Assignment 1: Part 2

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Part 1 – all sections

This application will display a simple phone book which can record the contact details of a person, including their name, age and phone number. There will be 4 options (represented by the number keys 1-4) for the user to choose. Clicking on number 1 will lead the user to enter a person's contact details (name, age and phone number) into the application. Pressing number 2 will allow the user to search for a person's contact details stored in the application, which will include that person's name, age and phone number. Entering number 3 will give the option to delete a person's contact details that are stored in the application. Finally, clicking on number 4 will force the user to quit the application.

How the application will run:

*User will start at main menu in application

There will be 4 options to do:

Naturally, the first option the user will do will be option 1 (to "add contact"). User will enter a name, age and phone number.

This will be saved onto the application and user will then be taken back to main menu.

User has four options to do again and might want to add a few contacts before going on to the other options.

Once back to main menu, user may want to search for a contact that has already been inputted – they would enter 2 to go to option 2 ("search contact").

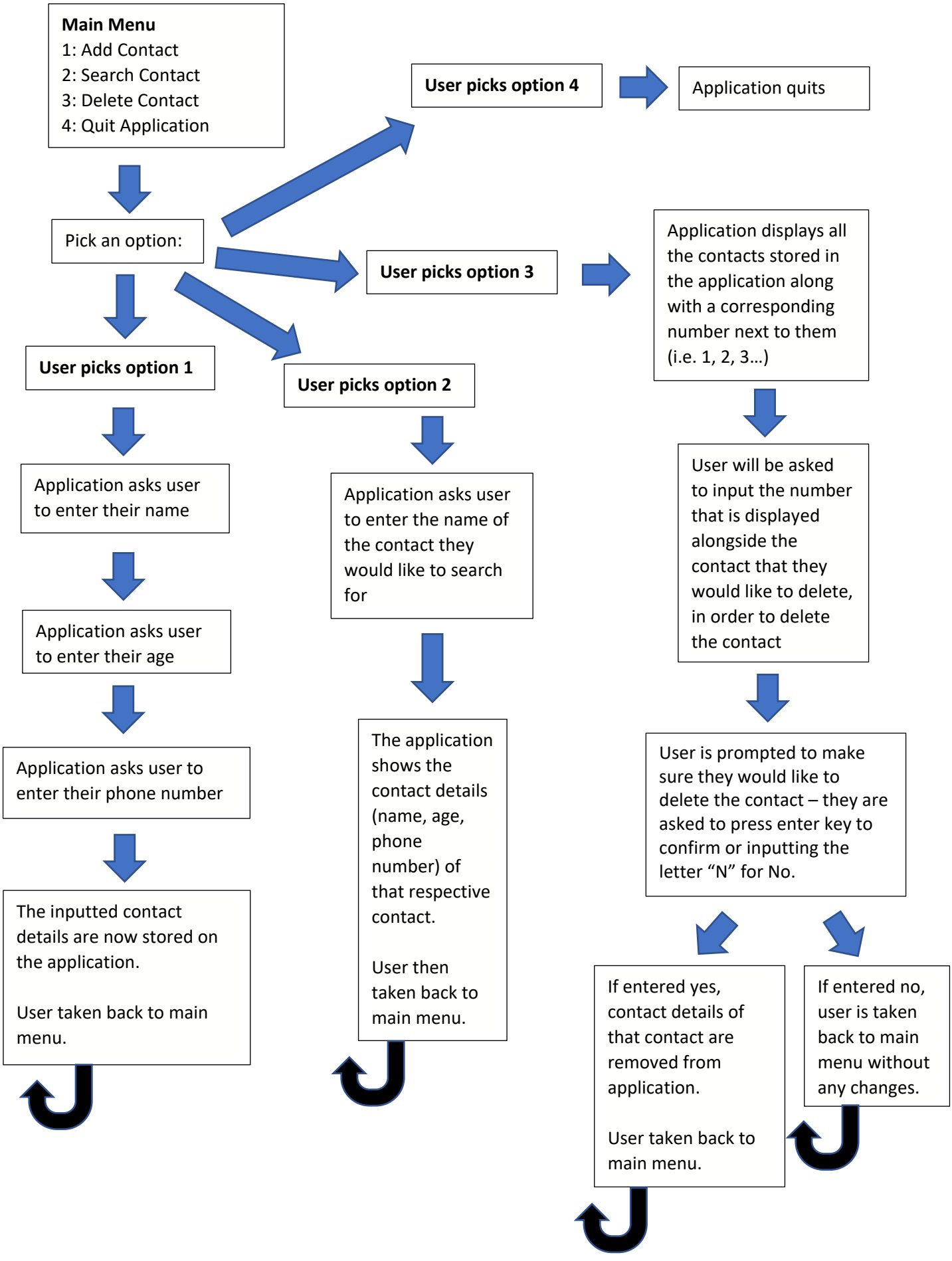
User will then be able to see the contact details of that person.

User will again be taken back to main menu.

Once at main menu, user may want to delete a number – they would enter 3 to go to option 3 ("delete contact") – user can enter a number of the contact they would like to delete, and press enter to delete it. There will be a prompt for user whether they are sure they want to delete it (press enter key for yes or N for no).

Finally, back at main menu, user may want to quit application so they can enter number 4 ("quit application").

The overall structure of the application is indicated by following flowchart:



How the application will be implemented:

The application will start by associating a variable (“Phone_book”) with the Boolean value set to True (Drake, 2001, Python 3.11.2). This opens the loop and enables the application to keep running until the Boolean value is set to False. The main menu will be declared using the while loop (Drake, 2001, Python 3.11.2: 8.2) to allow the user to access the menu multiple times; until they quit entirely. Choosing the four options will be declared using the if statements (Drake, 2001, Python 3.11.2: 8.1). This will be so that the user can choose any option they wish and do so in any order they wish. The “add contact” option (number 1) will be implemented using the built-in append method in Python. The “search contact” option (number 2) will be implemented using the built-in sort method (Drake, 2001, Python 3.11.2). This function will sort the list in ascending/alphabetical order automatically, whereby contacts stored in the application will be sorted by alphabetical order of the (first) names that were inputted (e.g. “Aaron Small” would come before “Henry Langdon”, who would come before “Sam Wise”). The “delete contact” option (number 3) will be implemented using the del statement, which will delete all the data associated with that specific contact (i.e. their name, age and phone number). Finally, the “quit application” option (number 4) will be implemented by setting the variable (“Phone_book”) to the Boolean value False, thus closing the loop that runs the application.

Part 2 – code including comments

```
# Creates an empty dictionary to store the entries in
phone_book = {}

# Repeats this loop until they exit
while True:
    # Print the menu options
    print("Menu options")
    print("    1 - Add Contact")
    print("    2 - Search Contact")
    print("    3 - Delete Contact")
    print("    4 - Quit Application")
    choice = input("Enter an option: ")

    # Add contact
    if choice == '1':
        name = str(input('Name: ')) # user inputs the name e.g. Michael Flower
        age = int(input('Age: ')) # user inputs the age e.g. 27
        phone_number = input('Telephone Number: ') # user inputs number e.g. 07324236457
        phone_book[name] = age, phone_number # user input is now stored on application

    # Search contact
    elif choice == '2':
        name = str(input('Name of contact: ')) # user inputs the name e.g. Michael Flower
        print("Their age and phone number is: ",phone_book[name]) # age and number is now
outputted e.g. Their age and phone number is: 27, 07324236457


    # Delete contact
    elif choice == '3':
        name = input('Name: ') # user inputs the name e.g. Michael Flower
        del phone_book[name] # contact details of e.g. Michael Flower, 27, 07324236457 is
removed


    # Quit application
    elif choice == '4':
        # exit the loop
        break


    else:
      print("click on a number 1-4 ")
```

References:

Ball, E. (2015) Python Phone Book. Available from: https://gist.github.com/ericball1/81203cd5c56cd3ea9ad4#file-phonebook-py [Accessed 14 March 2023].

Drake, F. L. (2001) Python Software Foundation: Python 3.11.2 Documentation. Available from: https://docs.python.org/3/reference/compound_stmts.html#the-while-statement [Accessed 14 March 2023].

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Drake, F. L. (2001) Python Software Foundation: Python 3.11.2 Documentation. Available from: https://docs.python.org/3/tutorial/controlflow.html [Accessed 1 April 2023].

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