



1. Introduction

A Phonebook Directory (also called a telephone book and phone book) is a listing of telephone users in a geographical area or users to services provided by the organization that publishes the directory. It consists of the name as well as the telephone number of people added as contact in the directory. Name and telephone number are displayed in alphabetical order.

User names are generally listed in alphabetical order, together with their Name, Surname and telephone number. In principle every user in the geographical coverage area is listed, but users may request the exclusion of their number from the directory, often for a fee.

Phonebook Directory is very simple mini project in C that can help you understand the basic concepts of Functions, File-Handling and Data Structure. Phonebook Directory is used to maintain the phone numbers of many users in a system. The purpose of the system, which has been developed, is to allow an end user to interact with the Phonebook Directory system. Adding New records, listing them, modifying them and Updating, Search for Contact saved and Deleting directory records are the basic functions which makes up main menu of this application.



1.1.1 Problem Statement

This project is to create a Phonebook Directory using File Handling to enable the user to store contacts details of Student and Faculty in well settled manner. To develop an efficient and easy to storage contact details to reduce overhead of paperwork. The project should be very easy to use enabling even a novice person to use it. Phonebook Directory ranges from simple, text-based database and user friendly interface.

1.1.2 Problem Description

This system is developed using general need required by the users while using the Phonebook Directory. In order to keep Phonebook Directory Up-to-date, admin will have authority to modify the existing records with in the Phonebook directory this will reduce the time required to modify as compared to the Hard Phonebook. To make all operations as easy as possible user-friendly approach has been taken in the account by which users have to only give their answers during final confirmation to make the operation successfully.



1.2 Purpose

- The main objective of this document is to illustrate the requirement of the project “Phonebook Software”.
- As we all know students, teaching and non-teaching staff have been relying on the phone book for many years to get basic information such as phone number, address, etc. of the people they need to contact.
- However, this method is not so efficient since users may not get desired results quickly as the users have to search manually.
- This project aims for or a better design where people can easily retrieve information without wasting there much time
- This document gives detailed description of all functional requirements proposed by client.

1.3 Scope

- This system is developed using the general need required by the user while using the Phonebook Directory book and provided a lot of facility to their user.
- Users save the phone numbers along with their names.
- Modify the names and phone numbers.
- Deleting the contact numbers.
- Searching a particular contact from the directory.
- Viewing all contact numbers one after another.

1.4 System Analysis

- The proposed project phone book is a digital analogue alternative to the address book for phone directory. Unlike many other programs, flexible customization of phone books allows storage of not only Phone numbers, addresses but also other types of contact data such as email addresses, etc.
- Another program feature is that it can group contacts by category. A contact can be viewed both alphabetically and by category for example students or faculty.
- Contact with frequently used phone number can be added to your favorites.
- The powerful and flexible search function allows you to search data by any criteria.
- All the contacts can be backup by exporting them to txt or csv files.



1.4.1 Existing system

Previously user have to save contact details in hard phonebook which has risk of getting lost. Also, in case there are number of contacts it becomes difficult for the user to search a particular contact and is time consuming and ineffective. Also, if user wants to save number in their mobile contacts, there is no any priority for storing contacts separately i.e., students contact and faculty contact. If by mistake, data gets deleted no any function to retrieve that contact which causes unwanted difficulty.

1.4.2 Limitations of present system

- It is time Consuming process.
- There is a chance to loss of data.
- Performance of the system is low.
- Modification is not possible.
- Searching for number is most difficult.
- Deleting contact is also not possible.



1.5 Proposed System

In order to eliminate the drawbacks of the existing system, a system has been developed due to which the person need not spend much time in identify a phone number and instead database is built that takes care of every transaction thereby reducing the burden on customer.

By using this proposed system, we can reduce the problems of existing system. In this proposed system we can modify the customer's name and his/her contact number details, searching, viewing and deleting contacts is also possible. Searching for contact number takes less time.

Under this "Phonebook Directory" Project, all the functionality has been added to meet user requirements in fewer time. Linear search method has been used to produce results on minimal time. As users do not have to purchase new volumes, each year and even they do not have to wait for the New Year to get updated records. As the new customer does the user side, so users will able to get updated information each time will update details. To eliminate data redundancy and perform validation process background codes will responsible be to do this task. If user will make any mistake while entering, they will be given a warning along with correction, which is required to be made. It will also guide the customers to use this system in convenient manner through its colorful screen. The names are present in user-sated formats like in alphabetical order, according to name, surname, or depending upon its entry in book etc. so that user also can easily find the required person along with their name and telephone numbers and use search option.



1.6 Advantages of Proposed Work

- Students and Faculties save the phone numbers along with their names.
- Modify the names and phone numbers.
- Deleting the contact numbers.
- Searching a particular contact from the directory.
- Viewing all contact numbers one after another.
- Retrieving if any details gets deleted.



2 Product Functions

- Creating several contact books

Program allows creation of numerous databases that can be quickly displayed via the menu.

- Unlimited categories and Groups

The number of categories and groups is unlimited while A category then subgroups are also possible.

- Favorites

The most frequently used contacts can be added to your favorites.

- Alphabetical Index

The standard alphabetical index allows the filtering of contacts by each letter. Digits and non-alphabet are also supported.

- Database in .txt and .csv Format

The data can be stored in txt or csv format and can be retrieved in the same format.

- Search

The search tool allows you to search by all database fields in one go for separately by each field.

- Adding all Types of Data

When adding contacts any data type can be created and saved.

- Easy Retrieval

Once data gets deleted, if necessary, it can be easily retrieved.



3. Specific Requirements

3.1 Functional Requirement

A functional requirement is a requirement that defines specific functions or behavior. The functional requirements are listed below.

The Software must have following requirements:

- It must have graphical user interface.
- It must be built with push updates.
- It must have proper search tool.
- It must support .txt or.csv format.
- It must support admin authentication.
- It must have proper sorting of names in alphabetical order.

3.2 Non-Functional Requirements

A non-functional requirement specifies the criteria that can be used to judge how the application operates to its specific behavior. That is, it must have scalability i.e., the application can be expanded to support large number of users without reducing its performance.

○ **Performance Requirement**

- Depends on how the system is designed, the users who use the products may not have knowledge about how the software is designed, hence we need a user friendly and very efficient system.
- The constraints such as accessibility, safety and security should be resolved such that they do not affect the performance of the system.
- So, using good front end programming languages will help in increasing the efficiency of the system, leading to efficient performance.

○ **Safety Requirements**

- When privacy issues are considered, that is if some bad element of the society gets to know the personal information of any person, the application can be used for an ethical purpose. So very strong safety levels of accessing must be used.

○ **Security Requirement**

- The designed application when used, is open to all possible threats, such as misuse of the application, or tried to modify.
- In these cases, a good user interface to access data should be used, such as the user must provide data to access information from the database.



- Any user wants to access his profile has to give his ID number so that fraudsters can be prevented from getting access to the data.

- **Software Quality Attributes**

Additional quality characteristics for the product that will be important to either the customer or the developer, such as reliability, maintainability.

- **Reliability**

- Users use the application to view information.
- It is important that the information that is viewed is valid.
- Under some circumstances if a phone number of a person changes, and that change is not made in the database it may eventually lead to database inconsistency.
- Hence the application has to be more reliable, which can be achieved using data logs.

- **Maintainability**

- It is possible that there may be a time for improving or upgrading the application, at that instance the code must be very flexible i.e., changing the code shouldn't result in degrading the application.

4. Designs

4.1 Flow Chart

Whenever user starts Phonebook Directory, He/She will be directed to the Landing page. If user selects admin, then username and password must be validated. Once Validated he will be redirected to choices page. It contains Adding, Displaying, Searching, Updating, Deleting and Retrieving of Details.

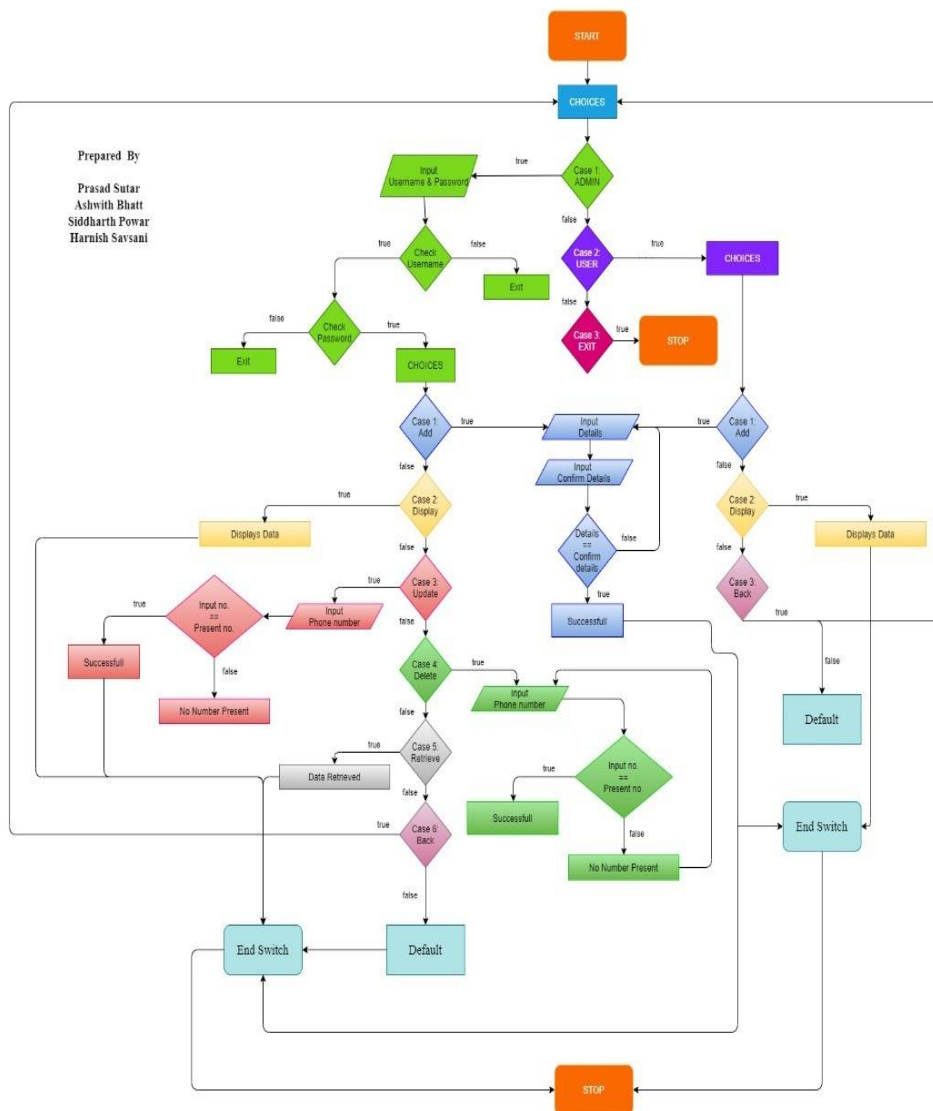


Fig. 4.1: Flow Chart

4.2 Data Flow Diagram

Data Flow Diagram is Divide in two major parts. First part consist of Admin, Login and Validating part and second part is vital which consist of different modules like Adding, Displaying, Searching, Updating, Deleting and Retrieving of Details. System consist of two database .txt and csv. Two databases are used to ensure easy export of contacts. txt is used to make direct changes and csv and txt are connected to make internal changes.

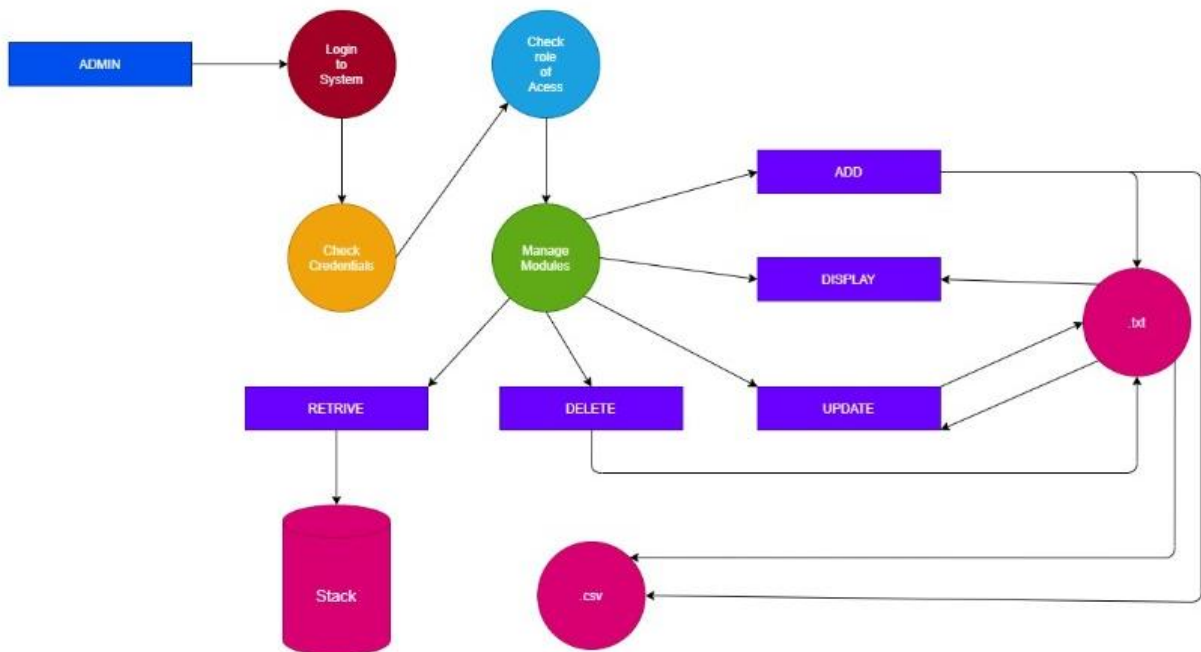


Fig. 4.2: Data Flow Diagram

4.3 Sequence Diagram

Once choice of admin is selected, he has to go through the validation. Once Validated he can Adding, Displaying, Searching, Updating, Deleting and Retrieving of Phone-number. And this process is Continues till the user wants to exit.

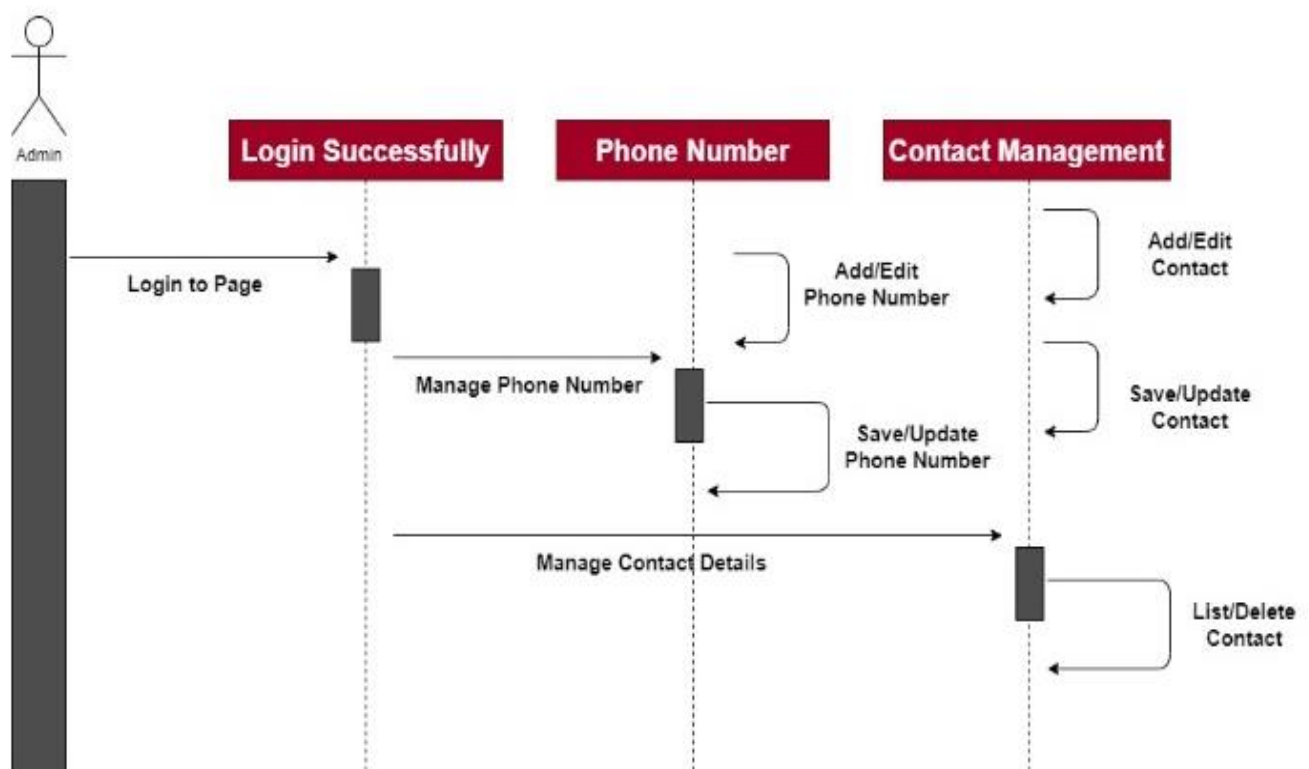


Fig. 4.3: Sequence Diagram

5 Final GUI

5.1 Landing Page

```
*****
                                     -:- Telephone Directory -:-
*****

#####

How do you want to access the Directory ?

1) Admin
2) User
3) Exit

Enter your Choice :
```

5.1.1 Validation

```
*****
                                     -:- Telephone Directory -:-
*****

#####

Enter User-name : admin
Enter Password  : **
```



5.2 Choice Interface (Add New Phone Number)

```
          :Choices:
          1) Add New Phone-Number
          2) Display Directory
          3) Search Details
          4) Update Phone-Number
          5) Delete any Contact
          6) Retrieve Deleted Detail
          7) Exit
          8) Logout

          Enter your Choice : 1
```

5.2.1 Adding Details & Confirming Details

```
Enter First-Name :  anand
Enter Last-Name  :  kumar
Enter Phone Number : 8844226688
```

```
To Confirm Please Enter Details again

#####

Enter First-Name :  anand
Enter Last-Name  :  kumar
Enter Phone Number : 8844226688
```

5.2.2 Selection Page

```
--: Telephone Directory -:
*****

#####

Where To Add ?

1) Add to Student Details
2) Add to Faculty Details

Enter your Choice : █
```




5.3 Choice Interface (Displaying Directory)

```
          :Choices:

      1) Add New Phone-Number
      2) Display Directory
      3) Search Details
      4) Update Phone-Number
      5) Delete any Contact
      6) Retrieve Deleted Detail
      7) Exit
      8) Logout

Enter your Choice : 2
```

5.3.1 Selection Page

```
          -:- Telephone Directory -:-

*****:

#####

          :Choices:

      1) Student Contact
      2) Faculty Contact

Enter your Choice : 1
```



5.3.2 Adding Details & Confirming Details

```
                                : Directory :

#####

FIRSTNAME                      LASTNAME                      Phone-Number

ADITYA                        TEKE                        9557558000
AKASH                        PUJARI                      9420008754
ANAND                        KUMAR                      8844226688
ANIKET                      PAWAR                      9145489546
ANISH                        POWAR                      8698421567
ARPITA                      PATIL                      7545869842
ASHWITH                      BHATT                      9284262299
ATHARVA                      HOGADE                    7744806256
GULSHAN                      KUMAR                      9632587410
HARNISH                      SAVSANI                    9403917139
JENIL                        BHUT                       9898767676
MIT                          BHUT                       7676767676
PRAJWAL                      PATIL                      7972416308
PRASAD                      SUTAR                      7249030063
RANJIT                      YADAV                      7412589630
ROHIT                        DONGARE                    8459343065
ROHIT                        GAVE                       8698487165
SAM                          CURRAN                     9422418812
SAMER                      PATIL                      1122334455
SANJAY                      CHAVAN                     8787878787
SARTHAK                     KHADE                      7057417070
SEJAL                      YADAV                      9545277002
SHIVRAJ                     PATIL                      9595943484
SUDIP                      LOKARE                     8956434475
SURAJ                      PATIL                      9145171188
TEJAS                      SHINDE                     9284571767
VALLABH                     PODAR                      9876987605
YASHRAJ                     CHAVAN                     9876598765

#####

Press any key to continue . . .
```



5.4 Choice Interface (Searching Details)

```
          :Choices:

      1) Add New Phone-Number
      2) Display Directory
      3) Search Details
      4) Update Phone-Number
      5) Delete any Contact
      6) Retrieve Deleted Detail
      7) Exit
      8) Logout

Enter your Choice : 3
```

5.4.2 Selection Page

```
          -:- Telephone Directory -:-

*****

#####

          Where to search?

      1) Student Details
      2) Faculty Details

Enter Choice : 1
```

5.4.3 Search Panel

```
          : Welcome To Search Panel :

#####

Enter Name to Search : anand

Name          : ANAND      KUMAR
Phone-Number   : 8844226688

#####
```



5.5 Choice Interface (Update Phone-Number)

```
          :Choices:

1) Add New Phone-Number
2) Display Directory
3) Search Details
4) Update Phone-Number
5) Delete any Contact
6) Retrieve Deleted Detail
7) Exit
8) Logout

Enter your Choice : 4
```

5.5.1 Selection Page

```
*****

--:-- Telephone Directory --:--

*****

#####

          Where to update?

1) Student Detail
2) Faculty Detail

Enter Choices : 1
```



5.5.2 Enter Update Details

```
Enter Phone-Number to Update : 8844226688
```

5.5.3 Update Panel

```
What do you want to Update ?
```

- 1) First-Name
- 2) Last-Name
- 3) Phone-Number
- 4) Both First-Name and Last-Name
- 5) Update all

```
Enter your choice : 5
```

5.5.4 Selection Page

```
Enter New First-Name   : kumar  
Enter New Last-Name    : vishwas  
Enter New Phone-Number : 9988556699
```

5.5.5 Successful Updating

```
!!Data Successfully Updated !!
```

```
#####
```

```
Updated Data :
```

```
Name : KUMAR      VISHWAS  
Phone-Number : 9988556699
```

```
#####
```



5.6 Choice Interface (Deleting Contact)

```
          :Choices:

1) Add New Phone-Number
2) Display Directory
3) Search Details
4) Update Phone-Number
5) Delete any Contact
6) Retrieve Deleted Detail
7) Exit
8) Logout

Enter your Choice : 5
```

5.6.1 Selection Page

```
          :Choices:

1) Delete Student Details
2) Delete Faculty Details

Enter Choice : 1
```

5.6.2 Deletion Panel

```
Enter the Mobile Number to Delete : 9988556699
```

5.6.3 Selection Page

```
#####

: Deleted Contact :

Phone-Number : 9988556699

#####
```


5.7 Choice Interface (Retrieving Delete Contact)

```
          :Choices:

      1) Add New Phone-Number
      2) Display Directory
      3) Search Details
      4) Update Phone-Number
      5) Delete any Contact
      6) Retrieve Deleted Detail
      7) Exit
      8) Logout

Enter your Choice : 6
```

5.7.1 Successfully Retrieving

```
#####
Contact Successfully Retrieved To Student Database
#####
```

5.7.2 Display Retrieved Contact

ASHWITH	BHATT	9284262299
ATHARVA	HOGADE	7744806256
GULSHAN	KUMAR	9632587410
HARNISH	SAVSANI	9403917139
JENIL	BHUT	9898767676
KUMAR	VISHWAS	9988556699
MIT	BHUT	7676767676
PRAJWAL	PATIL	7972416308
PRASAD	SUTAR	7249030063
RANJIT	YADAV	7412589630
ROHIT	DONGARE	8459343065



6 Environmental Setup

6.1 Software

Name of Component	Specification
Operating System	Any OS
Language	C / CPP
Compiler	GCC

6.2 Hardware

Name of Component	Specification
Processor	Intel i3 or more
RAM	64MB or more
Hard Disk	20GB



7 References

- https://en.wikipedia.org/wiki/telephone_directory/
- <https://w3schools.com/cpp/>
- <https://www.programs.com/>
- <https://isocpp.org/>