Laboratory Objectives

1. Write a Python program using:
    i. lists
    ii. loops
    iii. conditional statements
    iv. input/output
    v. modules
    vi. functions

Program Instructions

1. Write a Python program that performs as a 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 lists within this module should assume the list is of the form: [["first name","last name"],["first name","last name"],...]

    iv. Define a function named print_list to meet the following requirements:
        a. Take a contact list as a parameter.
        b. Implement a docstring with a simple sentence that describes the function.
        c. Print a header for the printout which indicates the list index number, the first name, and the last name column headers.
        d. Loop through the contact list and print each contact on a separate line displaying: the list index number, the contact first name, and the contact last name. Assuming i is the index value and contacts is the name of the list, the following will format the
        output: print(f'{str(i):8}{contacts[i][0]:22}{contacts[i][1]:22}')

    v. Define a function named add_contact to meet the following requirements:
        a. Take a contact list as a parameter.
        b. Implement a docstring with a simple sentence that describes the function.
        c. Prompt the user for the first name (note: look up and use the *input()* function to prompt and get input from the user).
        d. Prompt the user for the last name.
        e. Add the contact to the list.

f. Return the updated list.

vi. Define a function named modify_contact to meet the following requirements:
   a. Take a contact list as a parameter.
   b. Implement a docstring with a simple sentence that describes the function.
   c. Prompt the user for the list index number to modify.
   d. Prompt the user for the first name.
   e. Prompt the user for the last name.
   f. Modify the contact list at the index value.
   g. Return the updated list.

vii. Define a function named delete_contact to meet the following requirements:
   a. Take a contact list as a parameter.
   b. Implement a docstring with a simple sentence that describes the function.
   c. Prompt the user for the list index number to delete.
   d. Delete the contact at the index value.
   e. Return the updated list.

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. The first line of code in the main.py file should be:

   *from contacts import **

   iv. Define a variable to use for the contact list.
   v. Implement a menu within a loop with following choices:
      a. Print list
      b. Add contact
      c. Modify contact
      d. Delete contact
      e. Exit the program
   vi. Prompt the user for the menu choice and call the appropriate contacts function or exit the program.

4. Check all the values entered by the user. For example, if the *index* entered by the user during the delete_contact() execution is not within the range of the contact list, print out "invalid index number" and return the unedited list. Similarly, implement appropriate error-checks on all user's inputs

Typical input and output for the program:

```
*** EMPLOYEE CONTACT MAIN MENU
```

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

Enter menu choice: 2

Enter first name: Richard
Enter last name: Stallman

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 2

Enter first name: Bill
Enter last name: Gates

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 2

Enter first name: Steve
Enter last name: Jobs

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 1

================== CONTACT LIST ==================
Index   First Name            Last Name
======  ====================  ====================
0       Richard               Stallman
1       Bill                  Gates
2       Steve                 Jobs
```

```
      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 3

Enter the index number: 2
Enter first name: Tim
Enter last name: Cook

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 1

================== CONTACT LIST ==================
Index   First Name            Last Name
======  ====================  ====================
0       Richard               Stallman
1       Bill                  Gates
2       Tim                   Cook

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 3

Enter the index number: 5
Invalid index number.

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 4

Enter the index number: 1
```

```
      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 1

================== CONTACT LIST ==================
Index   First Name            Last Name
======  ==================  ====================
0       Richard               Stallman
1       Tim                   Cook

      *** EMPLOYEE CONTACT MAIN MENU

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

Enter menu choice: 4

Enter the index number: 5
Invalid index number.

      *** EMPLOYEE CONTACT MAIN MENU

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

   Enter menu choice: 5
```

Submission

Test your program to make sure all the menu selections work as intended (print, add contact, modify contact, delete contact, exit). Also make sure the user's inputs are validated. When completed, upload the two below files to Canvas:

- main.py
- contacts.py