

<Advanced C Programming and Lab> Project

Contact Management Program: 1st Stage

Implement a contact management program. Details are available below.

© Contact information

Name, phone number, and birth date are stored. At most, 100 people's contact information can be stored. A name can be at most 20bytes excluding '\0', a phone number can be at most 15bytes without '-' (numbers only), a birth date is stored in a YYYYMMDD format using 8 bytes. No spaces, tabs, new lines are allowed. Do not evaluate the contact information. (one string received by scanf). No two persons have the same name, but other information can be identical.

Use a structure to store one person's information (name, phone number, birth date). Use a structure array to store multiple people's information. If necessary, allow to store additional information in a structure. Names are case-sensitive.

© Functions

The program provides several functions: 1) Registration 2) Delete: find and delete one's information, 3) FindByBirth 4) ShowAll. "Registration" is to receive contact information (name, phone number, birth date) from a user and store them in the program. "Delete" is find and delete one's contact information (name, phone number, birth date). "FindByBirth" is to display the people's contact information who were born in a particular month. "ShowAll" is to display all the contact information (name, phone number, birth date) that is stored in the program. When register one's information, sort all the contact information by name.(orders in ASCII code, use strcmp())

© User Interface

As a console menu. Use standard input/output. As executing the program, display all the menu that a user can choose on screen and wait for the input. 4 options are available: '1.Registration', '2.ShowAll', '3.Delete', '4.Exit'. Depending on the user's input, perform the proper function. Repeat until '4.Exit' is selected.

Below is the code to display the menu options. (Must use the code below)

```
printf("*****Menu*****\n");

printf("<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
\n");
printf("Enter_the_menu_number:");
```

A user inputs a number (1, 2, 3, 4, 5). Assume that no other inputs are received.

Select '1'('Registration'), use the code below to ask a user to input the new contact information. Assume that all the inputs comply the format requirements described above.

```
printf("Name:"); // do not change
...
printf("Phone_number:"); // do not change
...
printf("Birth:"); // do not change
...
```

If the maximum number of contact information is reached, then `printf("OVERFLOW\n");`, go back to the initial menu options. If the registration is completed, use `printf("<<%d>>\n", ..) ;` to display the number of contact information that is stored in the program, go back to the menu options. **(Sort the contact information by name whenever new information is received)**

Select '2'('ShowAll'), display all the contact information stored in the program **by the order that they are stored**. Display one person's information (name, phone number, birth date) in a line using the code below. (if no contact information is stored, do nothing, go back to the menu options)

```
printf("%s %s %s\n", ... );
```

Select '3'('Delete'), receive a name to delete using the code below. Delete the person's information. If not found, do nothing. If no contact information is stored, `printf("NO MEMBER\n");` go bac to the menu options.

```
printf("Name:"); // do not change
...
```

Select '4'('FindByBirth'), receive a month. Ex)1, 3, 12, etc.

```
printf("Birth"); // do not change
...
```

Display the people's information who were born in the month using the code below. If no contact information is stored, do nothing, go back to the menu options. If found multiple people, display their contact information by the order that they are stored (i.e., order in ASCII code)

```
printf("%s %s %s\n", ... );
```

Select '5'('Exit'), Exit the program.

◎ Requirements

Implement and use the following **functions**. Functions can be further subdivided.

- Registration function, Delete function, ShowAll function, FindByBirth function

Input Format

Use standard input (stdin). For the starting menu options, receive a number (1, 2, 3, 4, 5). Receive one string for a name, phone number, and birth date. Assume that all inputs are correct.

Output Format

Use standard output(stdout). Use the code above to display the starting menu options and contact information. (Do not display any additional numbers/characters/spaces/etc, can be considered as wrong answers)

※ Test Dataset : Include the following 2 examples

Input and output example 1

Underlined parts are inputs.

```
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:2
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:3
NO MEMBER
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:KimEunJoo
Phone_number:0001112222
Birth:19960101
<<1>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:LeeEunJoo
Phone_number:0103332222
Birth:19960202
<<2>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:HanEunJoo
Phone_number:0114445555
Birth:20000101
<<3>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:2
HanEunJoo 0114445555 20000101
KimEunJoo 0001112222 19960101
LeeEunJoo 0103332222 19960202
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:3
Name:KimEunJoo
```

```
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:2
HanEunJoo 0114445555 20000101
LeeEunJoo 0103332222 19960202
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:5
```

Input and output example 2

Underlined parts are inputs.

```
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:Kim
Phone_number:0112223333
Birth:19950101
<<1>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:Han
Phone_number:01011112222
Birth:19960302
<<2>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:1
Name:Lee
Phone_number:0101234567
Birth:19970903
<<3>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:2
Han 01011112222 19960302
Kim 0112223333 19950101
```

```
Lee 0101234567 19970903
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:4
Birth:1
Kim 0112223333 19950101
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.Exit>
Enter_the_menu_number:5
```

Submission and Due date

- * Submit your code via OJ system
- * Use proper indentation in your program. Properly comment your program.
- * Use standard library only (Ex:string.h). (cannot use algorithm header and STL files)
- * Do not need to submit any additional reports or materials