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import json
import os

class Contact:
        def _init_(self, name, phone, email):
        self.name = name
        self.phone = phone
        self.email = email
 def to_dict(self):
          return {
                        "name": self.name,
                        "phone": self.phone,
                         "email": self.email
                        }

        class Phonebook:
        def _init_(self, filename='contacts.json'):
                        self.filename = filename
                        self.contacts = self.load_contacts()
  def load_contacts(self):
        if os.path.exists(self.filename):
                with open(self.filename, 'r') as file:
                                        return json.load(file)
                return []
def save_contacts(self):
        with open(self.filename, 'w') as file:
                                json.dump(self.contacts, file, indent=4)

def add_contact(self, contact):
        self.contacts.append(contact.to_dict())
        self.save_contacts()
def search_contact(self, search_term):
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            results = [contact for contact in self.contacts if search_term.lower() in
                                        contact['name'].lower()]
            return results

    def delete_contact(self, name):
        self.contacts = [contact for contact in self.contacts if contact['name'].lower() !=
                                        name.lower()]
        self.save_contacts()

    def main():
        phonebook = Phonebook()
        while True:
                        print("\nPhonebook Application")
                        print("1. Add Contact")
                        print("2. Search Contact")
                        print("3. Delete Contact")
                        print("4. List Contacts")
                        print("5. Exit")

                        choice = input("Choose an option: ")
                        if choice == '1':
                            name = input("Enter name: ")
                            phone = input("Enter phone number: ")
                            email = input("Enter email address: ")
                            contact = Contact(name, phone, email)
                            phonebook.add_contact(contact)
                            print(f"Contact {name} added successfully.")
                        elif choice == '2':
                            search_term = input("Enter name to search: ")
                            results = phonebook.search_contact(search_term)
                                if results:
                                    for contact in results:
                                        print(f"Name:
        {contact['name']}, Phone: {contact['phone']}, Email: {contact['email']}")
                                else:
                                    print("No contacts found.")
                        elif choice == '3':
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                name = input("Enter name to delete: ")
                phonebook.delete_contact(name)
                print(f"Contact {name} deleted successfully.")

            elif choice == '4':
                for contact in phonebook.contacts:
                    print(f"Name: {contact['name']},
Phone: {contact['phone']}, Email: {contact['email']}")
            elif choice == '5':
                print("Exiting Phonebook Application.")
                break
            else:
                print("Invalid choice. Please try again.")

if _name_ == "_main_":
    main()
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