Submitted To:
Qazi Haseeb Yousaf

BAHRIA UNIVERSITY
COMPUTER SCIENCE

CONTACT BOOK
DSA PROJECT

TEAM MEMBERS:

- Jamshed Bashir (01-134212-072)
- Abu Bakr Siddique (01-134212-011)

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INTRODUCTION:

The purpose of this project is to create a contact book application in C++ that allows users to store and manage their contact information. The application will provide a variety of features, including the ability to add, delete, and edit contacts, as well as search and sort the contact list.

MOTIVATION

There are many different applications and websites that allow users to store and manage their contact information, but they often require an internet connection or subscription fees. This project aims to provide a free, offline alternative that can be used on any computer with a C++ compiler.

In addition, many existing contact management tools lack certain features or customization options. By creating our own application, we have the opportunity to include any features or customization options that we feel would be useful or desirable.

The motivation for this project is to create a simple and efficient way to store and manage contacts. Many people have a large number of contacts and finding a specific contact or managing them can be a tedious task. A contact book allows users to easily store and access their contacts, and provides various features such as sorting and searching to make managing contacts easier.

REQUIREMENTS:

To develop the contact book, the following requirements will be necessary:

- A C++ compiler to compile and run the code.
- A text editor or integrated development environment (IDE) to write the code.
- Knowledge of linked lists and sorting algorithms in C++.
- Basic understanding of software development principles such as testing and debugging.
- A clear and concise project plan that outlines the objectives, scope, and deliverables of the project.
- Quality assurance processes to ensure that the final product meets the required standards and specifications.

METHODOLOGY:

The following steps will be followed to develop the contact book:

- Design the data structure for storing the contacts. This will likely involve the use of a linked list to store the contact information.
- Implement a security login feature.
- Implement the functions for adding, deleting, and searching for contacts.
- Implement sorting algorithms such as bubble sort or merge sort to allow the user to sort their contacts.
- Test the functions and algorithms to ensure that they are working correctly.
- Add any additional features or functionality as desired.

ADDITIONAL:

There will a function containing multiple quotes and word from famous people that can leave impact on person. While showing contact, beneath it there will be those words shown so user can benefit from them. Each time different quotes will be shown. We plan on adding 40 quotes at least that will be repeated randomly.

DRAWBACKS / LIMITATIONS

One potential drawback of this project is the time and effort required to develop and test the application. C++ can be a complex programming language, and creating a fully-featured contact book application will likely require a significant investment of time and resources.

In addition, the application will only be accessible to users who have a C++ compiler and the necessary programming skills to run the code. This may limit the potential user base compared to other contact management tools that are available as standalone applications or web-based services.

There are a few more potential drawbacks to this project:

LIMITED FUNCTIONALITY

This contact book will only have basic features such as adding, deleting, and searching for contacts. More advanced features such as messaging or email integration may not be included.

LARGE DATA SETS:

If the user has a very large number of contacts, the performance of the contact book may suffer. Careful optimization will be needed to ensure that the contact book remains responsive even with large data sets.

TESTING

To ensure the reliability and usability of the application, we will perform thorough testing at various stages of development. This will include unit testing of individual functions and modules, as well as integration testing to ensure that the different components of the application work together correctly.

We will also conduct user testing to gather feedback from real users and identify any issues or areas for improvement. This will involve recruiting a diverse group of testers with a range of technical abilities and having them use the application in a variety of scenarios.

Testing is an essential part of the development process for any software application. It helps to ensure that the application is reliable, functional, and easy to use. In this section, we will outline our testing strategy for the [project name] project.

Our testing approach for the contact book will involve both automated and manual testing methods.

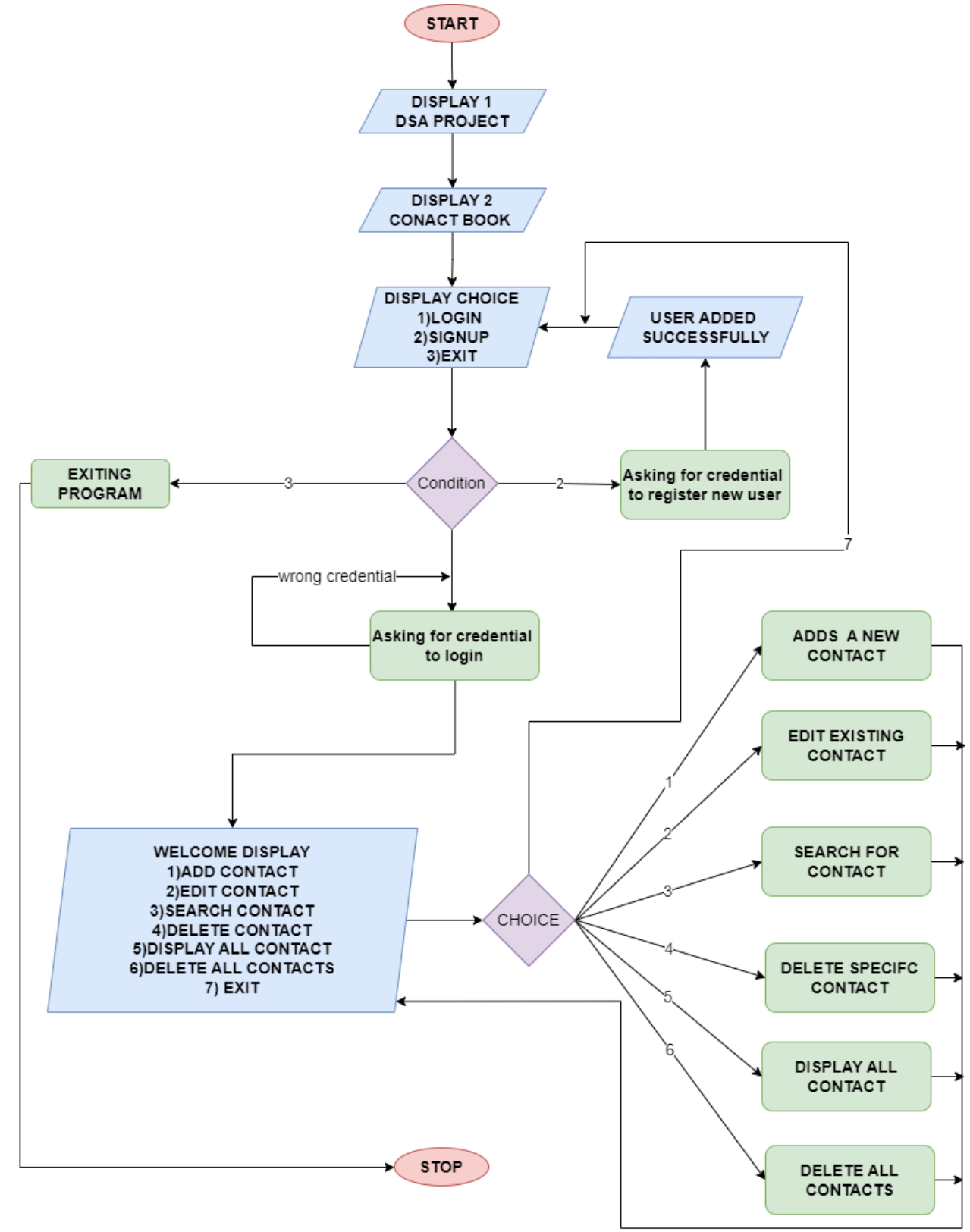
Automated testing will be used to quickly and efficiently test the application's core functionality and identify any errors or defects. This will include unit tests that focus on specific functions or modules, as well as integration tests that ensure that the different components of the application work together correctly.

Manual testing will be used to validate the overall user experience and ensure that the application is easy to use and understand. This will involve recruiting a diverse group of testers with a range of technical abilities and having them use the application in a variety of scenarios.

The goals of our testing strategy are to:

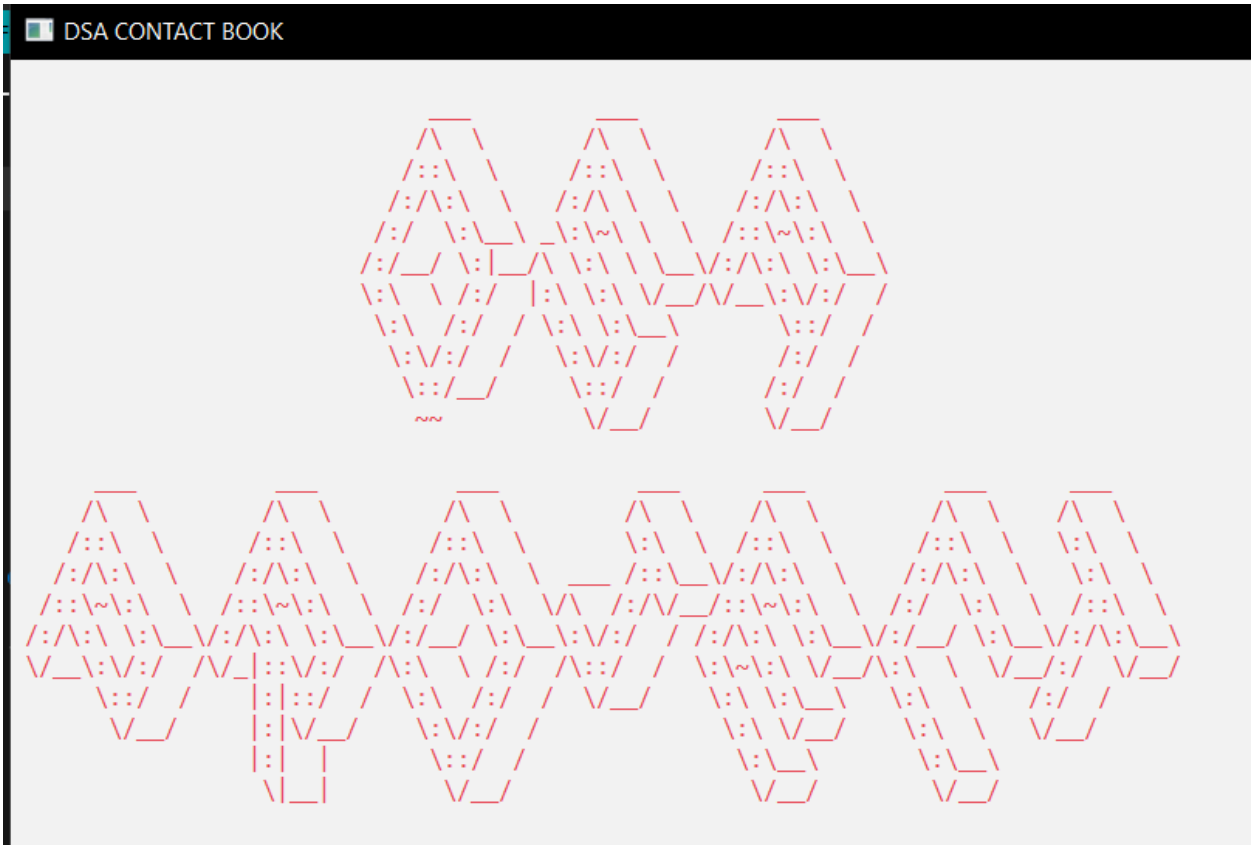
- Identify and fix any errors or defects in the application's code
- Ensure that the application is reliable and performs as expected
- Verify that the application is easy to use and understand
- Gather feedback from real users to identify areas for improvement

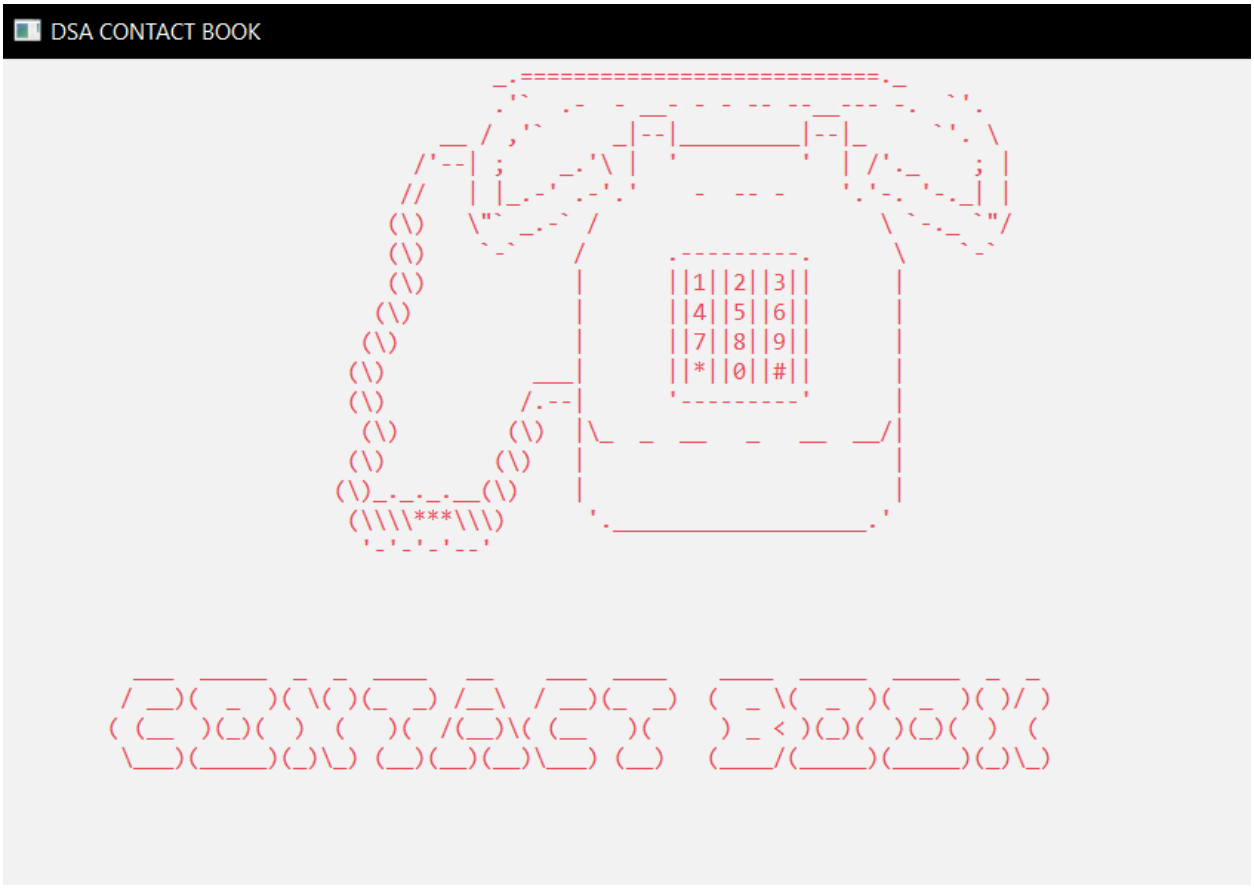
FLOWCHART


START
DISPLAY 1
DSA PROJECT
DISPLAY 2
CONACT BOOK
DISPLAY CHOICE
1)LOGIN
2)SIGNUP
3)EXIT
USER ADDED
SUCCESSFULLY
Condition
3
2
EXITING
PROGRAM
Asking for credential
to register new user
7
wrong credential
Asking for credential
to login
WELCOME DISPLAY
1)ADD CONTACT
2)EDIT CONTACT
3)SEARCH CONTACT
4)DELETE CONTACT
5)DISPLAY ALL CONTACT
6)DELETE ALL CONTACTS
7) EXIT
CHOICE
1
2
3
4
5
6
ADDS A NEW
CONTACT
EDIT EXISTING
CONTACT
SEARCH FOR
CONTACT
DELETE SPECIFC
CONTACT
DISPLAY ALL
CONTACT
DELETE ALL
CONTACTS
STOP

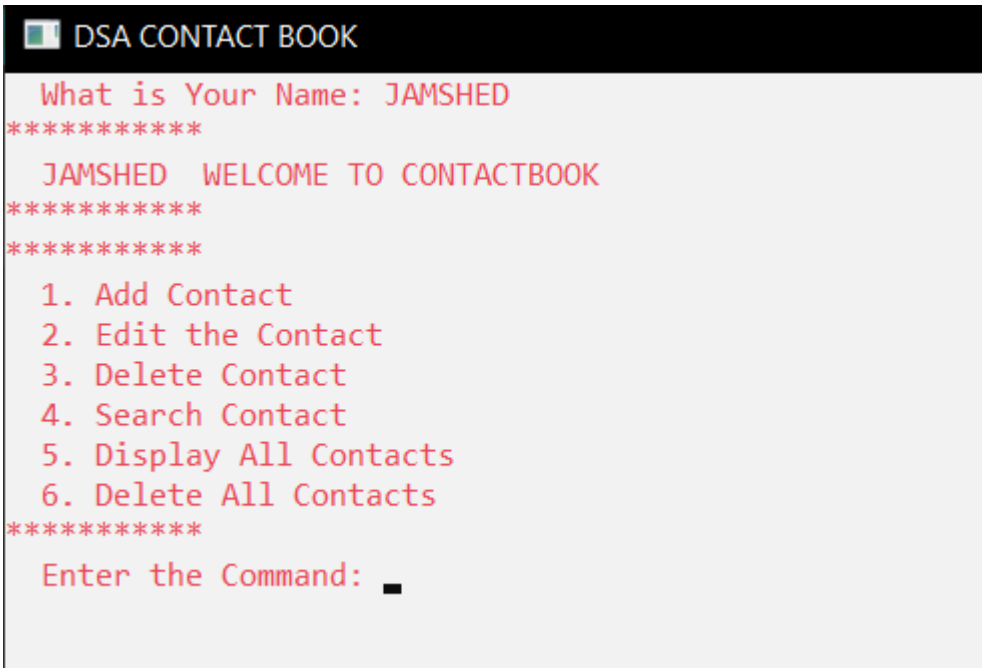
SCREENSHOT:

- **ANIMATION:**





- **CONTACT BOOK FUNCTIONS**



- **ADD CONTACT FUNCTION()**

```
Enter the Command: 1
Name of Contact: FARAZ
Phone Number: 02345676
Contact Added
**********
```

- **EDIT CONTACT FUNCTION():**

```
**********
  Enter the Command: 2
**********
  Press 1 if you want to Search By Name
  Press 2 if you want to Search By Number
  Enter the Command: 1
  Enter the Name to Edit: FARAZ
**********
Name: FARAZ
Phone Number: 2345676
**********
  Press 1 to Edit the Contact: 1
  Enter New Name: RAAD
  Enter New Number: 23456789
  Contact Edited Success Fully
**********
```

- **DISPLAY CONTACT FUNCTION():**

```
Enter the Command: 5
Name:       Number:

AHMAD          3085675432
BASHAR          3105432321
RAAD          23456789
WALEED          3113456765
moeez          123456
Total contacts: 5
**********
```

- **SEARCH CONTACT FUNCTION():**

```
**********
  Enter the Command: 4
**********
  Press 1 if you want to Search By Name.
  Press 2 if you want to Search By Number.
  Enter the Command: 1
  Enter the Name to Search: WALEED
**********
  Name: WALEED
  Phone Number:3113456765
**********
**********
```

- **DELETE CONTACT FUNCTION():**

```
**********
  Enter the Command: 3
**********
  Press 1 if you want to Search By name
  Press 2 if you want to Search By Number
  Enter the Command: 1
  Enter the Name to Delete: RAAD
**********
  Name: RAAD
  Phone Number: 23456789
**********
  Press 1 to Delete the Contact: 1
  Contact Deleted Success Fully
**********
```

CONCLUSION:

Overall, the development of a contact book application in C++ has the potential to provide a useful, customizable, and cost-effective alternative to existing contact management tools. By carefully planning and executing the development process, we can create a reliable and user-friendly application that meets the needs of a wide range of users.

Through a combination of automated and manual testing methods, we will ensure that the project meets our goals of reliability, functionality, and usability. By investing in a thorough testing process, we can deliver a high-quality application that meets the needs of our users.

REFERENCES:

- https://www.upgrad.com/blog/data-structure-project-ideas-beginners/