COLLEGE OF BUSINESS EDUCATION

DODOMA CAMPUS

DEPARTMENT OF INFORMATION COMMUNICATION TECHNOLOGY

FULL NAME	REG. NUMBER	YEAR OF STUDY
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COURSE CODE: ITU 07312

COURSE NAME: PROGRAMMING IN JAVA

PROJECT NAME: CONTACT BOOK STORE APPLICATION

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EXECUTIVE SUMMARY

The Contact Book Management System is a desktop application designed to help individuals and small organizations manage their contact information efficiently. This system provides a user-friendly interface for storing, editing, searching, and deleting contact records, making it an invaluable tool for organizing and accessing contact details in a centralized system.

The main functionalities of the system include:

1. Adding Contacts: Users can input and save contact details such as names, phone numbers, email addresses, and physical addresses.
2. Editing Contacts: Existing contacts can be modified with updated information, ensuring that the contact list remains current.
3. Deleting Contacts: Contacts can be easily removed from the system when no longer needed.
4. Searching Contacts: The application features a search function that allows users to quickly locate a contact by name or other criteria.
5. Data Persistence: Contact information is saved in a text file, ensuring that data is retained even after the application is closed, allowing users to load and store their contact records as needed.

Built using Java with a Swing-based graphical user interface (GUI), the system is easy to use and does not require advanced technical skills. The file-based storage system ensures simplicity and ease of use while keeping the data manageable. This project aims to provide a simple, reliable solution for contact management, with potential for future upgrades such as cloud synchronization, advanced search filters, and enhanced data import/export features.

In summary, the Contact Book Management System is an efficient, user-friendly tool for managing contact information, offering essential features for creating, updating, and finding contacts with minimal effort. It is an ideal solution for individuals, small businesses, or professionals looking to stay organized and maintain a well-managed contact list.

1 CHAPTER ONE

1.1 INTRODUCTION

In today’s fast-paced world, managing contact information efficiently is crucial for both personal and professional purposes. Contact details such as names, phone numbers, emails, and physical addresses are fundamental pieces of information that need to be easily accessible and securely stored. With the increasing number of contacts people maintain, from family members and friends to business associates and clients, having an organized system to store and manage these details is essential.

The Contact Book Management System addresses the need for an intuitive and easy-to-use platform that allows users to store, edit, search, and manage their contacts seamlessly. This desktop application is designed with simplicity in mind, catering to individuals or small businesses that require a straightforward solution to handle contact information.

This system offers key features such as the ability to add new contacts, edit existing contacts, search through stored data, and remove unnecessary entries. The application’s graphical user interface (GUI), developed using Java’s Swing library, ensures a user-friendly experience. Additionally, the system uses a file-based storage solution, where the contacts are saved in a text file, allowing for easy persistence and retrieval of data.

The goal of this project is to create a simple yet functional tool that meets the contact management needs of users, offering a reliable solution for managing and accessing their contact data. In the long term, there is potential for expanding the system's features, including cloud integration, enhanced security, and the ability to import/export contact data to and from other applications or devices.

1.2 PROBLEM STATEMENT

With the growing number of contacts individuals and businesses need to manage, there is an increasing demand for efficient and user-friendly solutions to store and organize contact information. Traditional methods such as physical address books or simple spreadsheets often fall short in providing flexibility, scalability, and ease of use for managing contact details. Additionally, the inability to easily search, edit, or delete contacts can lead to inefficiencies and potential errors, especially when dealing with a large volume of contacts.

1.3 OBJECTIVES

1.3.1 MAIN OBJECTIVE

The main objective of the Contact Book Management System project is to develop a user-friendly and efficient desktop application that enables users to manage, store, retrieve, and update their contact information seamlessly. The system aims to provide a streamlined solution for storing contact details, enhancing accessibility, and improving the organization of contacts, especially for individuals or small businesses.

1.3.2 SPECIFIC OBJECTIVES

- To Develop a User-Friendly Interface.
- To Implement Search Functionality.
- To Enable Efficient Contact Management.
- To Provide Data Persistence.
- To Ensure Scalability and Flexibility.

1.4 SYSTEM REQUIREMENTS

1.4.1 FUNCTIONAL REQUIREMENTS

1. The system should allow users to add new contacts by inputting details.
2. The system should allow users to search for contacts based on specific criteria.
3. The system should display contacts in a clear, readable format.
4. The system should validate user input.
5. All contact data should be stored in a persistent manner.

1.4.2 NON-FUNCTIONAL REQUIREMENTS:

- Performance.
- Usability.
- Scalability.
- Security
- Reliability

2 CHAPTER TWO

2.1 FEATURES IMPLEMENTED

The Contact Book Management System has been developed with a set of core features aimed at providing users with a comprehensive and efficient solution for managing their contact information.

Splash Screen: Initial screen displays when application launch

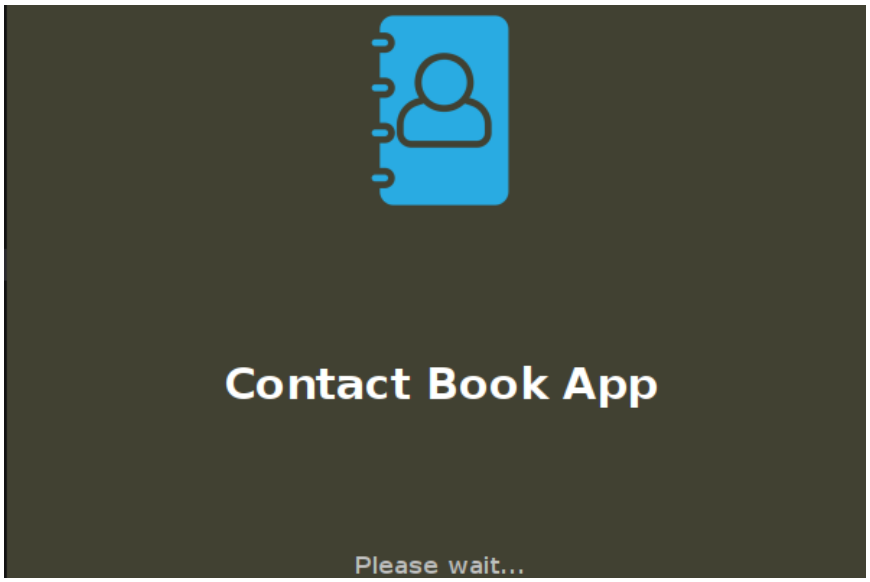

Figure 1: Splash Screen

Main Screen: The home screen serves as the central hub of the application. It displays the list of registered contacts, if no contacts available, a message stating “No Contacts Available” is shown.

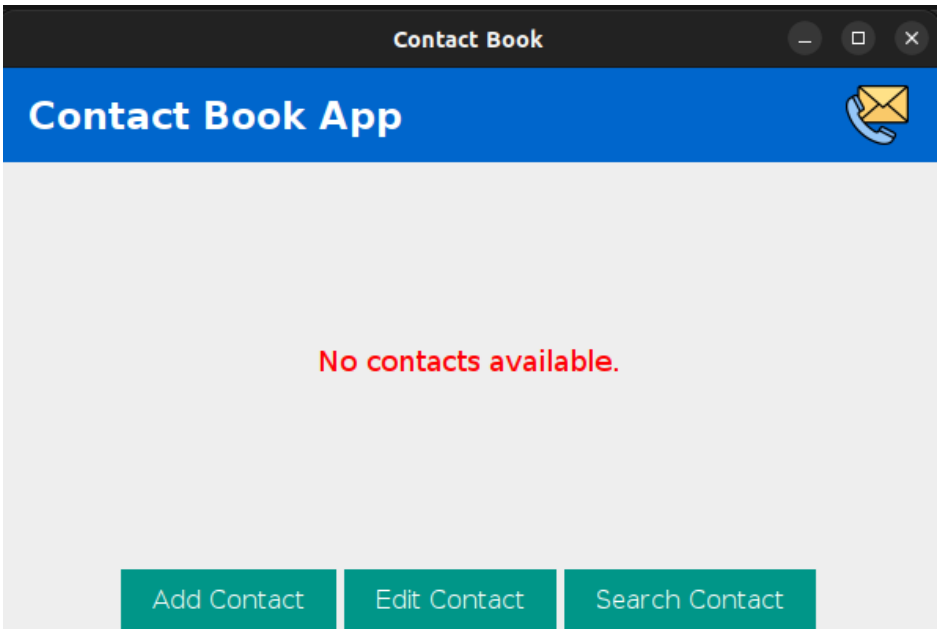

Figure 2: Main Screen

Add New Contact: In this Screen Users can add new contacts to the system by filling in essential

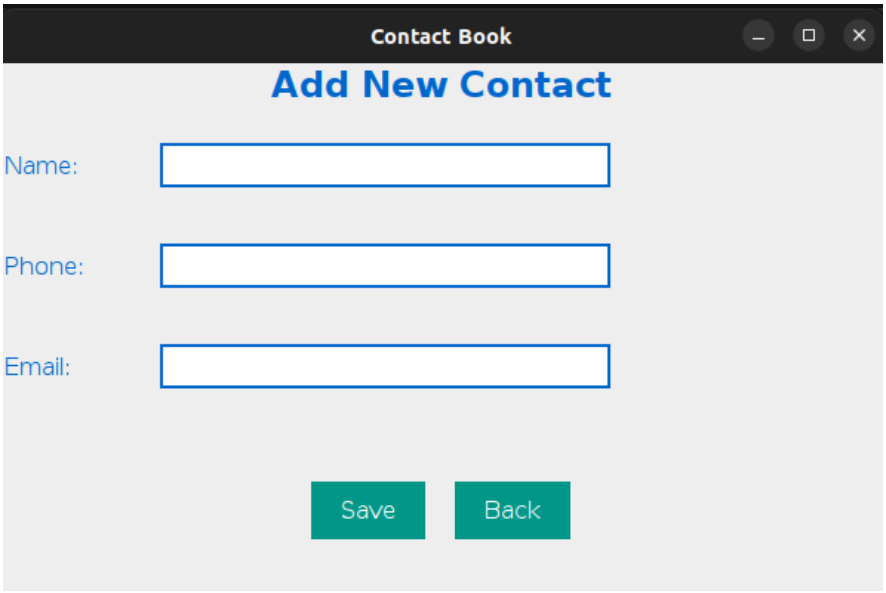

Figure 3: Add New Contact

Search Contacts: The system includes a search bar that allows users to find contacts based on various criteria such as name, phone number, or email address.

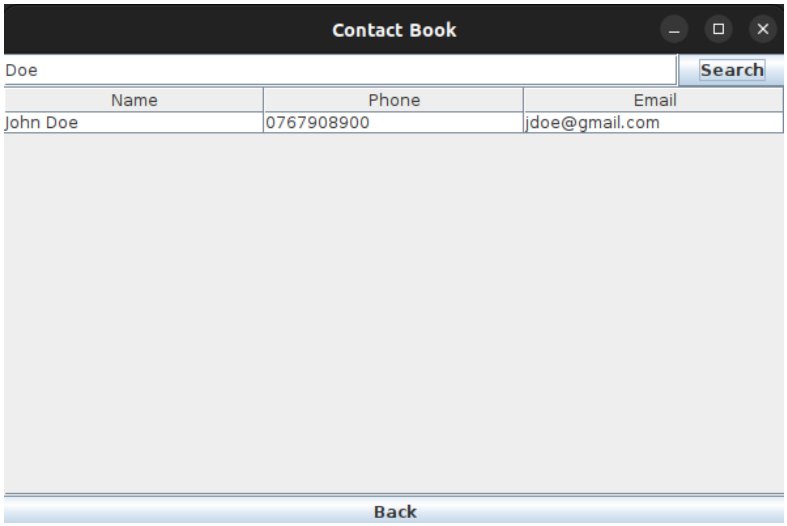

Figure 4: Search Contact Functionality

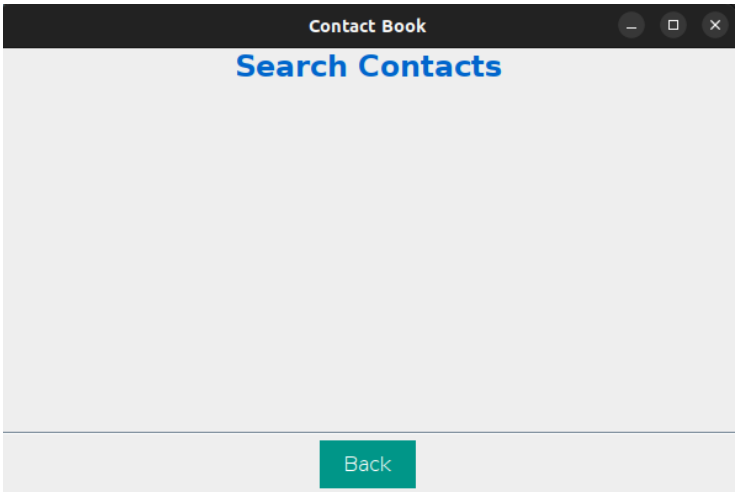

Figure 5: Search Contact Screen

Display Contacts: All stored contacts are displayed in a scrollable list with essential details such as:

- Name
- Phone Number
- Email Address

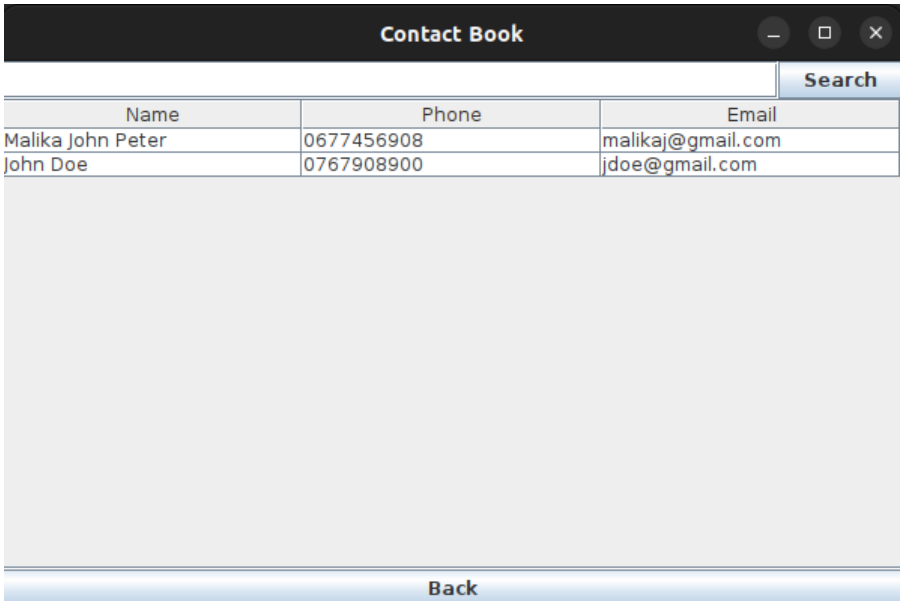

Figure 6: Display Contact List

Basic Input Validation: The system includes input validation to ensure that users enter valid data.

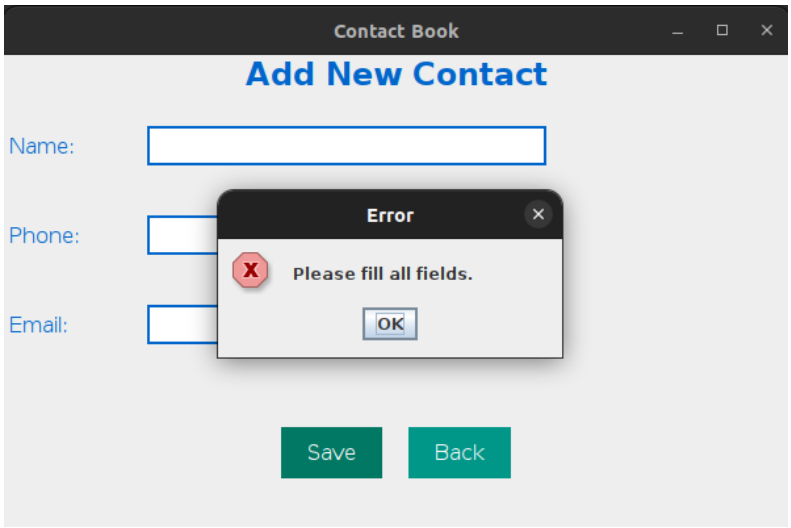

Figure 7: Validating Add New Contacts

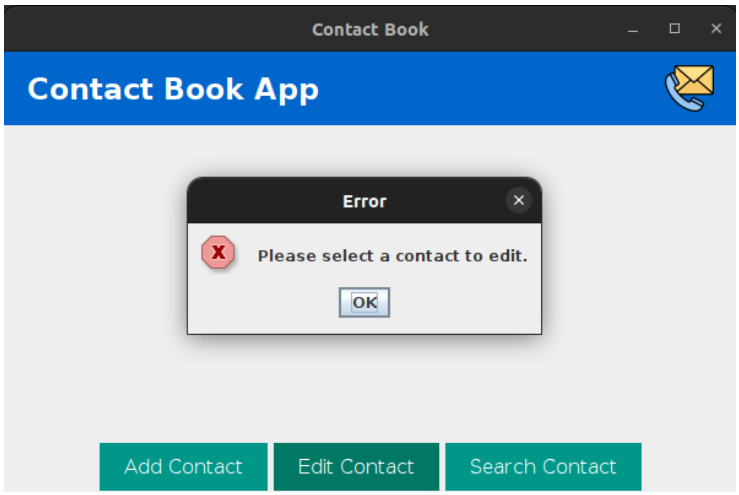

Figure 8: Validating Edit Contacts

2.2 CHALLENGES FACED DURING DEVELOPMENT

During the development of the Contact Book Management System, several challenges were encountered that required problem-solving and adaptation. Below are some of the key challenges faced:

- Data Persistence Management

Challenge: Ensuring that the contact data persisted across different application sessions was one of the first hurdles. Initially, there were concerns about how to effectively save and retrieve contacts from the storage system (file).

Solution: A local file-based approach was considered.

- UI/UX Design

Challenge: Creating an intuitive and user-friendly interface that was easy to navigate was a challenge.

Solution: The UI was designed with simplicity and usability in mind. Buttons and controls were placed in a logical sequence, and labels were added to help users understand their options clearly. Visual feedback, such as success or failure notifications, improved the overall experience.

- Search Functionality

Challenge: Implementing an efficient and responsive search feature, especially with large datasets, posed a challenge. Ensuring that search results were returned in real-time without lag was critical for performance.

Solution: The search functionality was implemented using a simple search algorithm that filtered contacts based on user input. Real-time search updates were incorporated to ensure users could find contacts quickly without waiting for long periods.

2.3 CONCLUSION

The development of the Contact Book Management System has successfully resulted in a robust, user-friendly application designed to manage personal and professional contacts efficiently. Throughout the project, several challenges were encountered, ranging from data persistence and input validation to UI design and performance optimization. However, these challenges were effectively overcome through careful planning, technical problem-solving, and the implementation of best practices in software development.

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