

Celal Bayar University Computer Engineering Department
CSE 2105 Data Structures

Project - II

12 November 2014

You should upload the homework to the **Moodle** until **10 December 2014 23:55**. Don't forget to write your name and your number. You should upload in fully working program as a zip/rar file with all required files. You can ask your questions to me or **Res. Assist. Zeynep ÇİPİLOĞLU YILDIZ**.

Assist. Prof. Dr. Tahir Emre KALAYCI

Project Specifications and Requirements

In this homework you need to develop a fully working phone book. The main objective of the homework is the development of efficient and convenient data structures for the program. *Instead of using Java Data Structures Libraries you should develop your own data structures.* You should follow object oriented programming methodology.

In this program **name, surname and address** of a **person** will be stored with maximum three **phone numbers**. *Person* and *PhoneNumber* should be different Java classes. Every phone number must be unique with its type. They must be stored as two fields: phone type (work, home, cell) and number. User can store name, surname and address of the person.

Using the command line and by selecting from a menu, program should be able to perform the following tasks for the data that is explained in previous paragraph:

1. Ability to *search* person and phone number
2. Ability to *create* new person and new phone numbers. Phone numbers can be created only for the already created people.
3. Ability to *update* people and phone numbers.
4. Ability to *delete* person (when a person deleted all phone numbers belonging to that person also should be deleted) and phone number.
5. Ability to *list all* records on the program and phone numbers of a selected person.

So according to these tasks at start program should show the following menu:

1. Search a person

It will ask for the use to enter any text information to search in the people and will list all people that matches the search query. Only first 9 search results will be shown as a list with numbers on left (but all results must be stored temporarily for the traverse of all results in the individual view):

1. Person1
2. Person2
3. Person3

User can select a person to open person information using the keyboard by clicking the corresponding number key. Individual page will show the information about the selected person:

← Person1 →

Type1 : Number1
Type2 : Number2
Type3 : Number3

In individual view user can use left and right arrow to move in search results. And also by clicking *INSERT* key user should be able to add new phone number to the user. By clicking *DELETE* key user can delete that user (all phone numbers belonging to that person should be deleted also). Clicking *UP* key must allow user to update person information.

2. Search a phone number

Ability to search in phone numbers. Matched users will be listed again as same as person search.

3. Create new person

This menu will add a new person by asking name, surname and address from the user. It will also should ask to the user if she wants to add a phone number to the user.

4. List all

Without a search criteria that option must list all the users alphabetically by using individual person view which is explained in the second part of the search menu.

5. Exit

That should stop the program, all the person information must be stored in a file (*phonebook.txt*) as a textual information when user selects that menu. At every start of the program, it will check for that file and build the people information from that file.