

Question 10 – Dictionaries Application

Complete the application by pasting **all** the functions you have created for this lab into one source file, add the code necessary to present the menu, get the option and call the function associated with that option.

The functions that must be present in the file are:

- `display_as_list`
- `get_option`
- `get_name`
- `get_number_as_string`
- `add_edit_contact`
- `remove_contact`
- `show_contact`
- `display_contacts`
- `empty_contacts`

Depending on how you implement the menu code, you might have another function. The important aspect is that all the above are present and are being used.

The menu displays the following:

Telephone contact options.

- A) Add/edit a contact.
- R) Remove a contact.
- F) Find a contact.
- D) Display all contacts.
- E) Empty all contacts.
- Q) Quit.

Selecting A results in calling the `add_edit_contact` function.

Selecting R results in calling the `remove_contact` function.

Selecting F results in calling the `show_contact` function.

Selecting D results in calling the `display_contacts` function.
Selecting E results in calling the `empty_contacts` function.

Don't change any of the code inside the functions.

Hints.

- The solution is very similar to the code in the last question of the shopping lists lab. Use the code from that question as the basis for this one.
- Create a dictionary for the telephone contacts.
- The easy approach solution is about 29 lines of code which includes multiple `if/elif`'s. **** The easy approach is suggested.****
- If you fancy a challenge (no extra marks), try to have only one short conditional statement in the menu code. This will reduce the number of lines of code significantly. Please be aware that the solution is **not covered by this course**. This is only being suggested as some students like the challenge. The menu loop can be 4 lines of code. The easier solution with multiple `if/elif`'s is perfectly fine and is suggested.

If you are still not satisfied by the previous challenge and you want a bigger challenge then the menu loop can be implemented in 3 lines of code and without needing any conditional statements (`if/elif/else`). The shortest version of all the menu code you need to write for this question is 7 lines of code. This is just for handling the menu aspect and clearly does not include all the functions from the previous questions.

- Not all the test data used is shown.

For example:

Input	Result
aaaaaa add a ms one 101 a mr two 102 a miss tree 103 a miss tree No d a miss tree y 333 d remove r mrs tree F mrs tree f miss tree r miss tree d e Y d z	<p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: aaaaaa</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: add</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: a Contact: ms one Contact number: 101 Ms One has been added with the number: 101.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact.</p>

Input	Result
Q	<p> F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: a Contact: mr two Contact number: 102 Mr Two has been added with the number: 102. </p> <p> Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: a Contact: miss tree Contact number: 103 Miss Tree has been added with the number: 103. </p> <p> Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: a Contact: miss tree Miss Tree is already in the phone system. Would you like to change the phone number? y/n: No Miss Tree has not been updated. </p>

Input	Result
	<p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: d Ms One : 101 Mr Two : 102 Miss Tree : 103</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: a Contact: miss tree Miss Tree is already in the phone system. Would you like to change the phone number? y/n: y New number: 333 Miss Tree has been updated with the number: 333.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: d</p>

Input	Result
	<p>Ms One : 101 Mr Two : 102 Miss Tree : 333</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: remove</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: r Enter the contact to be removed (or press Enter to cancel): mrs tree Sorry, Mrs Tree is not a contact.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: F Contact: mrs tree Mrs Tree is unknown.</p>

Input	Result
	<p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: f Contact: miss tree Miss Tree: 333</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: r Enter the contact to be removed (or press Enter to cancel): miss tree Miss Tree has been removed from the contacts.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: d Ms One : 101 Mr Two : 102</p>

Input	Result
	<p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: e Please confirm that you want remove all the contacts. y/n: Y All the contacts have been removed.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: d Sorry, there are no contacts.</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact. D) Display all contacts. E) Empty all contacts. Q) Quit. Option: z</p> <p>Telephone contact options. A) Add/edit a contact. R) Remove a contact. F) Find a contact.</p>

Input	Result
	D) Display all contacts. E) Empty all contacts. Q) Quit. Option: Q Bye.

Data used for code answer:

```
# 'Telephone contact options.'  
# 'A) Add/edit a contact.'  
# 'R) Remove a contact.'  
# 'F) Find a contact.'  
# 'D) Display all contacts.'  
# 'E) Empty all contacts.'  
# 'Q) Quit.'  
  
# 'Bye.'
```