<Advanced C Programming and Lab> Project
Contact Management Program: 3rd Stage

Implement a contact management program. In 3rd stage, the program performs the same functions as 2nd stage as well as reads the contact information from a file. When terminating the program, you should save the contact information to a file. Details are avaliable below.

◎ Contact information
  Same as 2nd stage

◎ Functions
  In addition to 2nd stage, **File I/O is added**. (Menu 5, 6 are adjusted.)
  There are 6 functions: '1.Registration', '2.ShowAll', '3.Delete', '4.FindByBirth', '5.RegFromFile' '6.Exit'. '5.RegFromFile' reads the contact information from a file and store the information in the program (if no file exists, assume that there is no information to add). '6.Exit' save all the contact information to a file and terminates the program. (When abnormal termination, do not save the contact information to a file)
  The data filename must be "PHONE_BOOK.txt" and formatted as follows. From the first line in the file, each line contains one person's information (name, phone number, and birthdate), one space in between them. (if no contact information, it is an empty file). Below is an example of the data file containing three people's information. **If not ordered, must sort them by name**. If it exceeds the maximum number of contact information, must do printf("OVERFLOW\n");. Assume that there is a new line at the end of the file.

```
HongGilDong 11122223333 20000101
KimEunJoo 22233311111  19960101
ParkAReum 001020302032 20010101
```

Executing the program for the first time and exiting the program ('6.Exit'), the data file "PHONE_BOOK.txt" is created. If the file already exists, "PHONE_BOOK.txt" should be updated. The contact information received by '1.Registration' and '5.RegFromFile' should be processed together in the program. When terminating the program ('6.Exit'), all the contact information should be saved to the data file ("PHONE_BOOK.txt").

◎ User Interface

Same as 2nd stage. Receive the maximum number of contact information to receive. Print the menu options.

```
    printf("Max_num:");
    ...
```

Below is the code to display the menu options.

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

printf("<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.
Exit>\n");
    printf("Enter_the_menu_number:");
```

Others are the same.
Selecting '5. RegFromFile', receive the contact information from the dat a file but do not print anything.

◎ Requirements
Must add **File I/O**. (-100%)

Input Format

Use standard input (stdin). For the starting menu options, receive a number (1, 2, 3, 4, 5, 6). 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)

Input and output example 1
Underlined parts are inputs.

```
Max_num:
5
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:1
Name:Kim
Phone_number:00000000000
Birth:19980101
<<1>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:1
Name:Gang
Phone_number:11101010101
Birth:19940101
<<2>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:1
Name:Park
Phone_number:222333330101
Birth:20000101
<<3>>
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:2
Gang 11101010101 19940101
Kim 00000000000 19980101
Park 222333330101 20000101
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:6


--> "PHONE_BOOK.txt" must contains:
Gang 11101010101 19940101
Kim 00000000000 19980101
Park 222333330101 20000101
```

Input and output example 2

Assume that "PHONE_BOOK.txt" contains the information below

```
Kim 01022223333 19970101
Park 01032323232 19990301
Lee 01023232323 19980101
```

```
Max_num:
5
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:5
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:2
Kim 01022223333 19970101
Lee 01023232323 19980101
Park 01032323232 19990301
*****Menu*****
<1.Registration><2.ShowAll><3.Delete><4.FindByBirth><5.RegFromFile><6.Exit>
Enter_the_menu_number:6
```

Submission

* 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