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import sys

def initial_phonebook():
    rows, cols = int(input("Enter initial number of contacts: ")), 4

    phone_book = []
    print(phone_book)
    for i in range(rows):
        print(".....")
        temp = []
        for j in range(cols):

            if j == 0:
                temp.append(str(input("Enter name*: ")))

                if temp[j] == '' or temp[j] == ' ':
                    sys.exit(
                        "Name is a mandatory field. Process exiting due to blank field....")

            if j == 1:
                temp.append(int(input("Enter number*: ")))

            if j == 2:
                temp.append(str(input("Enter e-mail address: ")))
                if temp[j] == '' or temp[j] == ' ':
                    temp[j] = None

            if j == 3:
                temp.append(str(input("Enter date of birth(dd/mm/yy): ")))
                if temp[j] == '' or temp[j] == ' ':

                    temp[j] = None

        phone_book.append(temp)

    print(phone_book)
    return phone_book

def menu():
    print("*****")
    print("1. Add a new contact")
    print("2. Delete an existing contact")
    print("3. Delete all contacts")
    print("4. Search for a contact")
    print("5. Show all contacts")
    print("6. Exit ")

    choice = int(input("Please enter your choice: "))

    return choice

def add_contact(pb):
    dip = []

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for i in range(len(pb[0])):
    if i == 0:
        dip.append(str(input("Enter name: ")))
    if i == 1:
        dip.append(int(input("Enter number: ")))
    if i == 2:
        dip.append(str(input("Enter e-mail address: ")))
    if i == 3:
        dip.append(str(input("Enter date of birth(dd/mm/yy): ")))

pb.append(dip)
return pb

# This function is to remove a contact's details from existing phonebook
def remove_existing(pb):

    query = str(
        input("Please enter the name of the contact you wish to remove: "))

    temp = 0

    for i in range(len(pb)):
        if query == pb[i][0]:
            temp += 1

            print(pb.pop(i))

            print("This query has now been removed")
            return pb
    if temp == 0:
        print("Sorry, you have entered an invalid query.\
Please recheck and try again later.")

    return pb

# This function will delete all the entries in the phonebook
def delete_all(pb):
    return pb.clear()

# This function searches for an existing contact and displays the result
def search_existing(pb):
    choice = int(input("Enter search criteria\n\n\
1. Name\n2. Number\n3. Email-id\n4. DOB\n5. Category(Family/Friends/Work/Others)\
\nPlease enter: "))

    temp = []
    check = -1

    if choice == 1:
        query = str(
            input("Please enter the name of the contact you wish to search: "))
        for i in range(len(pb)):
            if query == pb[i][0]:
                check = i
                temp.append(pb[i])

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elif choice == 2:
    query = int(
        input("Please enter the number of the contact you wish to search: "))
    for i in range(len(pb)):
        if query == pb[i][1]:
            check = i
            temp.append(pb[i])

elif choice == 3:
    query = str(input("Please enter the e-mail ID\
of the contact you wish to search: "))
    for i in range(len(pb)):
        if query == pb[i][2]:
            check = i
            temp.append(pb[i])

elif choice == 4:
    query = str(input("Please enter the DOB (in dd/mm/yyyy format ONLY)\
of the contact you wish to search: "))
    for i in range(len(pb)):
        if query == pb[i][3]:
            check = i
            temp.append(pb[i])

elif choice == 5:
    query = str(
        input("Please enter the category of the contact you wish to search: "))
    for i in range(len(pb)):
        if query == pb[i][4]:
            check = i
            temp.append(pb[i])

else:
    print("Invalid search criteria")
    return -1

if check == -1:
    return -1
else:
    display_all(temp)
    return check

# this function displays all content of phonebook
def display_all(pb):
    if not pb:
        print("List is empty: [])")
    else:
        for i in range(len(pb)):
            print(pb[i])

# Main function
print(".....PHONE DIRECTORY.....")

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ch = 1
pb = initial_phonebook()
while ch in (1, 2, 3, 4, 5):
    ch = menu()
    if ch == 1:
        pb = add_contact(pb)
    elif ch == 2:
        pb = remove_existing(pb)
    elif ch == 3:
        pb = delete_all(pb)
    elif ch == 4:
        d = search_existing(pb)
        if d == -1:
            print("The contact does not exist. Please try again")
    elif ch == 5:
        display_all(pb)

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Please enter your choice: 1
Enter name: Rahul Kumar
Enter number: 8693756390
Enter e-mail address: Rah@gmail.com
Enter date of birth(dd/mm/yy): 13/08/02
*****
1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact
5. Show all contacts
6. Exit
Please enter your choice: 5
['Mark', 3748593846, 'mark@gmail.com', '23/04/99']
['Karla', 8693756390, 'Rah@gmail.com', '13/08/02']
*****
1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact
5. Show all contacts
6. Exit
Please enter your choice: 2
Please enter the name of the contact you wish to remove: Mark
['Mark', 3748593846, 'mark@gmail.com', '23/04/99']
This query has now been removed
*****
1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact
5. Show all contacts
6. Exit
Please enter your choice: 5
['Karla', 8693756390, 'Rah@gmail.com', '13/08/02']
*****
1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact

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5. Show all contacts
6. Exit

Please enter your choice: 3

1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact
5. Show all contacts
6. Exit

Please enter

your choice:

5List is

empty: []

1. Add a new contact
2. Delete an existing contact
3. Delete all contacts
4. Search for a contact
5. Show all contacts