

## **16. Розробка графічного інтерфейсу користувача**

**Мета:** Придбання навичок використання засобів клієнтських технологій (Client Technologies) платформи Java SE.

### **1 ВИМОГИ**

#### **1.1 Розробник**

Інформація про розробника:

- Куйдін Михайло Андрійович
- НТУ “ХПІ” 1.KIT102.8a
- Варіант 10

#### **1.2 Загальне завдання**

- Розробити графічний інтерфейс користувача для програми рішення попередньої лабораторної роботи з використанням засобів JavaFX.

**10. Відділ кадрів.** Особиста картка співробітника: паспортні дані; освіта; оклад; кар'єра - набір значень "дата призначення, посада, відділ"; характеристика - набір властивостей і оцінок.

## 2 ОПИС ПРОГРАМИ

### 2.1 Засоби ООП

У даній програмі присутні об'єктно-орієнтовані методи:

Інкапсуляція – захист даних від неправомірного користування.

### 2.2 Ієрархія та структура даних

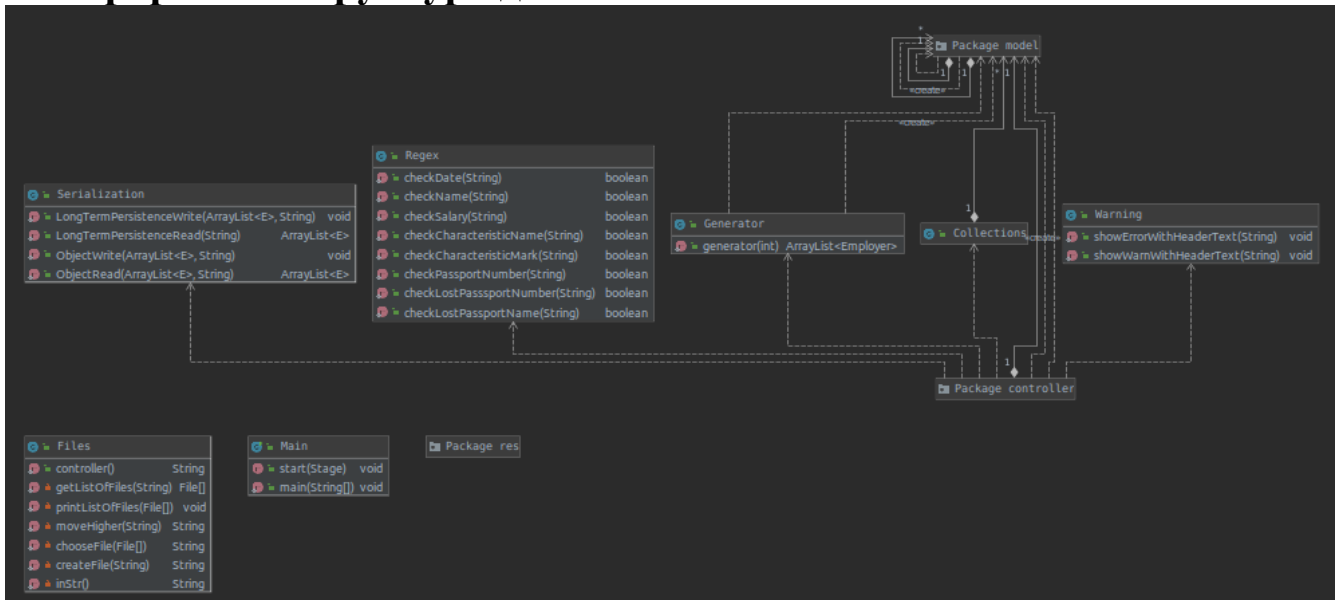


Рисунок 1 – Діаграма класів

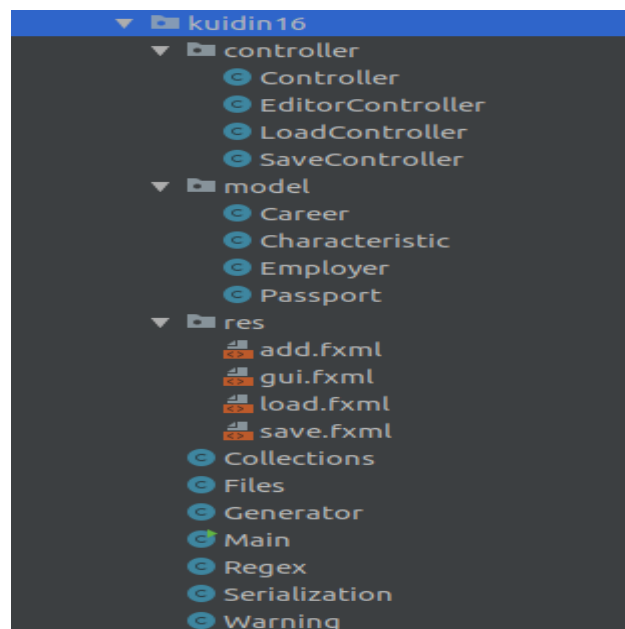


Рисунок 2 — Структура пакета

## 2.3 Важливі фрагменти програми

```
public static <E> void LongTermPersistenceWrite(ArrayList<E> object, String path) throws FileNotFoundException {  
    XMLEncoder encoder = new XMLEncoder(  
        new BufferedOutputStream(  
            new FileOutputStream(path)));  
    for (E elem : object) {  
        encoder.writeObject(elem);  
    }  
    encoder.close();  
}
```

Рисунок 3 — Сериалізація

```
deleteButton.setOnAction(actionEvent ->{  
    ObservableList<Employer> accountsSelected = tableEmployers.getSelectionModel().getSelectedItem();  
    ArrayList<Employer> items = new ArrayList<>(tableEmployers.getSelectionModel().getSelectedItem());  
    Collections.employerObservableList.removeAll(accountsSelected);  
    tableEmployers.getSelectionModel().clearSelection();  
    Collections.list.removeAll(items);  
});
```

Рисунок 4 — Сериалізація

```
loadDataButton.setOnAction(actionEvent -> {  
    FXMLLoader loader = new FXMLLoader();  
    loader.setLocation(getClass().getResource( name: "../res/load.fxml"));  
    try {  
        loader.load();  
    } catch (IOException e) {  
        e.printStackTrace();  
    }  
    Parent root = loader.getRoot();  
    Stage stage = new Stage();  
    stage.setScene(new Scene(root));  
    stage.setResizable(false);  
    stage.showAndWait();  
});
```

Рисунок 5 — Відкриття нового вікна

### 3 ВАРІАНТИ ВИКОРИСТАННЯ

Passport	Educa...	Characteristic	Careers	Salary
Passport number: 37267850RT... Name: Misha Date of birthday: 7 мар. 2009 г.	Courses	[ Characteristic name: Social skills Mark: 51, Characteristic name: Hardworking Mark: 24, Characteristic name: Stress resistant Mark: 23, Characteristic name: Punctual Mark: 28]	[ Date of appointment: 20 нояб. 2012 г. Position: Q&R Department: Netflix]	1460
Passport number: 43148609XB... Name: Атем Date of birthday: 23 дек. 1995 г.	Courses	[ Characteristic name: Social skills Mark: 50, Characteristic name: Hardworking Mark: 47, Characteristic name: Stress resistant Mark: 48, Characteristic name: Punctual Mark: 16]	[ Date of appointment: 27 февр. 1997 г. Position: TeamLeader Department: Yandex, Date of appointment: 13 июн. 2008 г. Position: Manager Department: Google]	2290
Passport number: 46105683WF... Name: Vlad Date of birthday: 10 июн. 2001 г.	Medium	[ Characteristic name: Social skills Mark: 56, Characteristic name: Hardworking Mark: 94, Characteristic name: Stress resistant Mark: 90, Characteristic name: Punctual Mark: 43]	[ Date of appointment: 7 авг. 2004 г. Position: TeamLeader Department: Netflix, Date of appointment: 26 дек. 2005 г. Position: TeamLeader Department: Netflix]	3448
Passport number: 731353FM Name: Vlad Date of birthday: 28 дек. 1999 г.	High	[ Characteristic name: Social skills Mark: 57, Characteristic name: Hardworking Mark: 67, Characteristic name: Stress resistant Mark: 97, Characteristic name: Punctual Mark: 23]	[ Date of appointment: 25 июн. 2014 г. Position: Q&R Department: Yandex, Date of appointment: 5 ани. 2007 г. Position: Engineer Department: Netflix, Date of appointment: 3 окт. 2001 г. Position: Manager Department: Yandex]	1418

Generator

Sort

- ☐ Passport number
- ☐ Salary
- ☐ Avg mark

- ☐ Passport number
- ☐ Name
- ☐ Salary

Рисунок 6 — Головне меню

## Add new Employee

12345678XX

yyyy-MM-dd

2000-11-15

15000

Misha

High

EPAM

Leader

yyyy-MM-dd

2006-06-06

Divide by " , ":

Social Skills-50;  
Communication-60;  
Soft Skills-20;

Add

Рисунок 7 — вікно для додавання нового працівника

Passport	Educa...	Characteristic	Careers	Salary
Passport number: 12345678XX... Name: Misha Date of birthday: 15 нояб. 2000 г.	High	[ Characteristic name: Social Skills Mark: 50, Characteristic name: Communication Mark: 60, Characteristic name: Soft Skills Mark: 20]	[ Date of appointment: 6 июн. 2006 г. Position: Leader Department: EPAM]	15000

Generator



Sort

- ☐ Passport number
- ☐ Salary
- ☐ Avg mark
-

Рисунок 8 — новий працівник

Passport number: 82689105EL... Name: Артём Date of birthday: 5 мар. 1995 г.	Courses	[ Characteristic name: Social skills Mark: 38, Characteristic name: Hardworking Mark: 33, Characteristic name: Stress resistant Mark: 26, Characteristic name: Punctual Mark: 77]	[ Date of appointment: 9 сент. 1992 г. Position: Manager Department: Yandex, Date of appointment: 3 нояб. 2007 г. Position: Q&R Department: Yandex]	2555
Passport number: 30490895GF... Name: Vlad Date of birthday: 14 дек. 2015 г.	High	[ Characteristic name: Social skills Mark: 9, Characteristic name: Hardworking Mark: 39, Characteristic name: Stress resistant Mark: 63, Characteristic name: Punctual Mark: 59]	[ Date of appointment: 21 дек. 1995 г. Position: Q&R Department: Yandex]	3294
Passport number: 19468208IA Name: Sasha Date of birthday: 20 авг. 2011 г.	High	[ Characteristic name: Social skills Mark: 55, Characteristic name: Hardworking Mark: 43, Characteristic name: Stress resistant Mark: 78, Characteristic name: Punctual Mark: 2]	[ Date of appointment: 16 дек. 2001 г. Position: Q&R Department: Yandex, Date of appointment: 26 мар. 1992 г. Position: Engineer Department: Yandex, Date of appointment: 4 янв. 2013 г. Position: Engineer Department: Yandex]	3957
Passport number: 97315400BD... Name: Артём Date of birthday: 14 июн. 1992 г.	Medium	[ Characteristic name: Social skills Mark: 52, Characteristic name: Hardworking Mark: 17, Characteristic name: Stress resistant Mark: 87, Characteristic name: Punctual Mark: 111]	[ Date of appointment: 26 февр. 1990 г. Position: Manager Department: Google, Date of appointment: 16 июн. 1995 г. Position: Manager Department: Yandex, Date of appointment: 14 авг. 1999 г. Position: Manager]	3998

Рисунок 9 — згенеровані значення

Passport number: 54212013SL... Name: Артем Date of birthday: 18 авг. 2000 г.	High	[ Characteristic name: Social skills Mark: 39, Characteristic name: Hardworking Mark: 50, Characteristic name: Stress resistant Mark: 96, Characteristic name: Punctual Mark: 85]	[ Date of appointment: 21 окт. 1990 г. Position: Engineer Department: Netflix, Date of appointment: 6 февр. 2009 г. Position: TeamLeader Department: Yandex]	1003
Passport number: 76933698T] Name: Ivan Date of birthday: 5 окт. 1995 г.	Courses	[ Characteristic name: Social skills Mark: 87, Characteristic name: Hardworking Mark: 12, Characteristic name: Stress resistant Mark: 12, Characteristic name: Punctual Mark: 36]	[ Date of appointment: 6 июл. 2014 г. Position: Manager Department: Netflix, Date of appointment: 21 дек. 1990 г. Position: Engineer Department: Netflix, Date of appointment: 15 мая 1990 г. Position: Q&R Department: Yandex]	1015
Passport number: 83938660RU... Name: Ivan Date of birthday: 15 янв. 2001 г.	Courses	[ Characteristic name: Social skills Mark: 87, Characteristic name: Hardworking Mark: 54, Characteristic name: Stress resistant Mark: 52, Characteristic name: Punctual Mark: 57]	[ Date of appointment: 17 янв. 1993 г. Position: TeamLeader Department: Yandex, Date of appointment: 17 апр. 2003 г. Position: Manager Department: Netflix, Date of appointment: 30 июл. 2005 г. Position: Engineer Department: Google]	1022
Passport number: 66111648PO... Name: Артем Date of birthday: 29 нояб. 2005 г.	Medium	[ Characteristic name: Social skills Mark: 60, Characteristic name: Hardworking Mark: 21, Characteristic name: Stress resistant Mark: 35, Characteristic name: Punctual	[ Date of appointment: 4 окт. 2011 г. Position: Engineer Department: Netflix, Date of appointment: 5 дек. 2005 г. Position: Engineer Department: Yandex]	1034

Рисунок 10 — сортування за заробітною платою

Passport	Educa...	Characteristic	Careers	Salary
Passport number: 54212013SL... Name: Артем Date of birthday: 18 авг. 2000 г.	High	[ Characteristic name: Social skills Mark: 39, Characteristic name: Hardworking Mark: 50, Characteristic name: Stress resistant Mark: 96, Characteristic name: Punctual Mark: 85]	[ Date of appointment: 21 окт. 1990 г. Position: Engineer Department: Netflix, Date of appointment: 6 февр. 2009 г. Position: TeamLeader Department: Yandex]	1003
Passport number: 76933698T] Name: Ivan Date of birthday: 5 окт. 1995 г.	Courses	[ Characteristic name: Social skills Mark: 87, Characteristic name: Hardworking Mark: 12, Characteristic name: Stress resistant Mark: 12, Characteristic name: Punctual Mark: 36]	[ Date of appointment: 6 июл. 2014 г. Position: Manager Department: Netflix, Date of appointment: 21 дек. 1990 г. Position: Engineer Department: Netflix, Date of appointment: 15 мая 1990 г. Position: Q&R Department: Yandex]	1015
Passport number: 83938660RU... Name: Ivan Date of birthday: 15 янв. 2001 г.	Courses	[ Characteristic name: Social skills Mark: 87, Characteristic name: Hardworking Mark: 54, Characteristic name: Stress resistant Mark: 52, Characteristic name: Punctual Mark: 57]	[ Date of appointment: 17 янв. 1993 г. Position: TeamLeader Department: Yandex, Date of appointment: 17 апр. 2003 г. Position: Manager Department: Netflix, Date of appointment: 30 июл. 2005 г. Position: Engineer Department: Google]	1022
Passport number: 66111648PO... Name: Артем Date of birthday: 29 нояб. 2005 г.	Medium	[ Characteristic name: Social skills Mark: 60, Characteristic name: Hardworking Mark: 21, Characteristic name: Stress resistant Mark: 35, Characteristic name: Punctual	[ Date of appointment: 4 окт. 2011 г. Position: Engineer Department: Netflix, Date of appointment: 5 дек. 2005 г. Position: Engineer Department: Yandex]	1034

Generator

200 Generate

Sort

☐ Passport number

☒ Salary

☐ Avg mark

Sort

Add Delete

Save Load

☐ Passport number

☐ Name

☐ Salary

Search

Reset

Рисунок 11 — обранні елементи для видалення

Passport	Educa...	Characterisctic	Careers	Salary
Passport number: 54212013SL... Name: Артем Date of birthday: 18 авг. 2000 г.	High	[ Characteristic name: Social skills Mark: 39, Characteristic name: Hardworking Mark: 50, Characteristic name: Stress resistant Mark: 96, Characteristic name: Punctual Mark: 85]	[ Date of appointment: 21 окт. 1990 г. Position: Engineer Department: Netflix, Date of appointment: 6 февр. 2009 г. Position: TeamLeader Department: Yandex]	1003
Passport number: 83938660RU... Name: Ivan Date of birthday: 15 янв. 2001 г.	Courses	[ Characteristic name: Social skills Mark: 87, Characteristic name: Hardworking Mark: 54, Characteristic name: Stress resistant Mark: 52, Characteristic name: Punctual Mark: 57]	[ Date of appointment: 17 янв. 1993 г. Position: TeamLeader Department: Yandex, Date of appointment: 17 апр. 2003 г. Position: Manager Department: Netflix, Date of appointment: 30 июл. 2005 г. Position: Engineer Department: Google]	1022
Passport number: 66111648PO... Name: Артем Date of birthday: 29 нояб. 2005 г.	Medium	[ Characteristic name: Social skills Mark: 60, Characteristic name: Hardworking Mark: 21, Characteristic name: Stress resistant Mark: 35, Characteristic name: Punctual Mark: 65]	[ Date of appointment: 4 окт. 2011 г. Position: Engineer Department: Netflix, Date of appointment: 5 дек. 2005 г. Position: Engineer Department: Yandex]	1034
Passport number: 65039932KK... Name: Vlad Date of birthday: 4 окт. 1992 г.	Courses	[ Characteristic name: Social skills Mark: 84, Characteristic name: Hardworking Mark: 83, Characteristic name: Stress resistant Mark: 82, Characteristic name: Punctual Mark: 44]	[ Date of appointment: 23 мар. 2008 г. Position: Engineer Department: Netflix, Date of appointment: 26 июн. 1992 г. Position: Q&R Department: Yandex]	1048

Generator

200

Generate

Sort

☐ Passport number

☐ Salary

☐ Avg mark

Sort

Add

Delete

Save

Load

☐ Passport number

☐ Name

☐ Salary

Search

Reset

Рисунок 12 — результат видалення

## Висновки:

В результаті виконання лабораторної роботи були придбані навички використання засобів клієнтських технологій (Client Technologies) платформи Java SE.