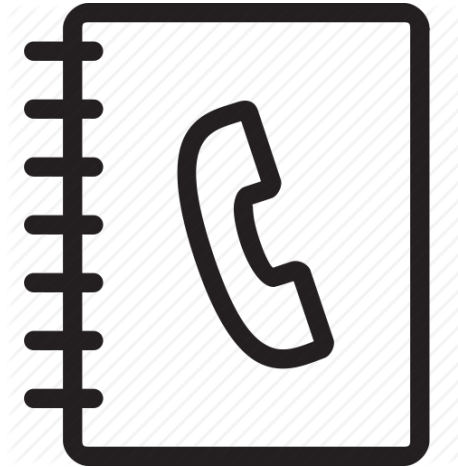


# Homework assessment 3. Python collections. File input-output



## General information

**Deadline:** November 24th, 23:59:59

**Submission:** through the Canvas information system as a single archive containing a Pycharm (or any other IDE) project.

## Introduction

Now you've learned the basics of the Python language, time to tackle some real world tasks. In this assignment, you will develop a Contact book application, very much like the one you have on your smartphone.

## Description of tasks

### Basic task (5 points)

You need to develop an application that will manage the list of person's contacts and provide the functionality of adding and removing contacts (for simplicity, the functionality of editing existing contacts does not have to be implemented). For each contact the following obligatory fields need to be stored:

- Name

- Phone number

Selecting the exact way of how to manage the collection of contacts in memory is up to you.

You need to create a program with a multi-level menu. The main menu will show the following three options:

1. View contact list
2. Add a new contact
3. Exit the application

When selecting the first option, the program should show a full list of contact names and present the user with the choice of either viewing a single contact in detail or exiting to the main menu. If the user goes to a contact's details, the app needs to show all the information about the contact and provide the user with the following submenu:

1. Delete contact
2. Go back to the contact list

You can start with having an empty or a hardcoded list of contacts. If you implement the second extra task, the information has to be taken from a file.

You can check the multi-level menu structure in the program flow example at the end of this document.

### **Extra task 1 - additional contact details (2 points)**

For each contact you will need to store a list of additional phone numbers and a list of additional fields from the following list: e-mail, vk, facebook, instagram, linkedin, telegram. Note that not all additional fields may be present, i.e. one contact may have e-mail and vk, the other - facebook and linkedin. In other words, the list of additional fields has to be dynamic.

### **Extra task 2 - file storage (3 points)**

Add file storage for the application data. On startup, the program should load all the contact information from the file before showing the main menu. On each change (adding, removing contact) the information should be written back to the same file, so that on the next program execution an updated dataset is available to the user.

### **Program flow example**

The following block shows the program flow for the basic + extra task 1. If you go for the basic task only, you won't need to enter and show additional details for each contact (only name and primary phone).

You don't have to exactly replicate the program flow shown below, but the general logic should be kept. You are also free to introduce additional complexity.

Choose an option:

- 1 - view contacts
- 2 - add new contact
- 3 - exit the application

Your choice: 1

Your contacts:

- 1 - Andrew Warrick
- 2 - Bob Jones
- 3 - Claire Mitchell
- 4 - Waine Smith

Enter contact number or 0 to exit to the main menu:

Your choice: 2

Bob Jones

Primary phone: +4915123123151

Phone 2: +1142312312312

Phone 3: +1312312312312

E-mail: b.jones@hotmail.com

Telegram: @bob123

Choose an option:

- 1 - Delete contact
- 2 - Go back to the contacts list

Your choice: 2

Your contacts:

- 1 - Andrew Warrick
- 2 - Bob Jones
- 3 - Claire Mitchell
- 4 - Waine Smith

Enter contact number or 0 to exit to the main menu:

Your choice: 4

Waine Smith

Primary phone: +491232123123

E-mail: waine789@gmail.com

Choose an option:

- 1 - Delete contact
- 2 - Go back to the contacts list

Your choice: 1

Are you sure you want to delete Waine Smith from your contact list (y/n)? y

Waine Smith successfully deleted from the contact book. Press any key to return to the contact list

continues on the next page...

```
Your contacts:
1 - Andrew Warrick
2 - Bob Jones
3 - Claire Mitchell
Enter contact number or 0 to exit to the main menu:
Your choice: 0

Choose an option:
1 - view contacts
2 - add new contact
3 - exit the application
Your choice: 2

Enter name: Mike Evans
Enter primary phone: +44123123123
Enter additional phone or empty: +44298009123
Enter additional phone or empty:
Select one of the following additional fields (e-mail, vk, facebook,
    instagram, linkedin, telegram) or empty: e-mail
Enter e-mail: mike.evans@gmail.com
Select one of the following additional fields (e-mail, vk, facebook,
    instagram, linkedin, telegram) or empty: instagramm
Field name not recognized
Select one of the following additional fields (e-mail, vk, facebook,
    instagram, linkedin, telegram) or empty: instagram
Enter instagram account: mikeevans89
Select one of the following additional fields (e-mail, vk, facebook,
    instagram, linkedin, telegram) or empty:
Contact Mike Evans successfully created!

Choose an option:
1 - view contacts
2 - add new contact
3 - exit the application
Your choice: 3
```