1. Write a Python program that performs as an Employee Contact List which contains a list of contacts that can be modified or deleted.

2. Create a `contacts` module to meet the following requirements:
    i.   Create a file named `contacts.py`.
    ii.   Add a comment at the top of the file which indicates your name, date and the purpose of the file.
    iii. Note: All contact dictionaries within this module should assume a dictionary of the form: `{id: ['first', 'last'], id: ['first', 'last'], id: ['first', 'last']...}` where the id will be the phone number in this exercise.
    iv.   Note: All functions should implement a docstring with a simple sentence that describes the function.
    v.   Define a function named `add_contact` to meet the following requirements:
        a. Take a contact dictionary as a positional parameter.
        b. Take an `id` as a keyword parameter.
        c. Take a `first_name` as a keyword parameter.
        d. Take a `last_name` as a keyword parameter.
        e. If the id exists in the dictionary, return the string `error`.
        f. Append the id:[first_name, last_name] key:value pair to the contact dictionary.
        g. Return the value that was added.
    vi.   Define a function named `modify_contact` to meet the following requirements:
        a. Take a contact dictionary as a positional parameter.
        b. Take an `id` as a keyword parameter.
        c. Take a `first_name` as a keyword parameter.
        d. Take a `last_name` as a keyword parameter.
        e. If the id does not exist in the dictionary, return the string `error`.
        f. Update the value of the key id with the provided first_name and last_name
        g. Return the value that was added.
    vii. Define a function named `delete_contact` to meet the following requirements:
        a. Take a contact dictionary as a positional parameter.
        b. Take an `id` as a keyword parameter.
        c. If the id does not exist in the dictionary, return the string `error`.
        d. Remove the key:value pair with the key equal to id.

e. Return the deleted value with the key equal to id.

    viii. Define a function named `sort_contacts` to meet the following requirements:

        a. Take a contact dictionary as a positional parameter.

        b. Sort the dictionary in ascending order by last name, then by first name and return the sorted dictionary.

    ix. Define a function named `find_contact` to meet the following requirements:

        a. Take a contact dictionary as a positional parameter.

        b. Take a `find` as a keyword parameter.

        c. Create an empty dictionary.

        d. If find is a numeric value and contained as a key in the dictionary, add the key:value pair to the created dictionary.

        e. Loop through all the key:value pairs and if the 'find' substring is contained in either the first name or last name, add that key:value pair to the created dictionary.

        f. Sort the created dictionary in ascending order by last name then first name. Return the created dictionary.

3. Create a `main` driver program to meet the following requirements:

    i. Create a file named `main.py`.

    ii. Add a comment at the top of the file which indicates your name, date and the purpose of the file.

    iii. Import the `contacts` module.

    iv. Define a variable to use for the contact dictionary.

    v. Implement a menu within a loop with following choices:

        a. Add contact

        b. Modify contact

        c. Delete contact

        d. Print contact list

        e. Find contact

        f. Exit the program

    vi. Prompt the user for the menu choice.

    vii. Prompt the user for the information needed for the appropriate `contacts` function and call the function.

    viii. Print out appropriate errors with function return values of `error`.

4. Run and test the program until you are satisfied your program output meets the above requirements.

Typical input and output for the program:

```
        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 1

Enter phone number: 7145551212
Enter first name: Steve
Enter last name: Jobs
Added: Steve Jobs.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 4

==================== CONTACT LIST ====================
Last Name            First Name           Phone
==================== ==================== ==========
Jobs                 Steve                7145551212

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 1

Enter phone number: 7145551212
Enter first name: Bill
Enter last name: Gates
Phone number already exists.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
```

```
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 2

Enter phone number: 7145551212
Enter first name: Bill
Enter last name: Gates
Modified: Bill Gates.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 4

==================== CONTACT LIST ====================
Last Name              First Name          Phone
====================   ====================  ==========
Gates                  Bill                7145551212

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 2

Enter phone number: 5551212
Enter first name: Richard
Enter last name: Stallman
Phone number does not exist.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 3
```

Enter phone number: 5551212
Invalid phone number.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 3

Enter phone number: 7145551212
Deleted: Bill Gates.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 4

==================== CONTACT LIST ====================
Last Name   First Name   Phone
=================== ==================== ==========

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 1

Enter phone number: 7145551111
Enter first name: Alpha
Enter last name: Jobs
Added: Alpha Jobs.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact

```
6. Exit the program

Enter menu choice: 1

Enter phone number: 7145552222
Enter first name: Steve
Enter last name: Jobs
Added: Steve Jobs.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 1

Enter phone number: 5625553333
Enter first name: Bill
Enter last name: Gates
Added: Bill Gates.

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 4

==================== CONTACT LIST ====================
Last Name            First Name           Phone
==================== ==================== ==========
Gates                Bill                 5625553333
Jobs                 Alpha                7145551111
Jobs                 Steve                7145552222

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 5

Enter search string: jobs
```

```
================= FOUND CONTACT(S) =================
Last Name            First Name           Phone
====================  ====================  ==========
Jobs                 Alpha                7145551111
Jobs                 Steve                7145552222

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 5

Enter search string: 5625553333
================= FOUND CONTACT(S) =================
Last Name            First Name           Phone
====================  ====================  ==========
Gates                Bill                 5625553333

        *** EMPLOYEE CONTACT MAIN MENU

1. Add contact
2. Modify contact
3. Delete contact
4. Print contact list
5. Find contact
6. Exit the program

Enter menu choice: 6
```

Submission

When completed, upload the following two files to Canvas:

```
main.py
contacts.py
```