

Objective: Create a Python program that manages an address book, allowing users to add, view, edit, and delete contacts, with data persistence using a JSON file.

Features to implement: 1. Add new contacts 2. View all contacts 3. Search for a contact 4. Edit existing contacts 5. Delete contacts 6. Save contacts to a JSON file 7. Load contacts from a JSON file

Suggested Implementation Steps: 1. Create a Contact class with attributes like name, phone number, email, and address. 2. Implement a main menu that displays options to the user. 3. Use a list to store Contact objects in memory. 4. Implement functions for each feature (add, view, search, edit, delete). 5. Use the json module to save and load contacts to/from a JSON file. 6. Implement error handling for invalid inputs and file operations.

Example Usage:

Welcome to your Address Book!

1. Add a contact
2. View all contacts
3. Search for a contact
4. Edit a contact
5. Delete a contact
6. Save contacts to file
7. Load contacts from file
8. Exit

Enter your choice: 1

Enter name: John Doe

Enter phone number: 123-456-7890

Enter email: john@example.com

Enter address: 123 Main St, Anytown, USA

Contact added successfully!

Enter your choice: 2

Your contacts:

1. John Doe (123-456-7890)

Enter your choice: 6

Contacts saved to 'contacts.json' successfully!

Enter your choice: 8

Thank you for using the Address Book!

JSON File Structure:

```
[  
  {
```

```
    "name": "John Doe",
    "phone": "123-456-7890",
    "email": "john@example.com",
    "address": "123 Main St, Anytown, USA"
  },
  {
    "name": "Jane Smith",
    "phone": "987-654-3210",
    "email": "jane@example.com",
    "address": "456 Elm St, Othertown, USA"
  }
]
```

Learning Outcomes: - Practice creating and using classes in Python - Gain experience with user input and output in the command line - Learn about JSON serialization and deserialization in Python - Implement file I/O operations with JSON - Use dictionaries to structure data - Implement basic error handling and input validation - Practice working with lists of objects