());
        }
    }
    public void clickCheckBox(javafx.event.ActionEvent event)
    {
        updateTable();
    }
    public void clickSearchButton(javafx.event.ActionEvent event)
    {
        if(textArea.getText().isEmpty())
            searchState=false;
        else
            searchState=true;
        updateTable();
    }
    public void clickDeleteButton(javafx.event.ActionEvent event)
    {
        Alert alert = new Alert(Alert.AlertType.WARNING);
```

```
        alert.setTitle("Внимание");
        alert.setHeaderText("Подтвердите удаление");
        alert.setContentText("Вы точно хотите удалить запись?");
        alert.showAndWait().ifPresent(rs -> {
            if (rs == ButtonType.OK) {
                try {

                    DBController.deleteRow(table.getSelectionModel().getSelectedItem().getId());  updateTable();
                }
                catch(Exception e)
                {
                    System.out.println("Exception "+e.toString());
                }
            }
        });
    }
    public void clickAddButton(javafx.event.ActionEvent event)
    {
        initializeAddWindow(0, 0);
    }
    public void clickUpdateButton(javafx.event.ActionEvent event)
    {
        try{
            int id=table.getSelectionModel().getSelectedItem().getId();  initializeAddWindow(1, id);
        }
        catch(Exception e)
        {
            Alert alert = new Alert(Alert.AlertType.ERROR);
            alert.setTitle("Ошибка");
            alert.setHeaderText("Произошла ошибка");
            alert.setContentText("Проверьте, указали ли вы запись для обновления.");
alert.showAndWait().ifPresent(rs -> {
            if (rs == ButtonType.OK) {
            }
        });
            e.printStackTrace();
        }
    }
    public void initializeAddWindow(int mode, int id)
    {
        try {
            FXMLLoader loader= new FXMLLoader(this.getClass().getResource("adder.fxml"));  Parent root =
(Parent)loader.load();
            Stage addWindow = new Stage();
            addWindow.initModality(Modality.APPLICATION_MODAL);
            if(mode==0)
                addWindow.setTitle("Добавить");
            else
                addWindow.setTitle("Обновить");
            addWindow.setScene(new Scene(root, 300, 300));
            addWindow.setMinHeight(300);
            addWindow.setMinWidth(300);
            addWindow.setMaxHeight(300);
            addWindow.setMaxWidth(300);
            addWindow.setOnHiding(event1 -> {
                System.out.println("CLOSED");
                updateTable();
            });
            AdderController adderController = loader.getController();
            adderController.start(mode, id);
```

```
            addWindow.show();
        }
        catch(Exception e)
        {
            System.out.println("Exception"+e.toString());
            e.printStackTrace();
        }
    }
}
```

AdderController.java:

```
import javafx.collections.FXCollections;
import javafx.collections.ObservableList;
import javafx.fxml.FXML;
import javafx.fxml.Initializable;
import javafx.scene.Node;
import javafx.scene.control.*;
import javafx.stage.Stage;
import javafx.util.Callback;

import java.net.URL;
import java.util.List;
import java.util.ResourceBundle;

class Item
{
    public int id;
    public String text;
    public Item(int id, String text)
    {
        this.id=id;
        this.text=text;
    }
}
public class AdderController implements Initializable {
    @FXML
    public ComboBox comboBoxProducts;
    @FXML
    public ComboBox comboBoxClients;
    @FXML
    public ComboBox comboBoxContr;
    @FXML
    public TextField textAreaCount;
    @FXML
    public Button buttonAdd;
    private int id;
    private int mode;
    private List<Product> products;
    private List<Client> clients;
    private List<Contr> contrs;
    @Override
    public void initialize(URL location, ResourceBundle resources)
    {}
    public void start(int mode, int id)
    {
        this.id=id;
        this.mode=mode;
```

```
        try {
            DatabaseController DBController = new DatabaseController();
            products=DBController.getProducts();
            clients=DBController.getClients();
            contrs = DBController.getContrs();
            ObservableList<Item> listProducts = FXCollections.observableArrayList();
            ObservableList<Item> listClients = FXCollections.observableArrayList();
            ObservableList<Item> listContrs = FXCollections.observableArrayList();
            for(int i=0; i<products.size(); i++)
                listProducts.add(new Item(products.get(i).getId(),  products.get(i).getName()));
            for(int i=0; i<clients.size(); i++)
                listClients.add(new Item(clients.get(i).getId(),  clients.get(i).getSurname()+" "+clients.get(i).getName()));
            for(int i=0; i<contrs.size(); i++)
                listContrs.add(new Item(contrs.get(i).getId(),  contrs.get(i).getName()));
            comboBoxProducts.setItems(listProducts);
            comboBoxClients.setItems(listClients);
            comboBoxContr.setItems(listContrs);
            Callback<ListView<Item>, ListCell<Item>> factory = new  Callback<ListView<Item>, ListCell<Item>>() {
                @Override
                public ListCell<Item> call(ListView<Item> l) {
                    return new ListCell<Item>() {
                        @Override
                        protected void updateItem(Item item, boolean empty) {
                            super.updateItem(item, empty);
                            if (item == null || empty) {
                                setGraphic(null);
                            } else {
                                setText(item.text);
                            }
                        }
                    } ;
                }
            };
            comboBoxProducts.setCellFactory(factory);
            comboBoxProducts.setButtonCell(factory.call(null));
            comboBoxClients.setCellFactory(factory);
            comboBoxClients.setButtonCell(factory.call(null));
            comboBoxContr.setCellFactory(factory);
            comboBoxContr.setButtonCell(factory.call(null));
            if(mode==1) {
                buttonAdd.setText("Обновить");
                List<Element> list = DBController.getProductsClients();
                for (int i = 0; i < list.size(); i++)
                    if (list.get(i).getId() == id) {
                        int idProduct =
                                DBController.getProductInProductsClientsById(id);
                        for (int j = 0; j < products.size(); j++)  if (products.get(j).getId() == idProduct) {
comboBoxProducts.getSelectionModel().select(j); break;
                        }
                        int idClient =
                                DBController.getClientInProductsClientsById(id);
                        for (int j = 0; j < clients.size(); j++)  if (clients.get(j).getId() == idClient) {
comboBoxClients.getSelectionModel().select(j);  break;
                        }

                        int idContr =
                                DBController.getContrInProductsClientsById(id);
                        for (int j = 0; j < contrs.size(); j++)  if (contrs.get(j).getId() == idContr) {
comboBoxContr.getSelectionModel().select(j);  break;
                        }
```

```
                    textAreaCount.setText(String.valueOf(DBController.getCountInProductsClientsById(id)));  break;
                }
            }
        }
        catch(Exception e)
        {
            e.printStackTrace();
        }
    }
    public void addButtonClick(javafx.event.ActionEvent actionEvent) {  try {
        Item product = (Item) comboBoxProducts.getValue();
        Item client = (Item) comboBoxClients.getValue();
        Item contr = (Item) comboBoxContr.getValue();
        int count=Integer.parseInt(textAreaCount.getText());
        if(count<=0)
            throw new Exception();
        DatabaseController DBController = new DatabaseController();
        boolean result;
        if(mode==0)
            result=DBController.addNewRecord(product.id, client.id, count, contr.id);
        else
            result=DBController.updateRecord(id, product.id, client.id, count, contr.id);
            if(!result)
                throw new Exception();
        Node node=(Node)actionEvent.getSource();
        Stage stage=(Stage)node.getScene().getWindow();
        stage.close();
    }
    catch(Exception e)
    {
        Alert alert = new Alert(Alert.AlertType.ERROR);  alert.setTitle("Ошибка");
        alert.setHeaderText("Произошла ошибка");
        alert.setContentText("Указаны неверные данные.");  alert.showAndWait();
        e.printStackTrace();
    }
    }
}
```

Client.java:

```
public class Client {
    private int id;
    private String name;
    private String surname;
    private String phone;
    public Client(int id, String name, String surname, String phone) {  this.id = id;
        this.name = name;
        this.surname = surname;
        this.phone = phone;
    }
    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getName() {
```

```
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getSurname() {
        return surname;
    }
    public void setSurname(String surname) {
        this.surname = surname;
    }
    public String getPhone() {
        return phone;
    }
    public void setPhone(String phone) {
        this.phone = phone;
    }
}
```

Contr.java:

```
public class Contr {
        private int id;
        private String name;
        private String adres;
        private String phone;
        public Contr(int id, String name, String adres, String phone) {
            this.id = id;
            this.name = name;
            this.adres = adres;
            this.phone = phone;
        }
        public int getId() {
            return id;
        }
        public void setId(int id) {
            this.id = id;
        }
        public String getName() {
            return name;
        }
        public void setName(String name) {
            this.name = name;
        }
        public String getAdres() {
            return adres;
        }
        public void setAdres(String adres) {
            this.adres = adres;
        }
        public String getPhone() {
            return phone;
        }
        public void setPhone(String phone) {
            this.phone = phone;
        }
}
```

Element.java:

```
import javafx.beans.property.SimpleIntegerProperty;
import javafx.beans.property.SimpleStringProperty;

public class Element {
    private SimpleStringProperty product;
    private SimpleStringProperty client;
    private SimpleIntegerProperty count;
    private SimpleStringProperty contrName;
    private SimpleIntegerProperty id;
    public Element(String product, String client, int count, String contrName, int id) {
        this.product = new SimpleStringProperty(product);
        this.client = new SimpleStringProperty(client);
        this.count = new SimpleIntegerProperty(count);
        this.contrName = new SimpleStringProperty(contrName);
        this.id = new SimpleIntegerProperty(id);
    }
    public String getProduct() {
        return product.get();
    }
    public void setProduct(String product) {
        this.product.set(product);
    }
    public String getClient() {
        return client.get();
    }
    public void setClient(String client) {
        this.client.set(client);
    }
    public int getCount() {
        return count.get();
    }
    public void setCount(int count) {
        this.count.set(count);
    }
    public int getId() {
        return id.get();
    }
    public void setId(int id) {
        this.count.set(id);
    }
    public String getContr() { return contrName.get(); }
    public void setContr(String contr) { this.contrName.set(contr); }
}
```

Product.java:

```
public class Product {
    private int id;
    private String name;
    private double cost;
    private int type;
    public Product(int id, String name, double cost, int type) {  this.id = id;
        this.name = name;
        this.cost = cost;
        this.type = type;
    }
    public int getId() {
```

```
        return id;
    }
    public String getName() {
        return name;
    }
    public double getCost() {
        return cost;
    }
    public int getType() {
        return type;
    }
    public void setId(int id) {
        this.id = id;
    }
    public void setName(String name) {
        this.name = name;
    }
    public void setCost(double cost) {
        this.cost = cost;
    }
    public void setType(int type) {
        this.type = type;
    }
}
```

Sample.fxml:

```
<?xml version="1.0" encoding="UTF-8"?>

<?import java.lang.*?>
<?import java.util.*?>
<?import javafx.scene.*?>
<?import javafx.scene.control.*?>
<?import javafx.scene.layout.*?>

<?import javafx.geometry.Insets?>
<?import javafx.scene.text.Font?>
<VBox maxHeight="-Infinity" minHeight="400.0" minWidth="600.0" prefHeight="400.0" prefWidth="600.0"
xmlns="http://javafx.com/javafx/10.0.2-internal" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Controller">
<children>
    <HBox maxWidth="1.7976931348623157E308" prefHeight="30.0">
        <children>
            <Button maxWidth="1.7976931348623157E308" minWidth="0.0"  mnemonicParsing="false"
onAction="#clickAddButton" text="Добавить запись"  HBox.hgrow="ALWAYS">
                <HBox.margin>
                    <Insets right="10.0" />
                </HBox.margin>
            </Button>
            <Button maxWidth="1.7976931348623157E308" mnemonicParsing="false"
onAction="#clickUpdateButton" text="Изменить запись" HBox.hgrow="ALWAYS">  <HBox.margin>
                <Insets right="10.0" />
            </HBox.margin></Button>
            <Button maxWidth="1.7976931348623157E308" mnemonicParsing="false"
onAction="#clickDeleteButton" text="Удалить запись" HBox.hgrow="ALWAYS" />  </children>
    </HBox>
    <CheckBox fx:id="checkBox" alignment="CENTER" maxWidth="1.7976931348623157E308"
mnemonicParsing="false" onAction="#clickCheckBox" text="сортировать по продукту">  <font>
        <Font name="Bell MT" size="14.0" />
    </font>
```

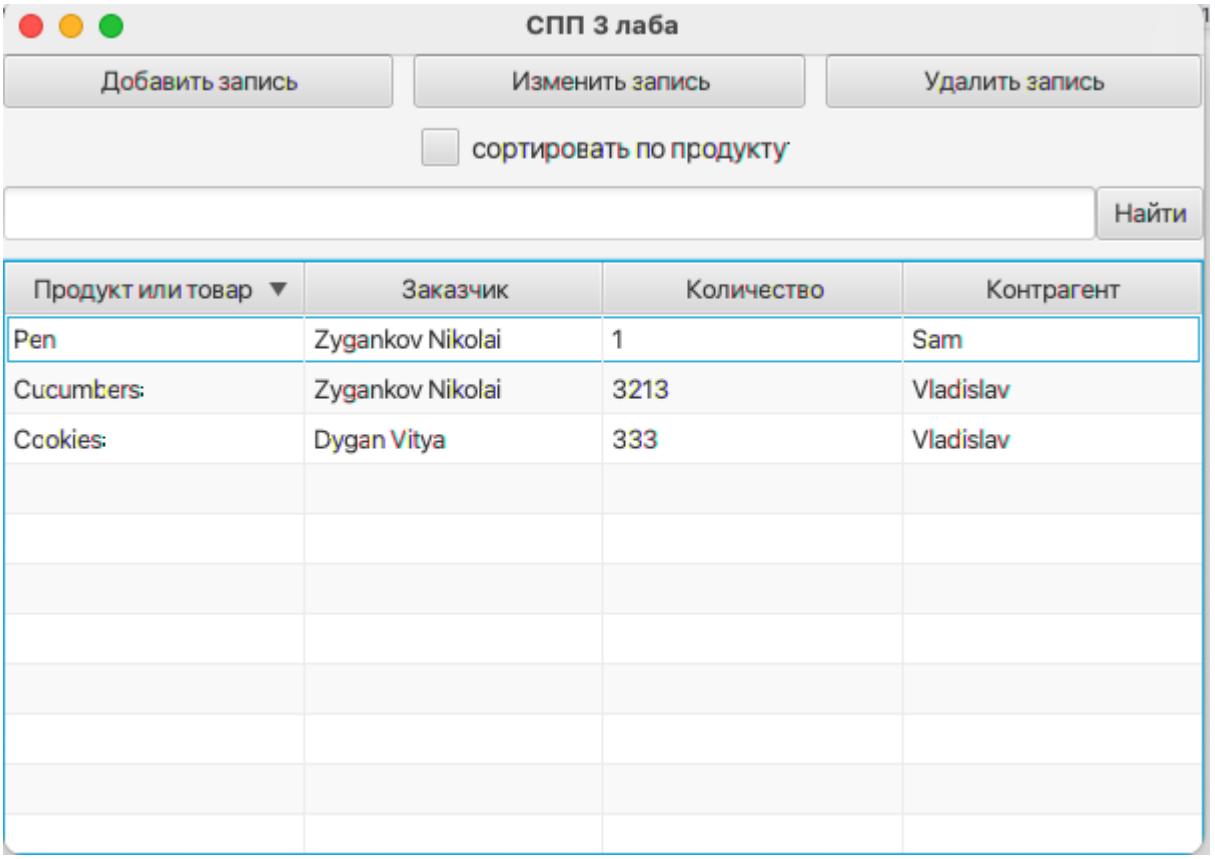
```
      <VBox.margin>
         <Insets top="10.0" />
      </VBox.margin>
   </CheckBox>
   <HBox prefHeight="30.0">
      <children>
         <TextField fx:id="textArea" HBox.hgrow="ALWAYS">
            <HBox.margin>
               <Insets />
            </HBox.margin>
         </TextField>
         <Button fx:id="searchButton" alignment="CENTER" mnemonicParsing="false"
onAction="#clickSearchButton" text="Найти" />
      </children>
      <VBox.margin>
         <Insets bottom="10.0" top="10.0" />
      </VBox.margin></HBox>
   <TableView fx:id="table" maxHeight="1.7976931348623157E308">  <columns>
      <TableColumn fx:id="tableItemProduct" text="Продукт или товар" />  <TableColumn fx:id="tableItemClient"
text="Заказчик" />  <TableColumn fx:id="tableItemCount" text="Количество" /> <TableColumn
fx:id="tableItemContr" text="Контрагент" /> <TableColumn fx:id="tableItemId" text="id" visible="false" />
</columns>
      <columnResizePolicy>
         <TableView fx:constant="CONSTRAINED_RESIZE_POLICY" />  </columnResizePolicy>
   </TableView>
</children>
</VBox>
```

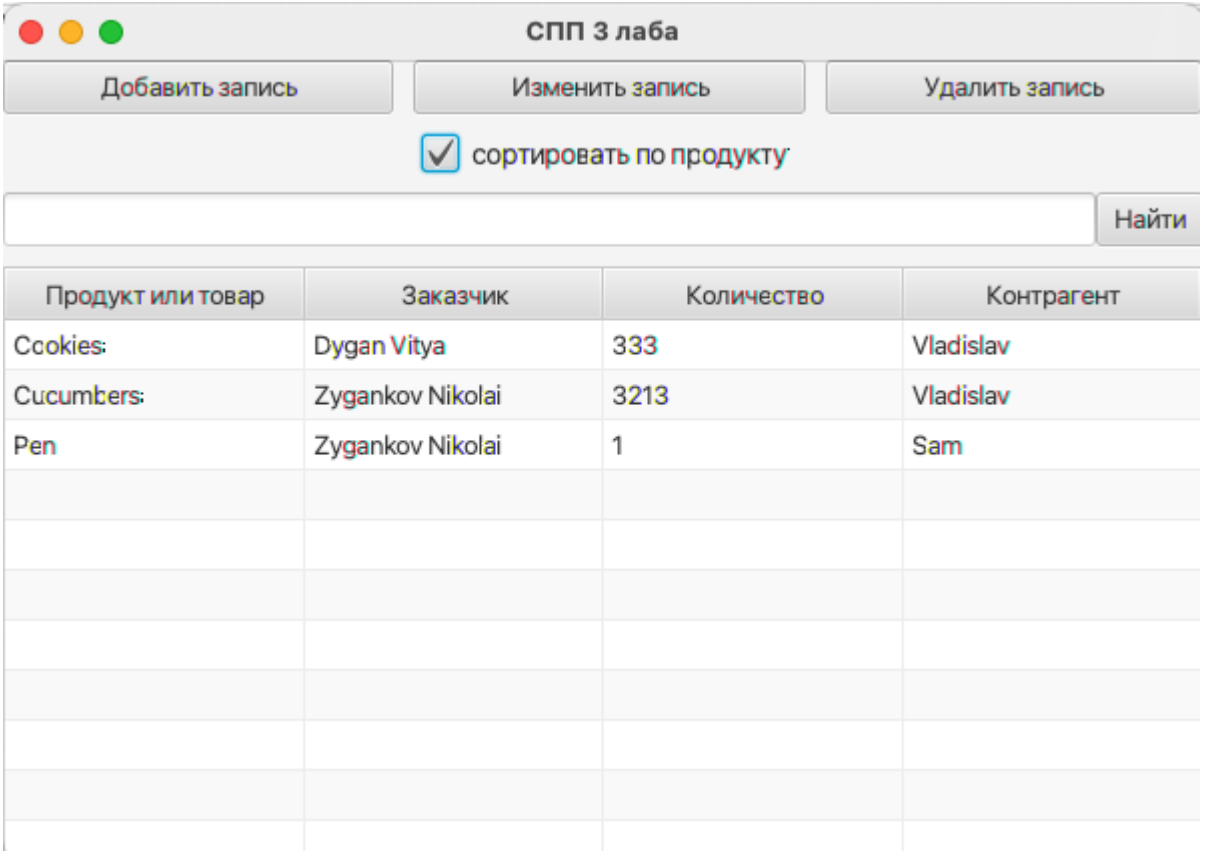
adder.fxml:

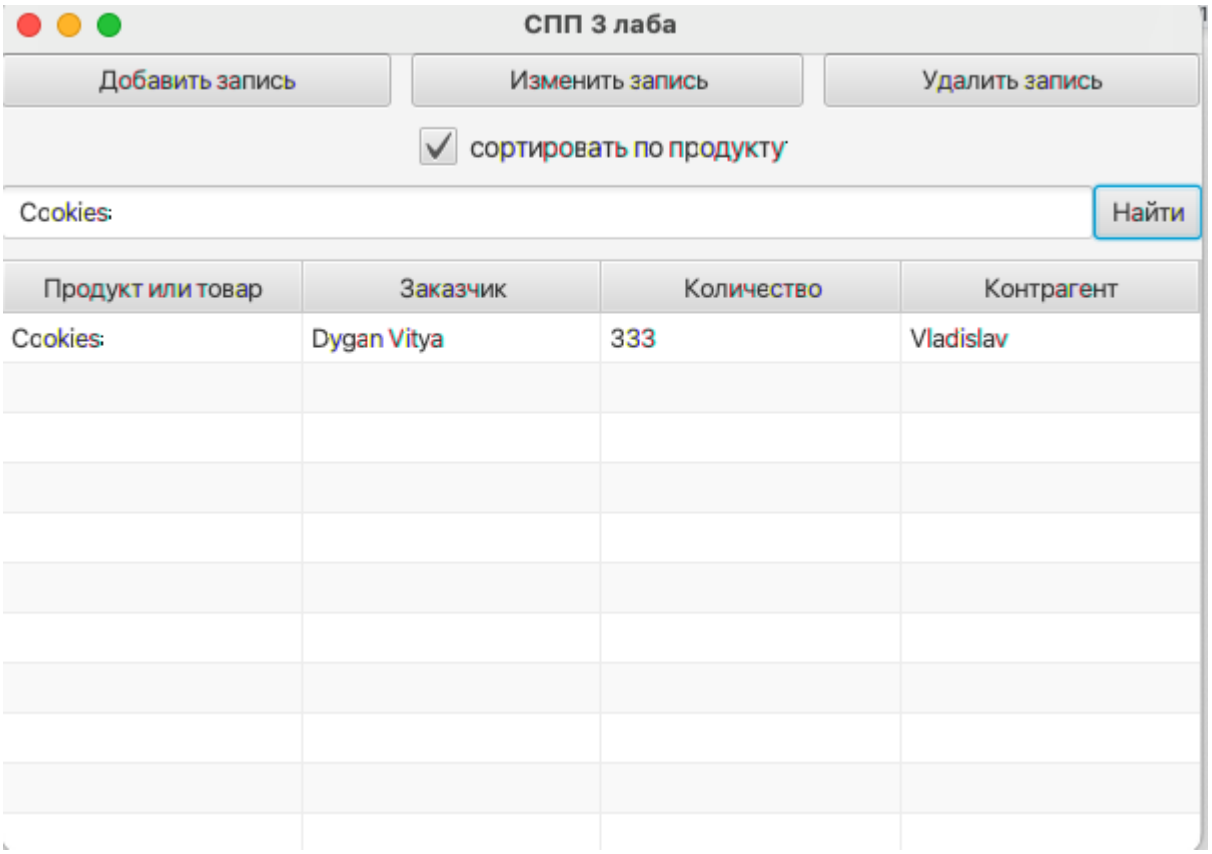
```
<?xml version="1.0" encoding="UTF-8"?>

<?import java.lang.*?>
<?import java.util.*?>
<?import javafx.scene.*?>
<?import javafx.scene.control.*?>
<?import javafx.scene.layout.*?>

<?import javafx.geometry.Insets?>
<VBox maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-Infinity" minWidth="-Infinity"
prefHeight="400.0" prefWidth="600.0" xmlns="http://javafx.com/javafx/10.0.2- internal"
xmlns:fx="http://javafx.com/fxml/1" fx:controller="AdderController">  <children>
   <ComboBox fx:id="comboBoxProducts" maxWidth="1.7976931348623157E308"  promptText="Выберите
продукт или товар">
      <VBox.margin>
         <Insets bottom="30.0" />
      </VBox.margin>
   </ComboBox>
   <ComboBox fx:id="comboBoxClients" maxWidth="1.7976931348623157E308"  promptText="Выберите
заказчика">
      <VBox.margin>
         <Insets bottom="30.0" />
      </VBox.margin>
   </ComboBox>
   <ComboBox fx:id="comboBoxContr" maxWidth="1.7976931348623157E308"  promptText="Выберите
контрагента">
      <VBox.margin>
         <Insets bottom="30.0" />
      </VBox.margin>
```

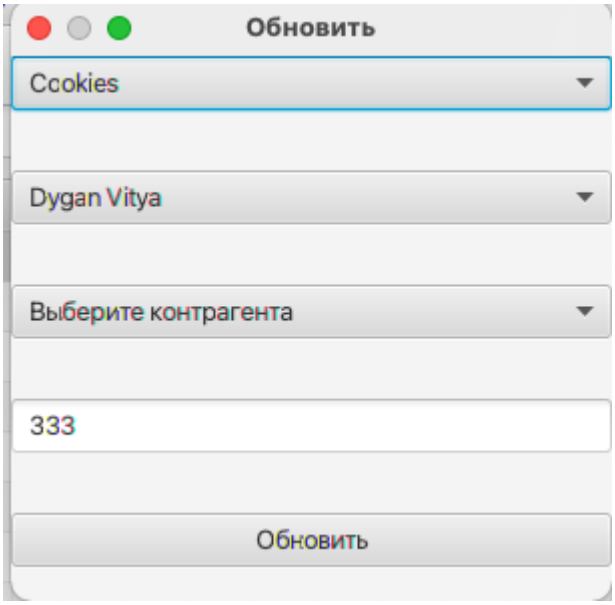
```
    </ComboBox>
    <TextField fx:id="textAreaCount" maxWidth="1.7976931348623157E308"  promptText="Введите количество">
      <VBox.margin>
        <Insets bottom="30.0" />
      </VBox.margin>
    </TextField>
    <Button fx:id="buttonAdd" maxWidth="1.7976931348623157E308" mnemonicParsing="false"
onAction="#addButtonClick" text="Добавить" />
</children>
</VBox>
```

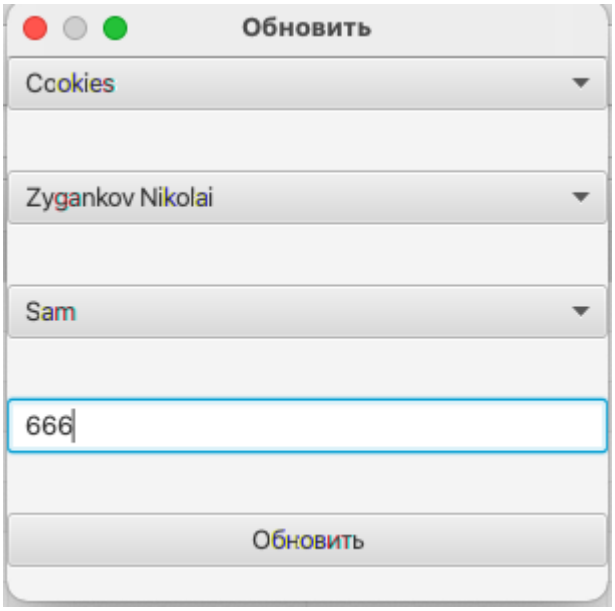
Результат выполнения:

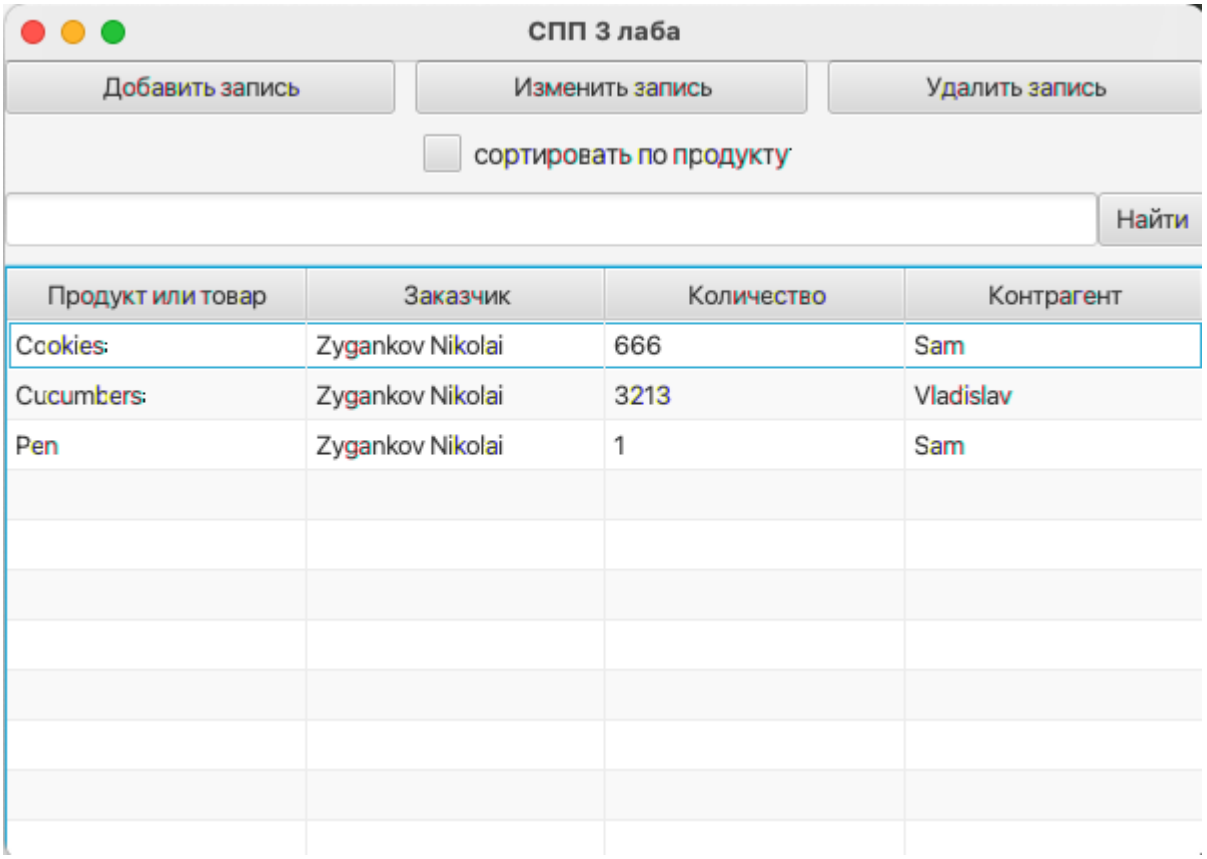


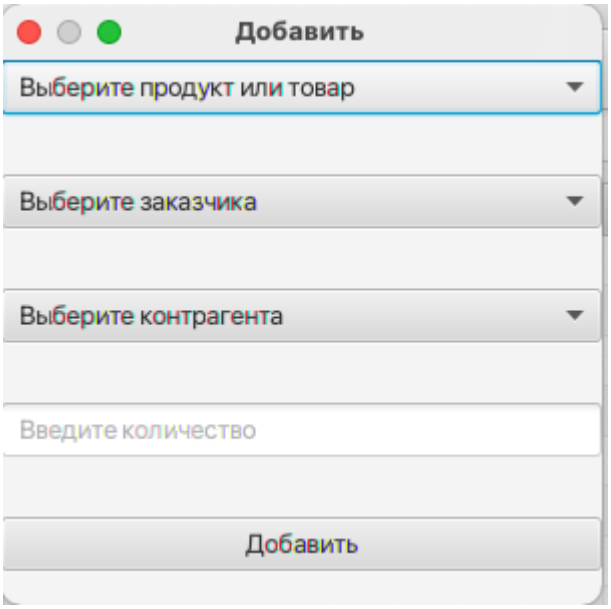

СПП 3 лаба
Добавить запись
Изменить запись
Удалить запись
сортировать по продукту
Найти
Продукт или товар
Заказчик
Количество
Контрагент
Ccokies:
Dygan Vitya
333
Vladislav
Cucumbers:
Zygankov Nikolai
3213
Vladislav
Pen
Zygankov Nikolai
1
Sam

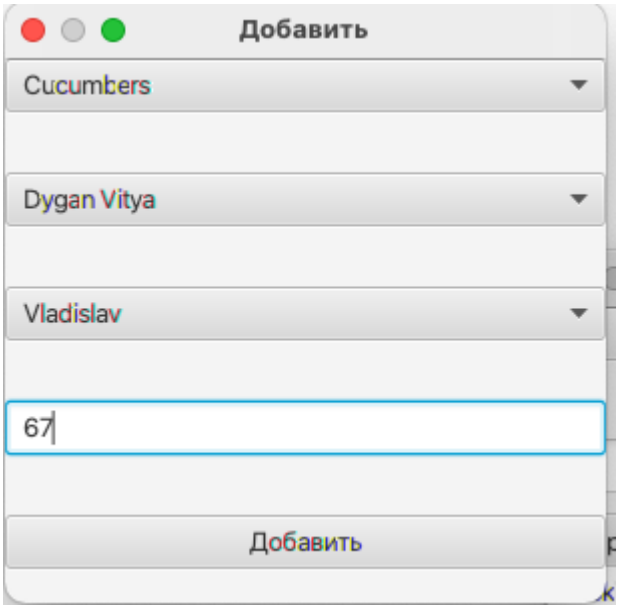

СПП 3 лаба
Добавить запись
Изменить запись
Удалить запись
сортировать по продукту
Ccokies:
Найти
Продукт или товар
Заказчик
Количество
Контрагент
Ccokies:
Dygan Vitya
333
Vladislav

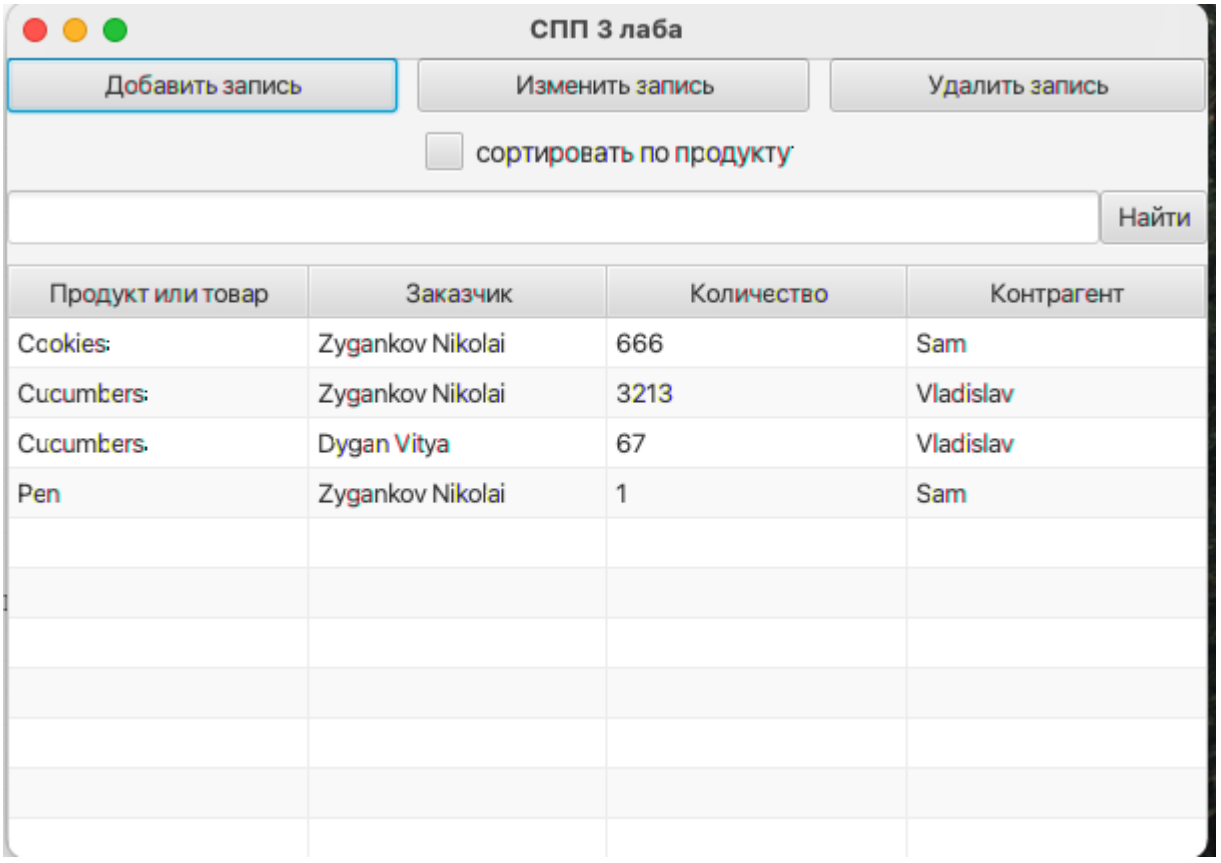

Обновить
Ccokies
Dygan Vitya
Выберите контрагента
333
Обновить


Обновить
Ccokies
Zygankov Nikolai
Sam
666
Обновить


СПП 3 лаба
Добавить запись
Изменить запись
Удалить запись
сортировать по продукту
Найти
Продукт или товар
Заказчик
Количество
Контрагент
Ccokies:
Zygankov Nikolai
666
Sam
Cucumbers:
Zygankov Nikolai
3213
Vladislav
Pen
Zygankov Nikolai
1
Sam


Добавить
Выберите продукт или товар
Выберите заказчика
Выберите контрагента
Введите количество
Добавить


Добавить
Cucumbers
Dygan Vitya
Vladislav
67
Добавить


СПП 3 лаба
Добавить запись
Изменить запись
Удалить запись
сортировать по продукту
Найти
Продукт или товар
Заказчик
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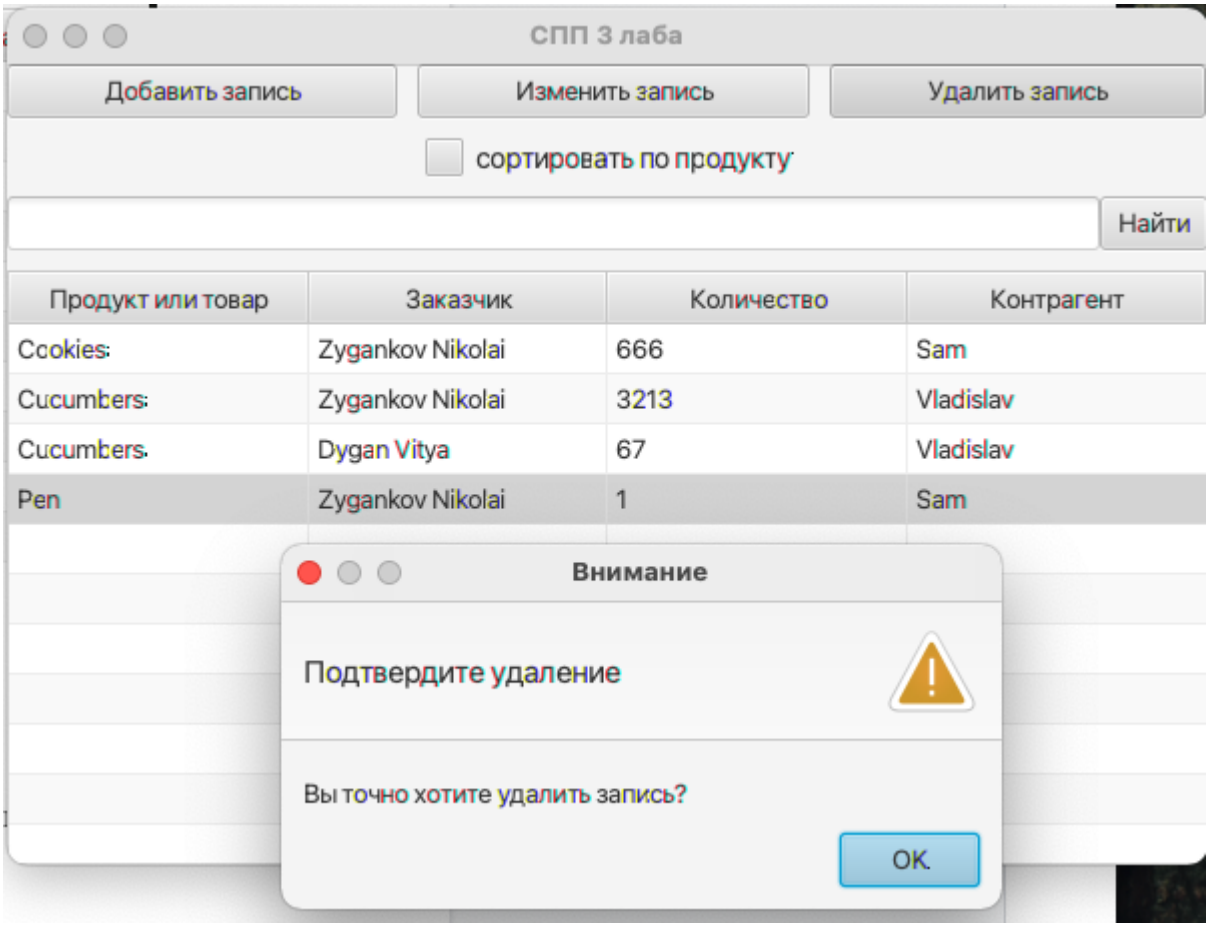
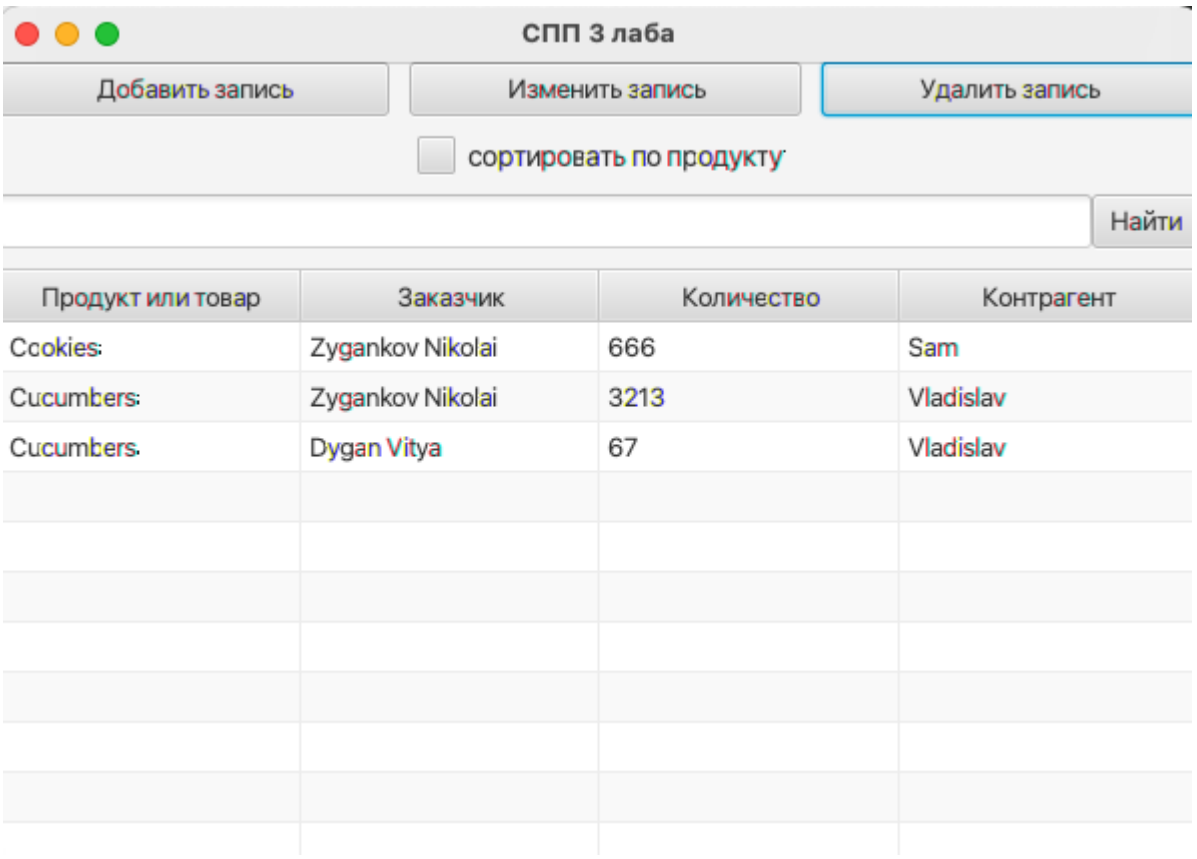
67
Vladislav
Pen
Zygankov Nikolai
1
Sam





Вывод: приобрел практические навыки разработки многооконных приложений на JavaFX для работы с базами данных.