Application Design Overview:

This solution provides a simple CLI-based contact book with features like adding, viewing, deleting, searching, and saving contacts. All actions are performed via a menu system, and contacts are stored persistently in a text file (contacts.txt). The code is modular, reusable, and maintains clear separation between different concerns such as contact management and file operations.

Main Features:

Add Contact: Add new contacts with the fields Name, Email, Phone Number, and Address.

View Contacts: Display all saved contacts in a neat, user-friendly format.

Remove Contact: Delete a contact based on the phone number.

Search Contacts: Search for contacts by their details (Name, Email, etc.).

Save to File: Save contacts to a file (contacts.txt) automatically after every addition.

Load from File: Load contacts from the file when the application starts.

Bonus Features:

Error Handling: Validate inputs like names (string), phone numbers (numeric), and ensure that duplicate phone numbers are not added.

File Structure:

We will organize the project into multiple Python files:

contact\_book.py: Main application logic and menu handling.

contact\_manager.py: Handles core functionalities like adding, viewing, and removing contacts.

file\_manager.py: Manages reading and writing contacts to/from files.

utils.py: Utility functions for validation, formatting, etc.

Starting the program: Run contact\_book.py in the terminal.

Adding contacts: You can add contacts with valid details and phone numbers.

Viewing contacts: The View Contacts option shows all the contacts stored.

Removing contacts: Removes a contact based on phone number.

Searching contacts: Allows searching by any field (name, email, or phone).

Data persistence: Contacts are saved to contacts.txt and will be loaded automatically when the program starts.