

PHONEBOOK (https://github.com/FrancescaSciacca6/OOP_CPP)

You want to write a program to manage a phone book. A phone book is a container with a finite capacity and can contain at most n entries. An entry is a triple $\langle \text{name}, \text{surname}, \text{phone number} \rangle$ or a BusinessVoice $\langle \text{name}, \text{surname}, \text{phone number}, \text{email}, \text{company} \rangle$.

Declare/Define in the files `voice.h/voice.cpp` a struct `voice` that represents the triple $\langle \text{fname}, \text{lname}, \text{ntel} \rangle$, and in the files `businessVoice.h/businessVoice.cpp` one about `businessVoice` that represents $\langle \text{fname}, \text{lname}, \text{phone number}, \text{email}, \text{company} \rangle$.

Declare/Define in the files `phoneBook.h/phoneBook.cpp` a class `phoneBook` that represents the address book of entries.

Use a dynamic array of entries to store the various entries.

The class contains all the fundamental methods and handles dynamic memory correctly.

Also use exceptions where appropriate.

The size of the array must be chosen by the user during the construction phase and through a `set_capacity` method. If when calling `set_capacity` the address book already contains entries and the indicated capacity allows it (new capacity greater than the old one), keep the entries, otherwise they will all be lost.

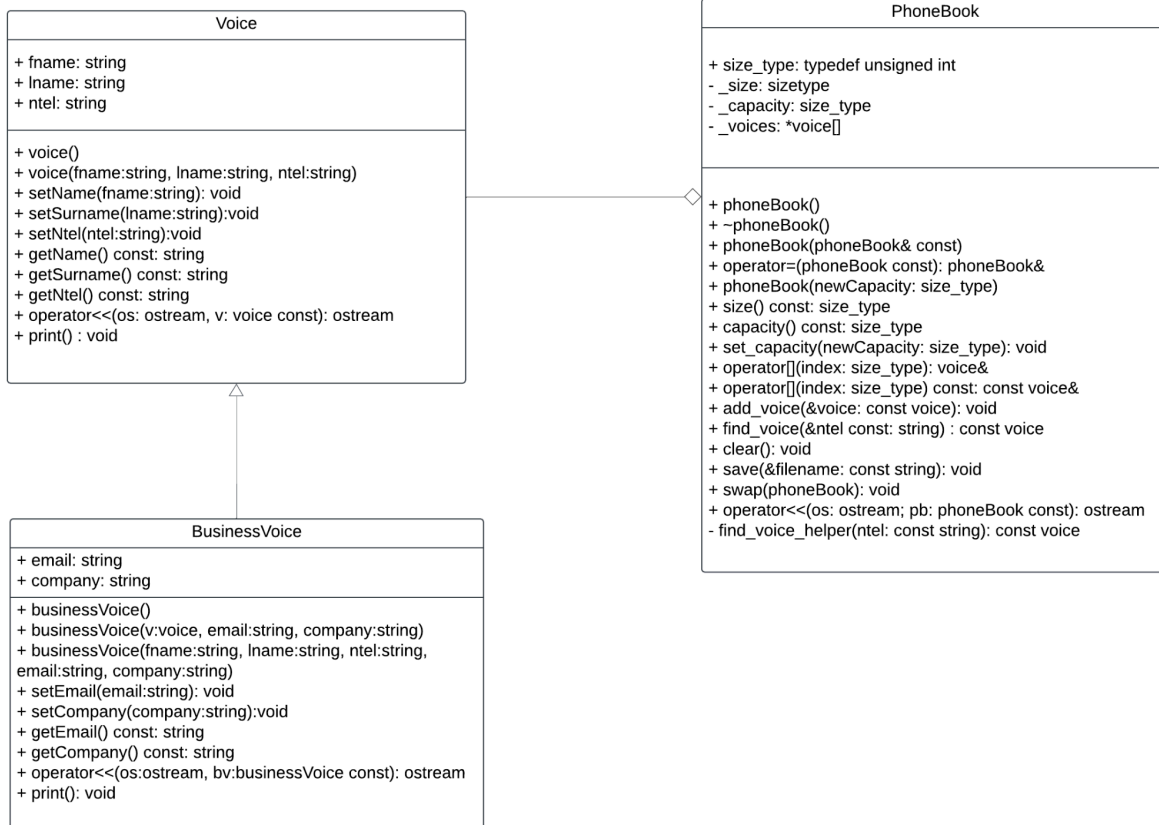
It is possible to know the number of entries that the directory can contain (capacity) and the number of entries actually entered (size).

Use `operator[]` to read and/or write the i -th entry in the address book. Handle the case in which the address book is full or an existing entry is inserted. It is possible to search and return an entry given the telephone number.

Implement, via `operator<<`, the printing of the contents of an address book. Save method that saves the contents of the address book to a text file.

`main.cpp` uses an address book interactively:

Ask the user how many entries the address book should have and set the address book appropriately. Ask the user which entries to insert by requesting the data of an entry. If the user inserts an asterisk (*), it means that he does not want to insert further entries. Ask the user if he wants to save the address book and, if so, the name of the file to use. Save the address book and display its contents on the screen.



```

[francesca@MateBookXPro2020 ProjectPROVE]$ ./main
*** TEST VOICE ***

Voice:
Voice: Paolino Paperino 313
BusinessVoice: Paolino Paperino 313 v3.campus@pk.com PK
Voice: Paolino Paperino 313
Voice: Mickey Mouse 111
  
```

```

*** TEST PHONEBOOK ***

Capacity: 0
Size: 0

Capacity: 10
Size: 0

Capacity: 10
Size: 0

Capacity: 10
Size: 4
Printing voice number 1
Name: name1, Surname: surname1, Phone: 11111

Printing voice number 2
Name: name2, Surname: surname2, Phone: 22222
Company: uania@22.com, Email: comapani2g. BusinessVoice: YES

Printing voice number 3
Name: name3, Surname: surname3, Phone: 33333
Company: uania@33.com, Email: comapani3g. BusinessVoice: YES

Printing voice number 4
Name: name4, Surname: surname4, Phone: 44444
  
```

```

!!! ERROR: your phoneBook is full !!!
Capacity: 5
Size: 5
Printing voice number 1
Name: name1, Surname: surname1, Phone: 11111

Printing voice number 2
Name: name2, Surname: surname2, Phone: 22222
Company: uania@22.com, Email: comapani2g. BusinessVoice: YES

Printing voice number 3
Name: name3, Surname: surname3, Phone: 33333
Company: uania@33.com, Email: comapani3g. BusinessVoice: YES
  
```

```

*** INTERACTIVE TEST ***

Insert the capacity of phoneBook: 2
Insert an entry
Name (* for terminate): Francesca
Surname: Sciacca
Telephone Number: 32499933333
Insert an entry
Name (* for terminate): Ludovica
Surname: Olga
Telephone Number: 235836499
Insert an entry
Name (* for terminate): *
Do you want to save the phoneBook (y/n)?y
Nome del file: interactive_test
Printing voice number 1
Name: Francesca, Surname: Sciacca, Phone: 32499933333
Printing voice number 2
Name: Ludovica, Surname: Olga, Phone: 235836499
PhoneBook pb saved.
  
```

```

interactive_test  X  +

File  Modifica  Visualizza

Capacity: 2
Size: 2
Voice: Francesca Sciacca 32499933333
Voice: Ludovica Olga 235836499
  
```