**Phone Book Manager**

**Git link:**

**https://github.com/yhRan625/Assignment1/tree/main**

Phone Book Manager is a command-line application designed for managing contact information. It is developed in Python, leveraging the power of lists and dictionaries as its primary data structures, which allows for efficient data manipulation and retrieval.

The application's functionality is divided into two main classes: Contact and PhoneBook.

contact.py: In this module, each contact is encapsulated as a Contact object, which includes attributes such as first\_name, last\_name, phone\_number, email, and address. The Contact class also incorporates methods to validate the format of phone numbers and email addresses, ensuring data integrity and consistency.

phonebook.py: This module houses the PhoneBook class, which is essentially a wrapper around a list of Contact objects. It provides methods for adding, viewing, searching, updating, and deleting contacts. Additionally, it has the capability to import contacts from a CSV file, making it easy to bulk add contacts. The class also maintains a log of all operations performed, providing a history of changes.

main.py: This is the entry point of the PhoneBook Manager application. It provides a user-friendly interface with seven options for users to interact with the application:

1. Add Contact: Users can add a new contact by entering the contact's name, phone number, email address, and residential address. The email address and residential address are optional fields.
2. View Contacts: This option allows users to view all contacts, which are conveniently grouped according to the first letter of the last name.
3. Search Contacts: Users can search for contacts using the name or phone number, providing flexibility in retrieving contact information.
4. Update Contact: This feature allows users to modify the information of an existing contact, ensuring the contact details are always up-to-date.
5. Delete Contact: Users can remove an existing contact either individually or in batch mode, providing efficient management of contacts.
6. Import Contacts from CSV: This feature allows users to import multiple contacts from a CSV file, saving time and effort in adding contacts manually.
7. Search Contacts by Date：This feature allows users to search for contacts based on the date they were added to the phonebook. Users are prompted to enter a start date and an end date, and the application will return all contacts added within this date range.

8. Exit: Users can choose this option to safely exit the application.

contacts.csv: This file serves as a test case for the application, containing sample contact information for testing the functionality of the PhoneBook Manager.

The design of the PhoneBook Manager application is modular and object-oriented, which promotes code reusability and maintainability. Each class has a single responsibility, making the code easier to understand and test.