

# README for Phonebook Application

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## Project Title: Phonebook Application

### Description

The Phonebook Application is a simple command-line program designed to manage contact information such as names and phone numbers. It allows users to perform operations like inserting, searching, displaying, deleting, updating, and sorting contacts. The application is built using basic data structures and operations to demonstrate practical concepts of information management.

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### Project Structure

The Phonebook Application is structured around the following modules:

- **Insert Contact:** Allows the user to add a new contact (name and phone number) to the phonebook.
  - **Search Contact:** Enables searching for a specific contact by name.
  - **Display All Contacts:** Shows all contacts currently stored in the phonebook.
  - **Delete Contact:** Allows the user to delete a contact by name.
  - **Update Contact:** Updates an existing contact's phone number.
  - **Sort Contacts:** Sorts all contacts alphabetically by name.
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## Installation

To install and run the Phonebook Application:

1. Clone this repository to your local machine:

```
bash
Copy code
git clone <repository-url>
```

2. Navigate to the project directory:

```
bash
Copy code
cd PhonebookApp
```

3. Run the application (ensure you have the necessary runtime environment):

```
Copy code
java PhonebookApp.java
```

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## Usage

The Phonebook Application supports the following commands, which can be executed from the command line:

*Insert Contact*

**Description:** Add a new contact to the phonebook by specifying the name and phone number.

- **Input:** Name, Phone Number
- **Output:** A success message if the contact is added or an error if the phonebook is full.

## Pseudocode:

Start

Input: Name, Phone Number

If the phonebook is not full:

Add Name and Phone Number to the phonebook

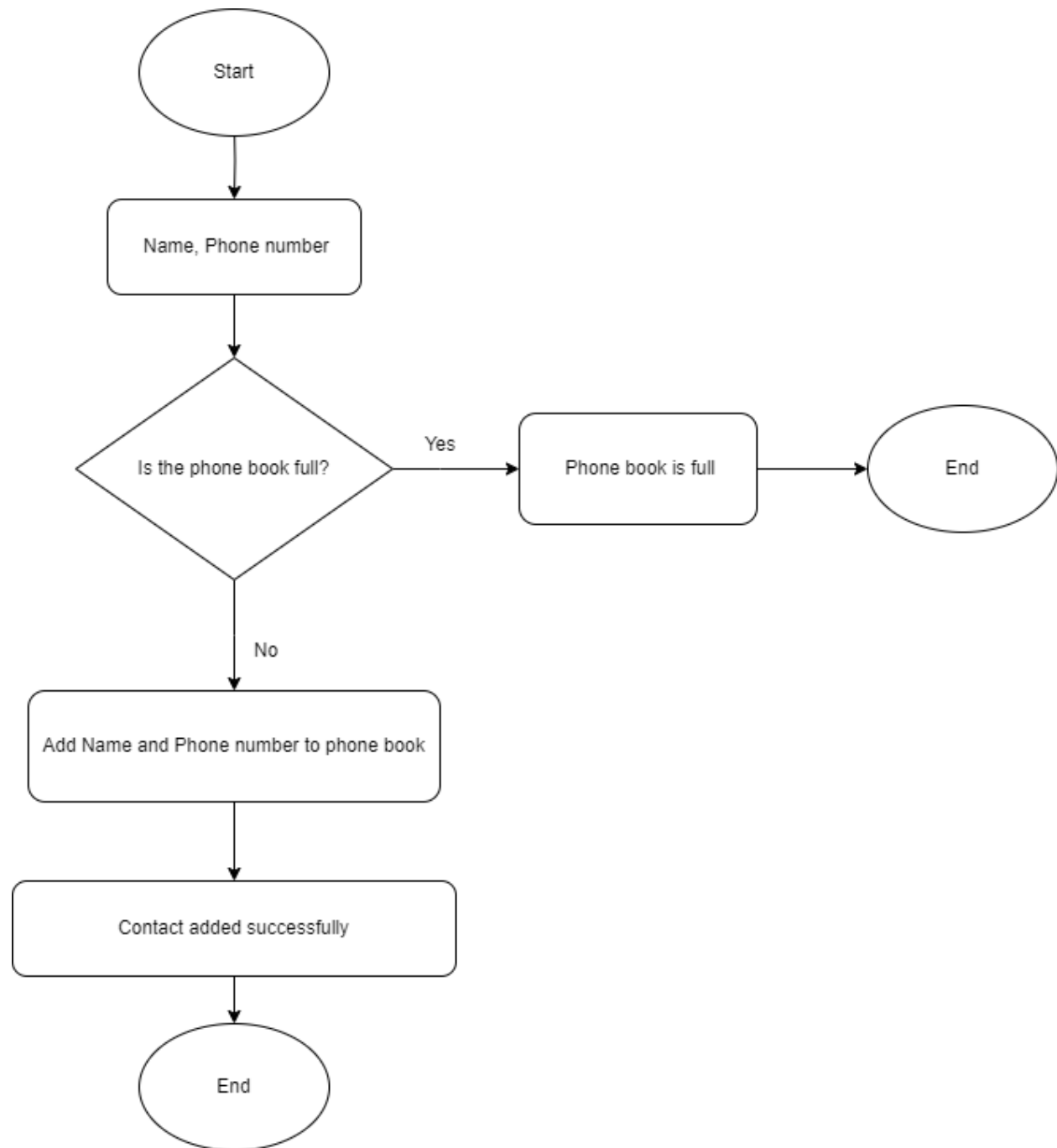
Output: "Contact added successfully"

Else:

Output: "Phonebook is full"

End

## Flowchart:



### *Search Contact*

**Description:** Search for a contact by name and retrieve their phone number.

- **Input:** Name
- **Output:** The contact details if found or an error message if the contact does not exist.

## **Pseudocode:**

Start

Input: Name to search

For each contact in the phonebook:

    If contact's name matches the search name:

        Output: Contact details (Name and Phone Number)

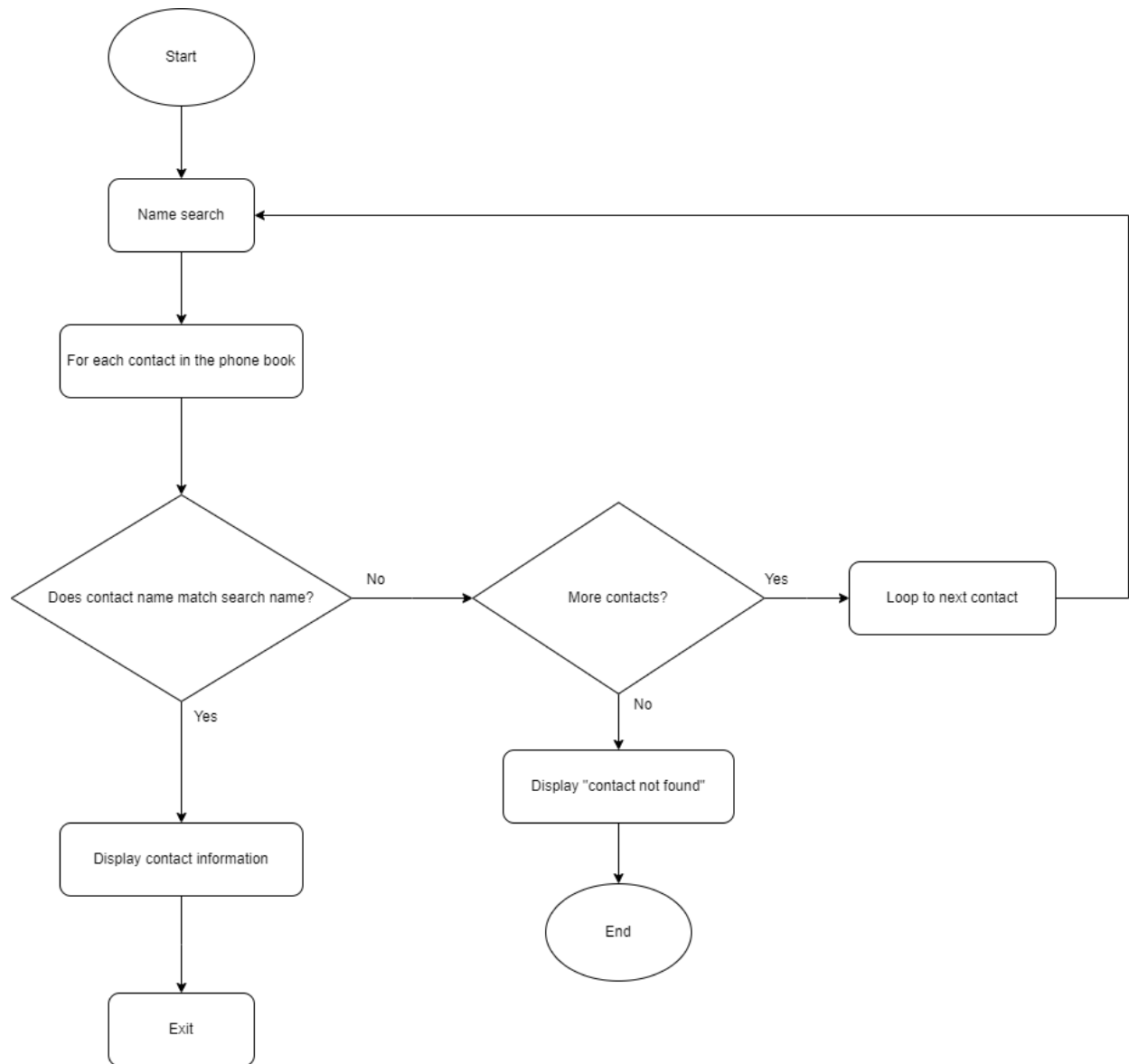
    Exit

If no contact is found:

    Output: "Contact not found"

End

## **Flowchart:**



### *Display All Contacts*

**Description:** Show all the contacts currently stored in the phonebook.

- **Output:** A list of all contacts (name and phone number) or an empty message if no contacts exist.

## Pseudocode:

Start

If the phonebook is not empty:

For each contact in the phonebook:

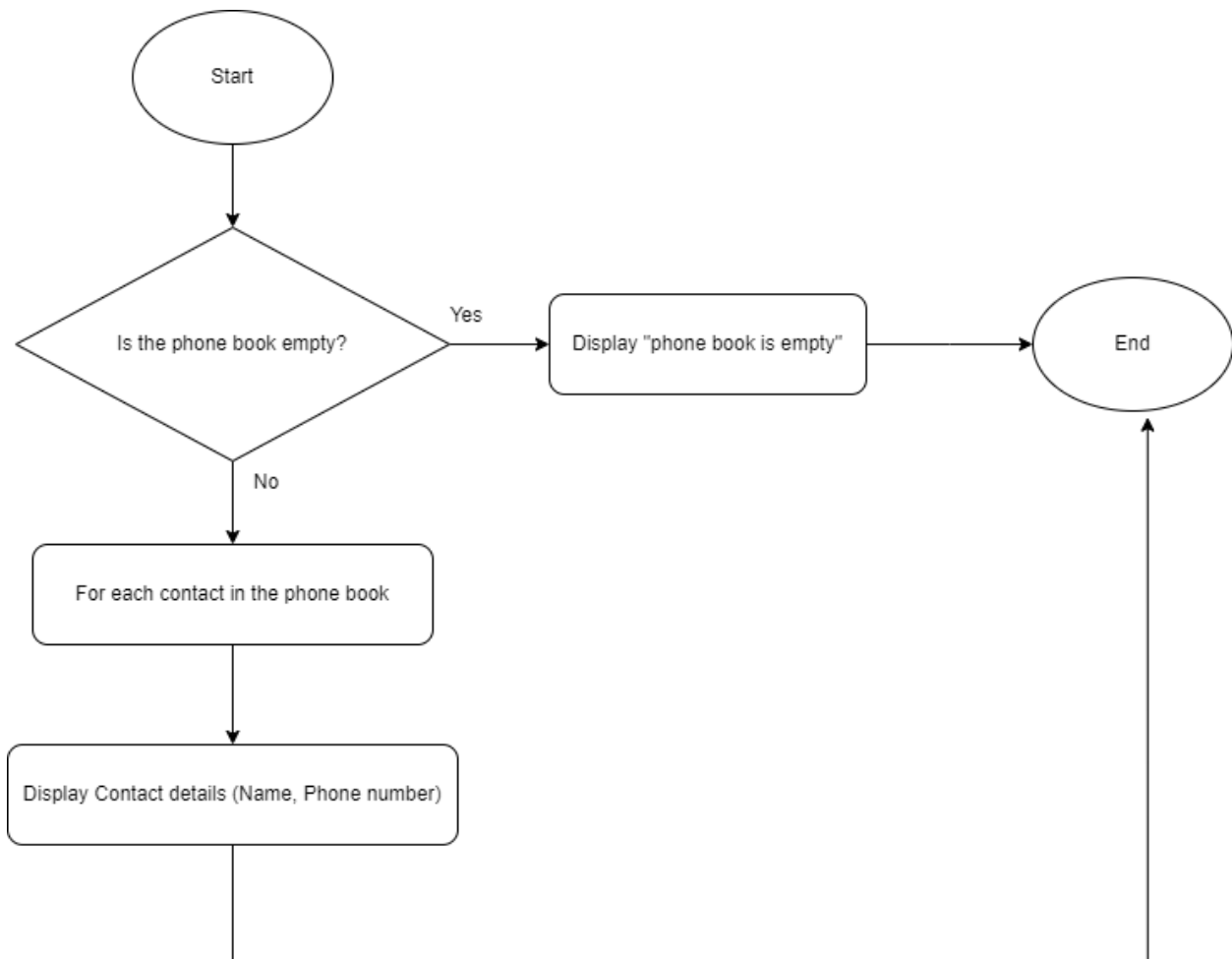
Output: Contact details (Name and Phone Number)

Else:

Output: "Phonebook is empty"

End

## Flowchart:



### *Delete Contact*

**Description:** Delete a contact from the phonebook by providing their name.

- **Input:** Name

- **Output:** A confirmation message if the contact is deleted or an error message if the contact is not found.

## Pseudocode:

Start

Input: Name to delete

For each contact in the phonebook:

    If contact's name matches the delete name:

        Remove contact from the phonebook

        Output: "Contact deleted successfully"

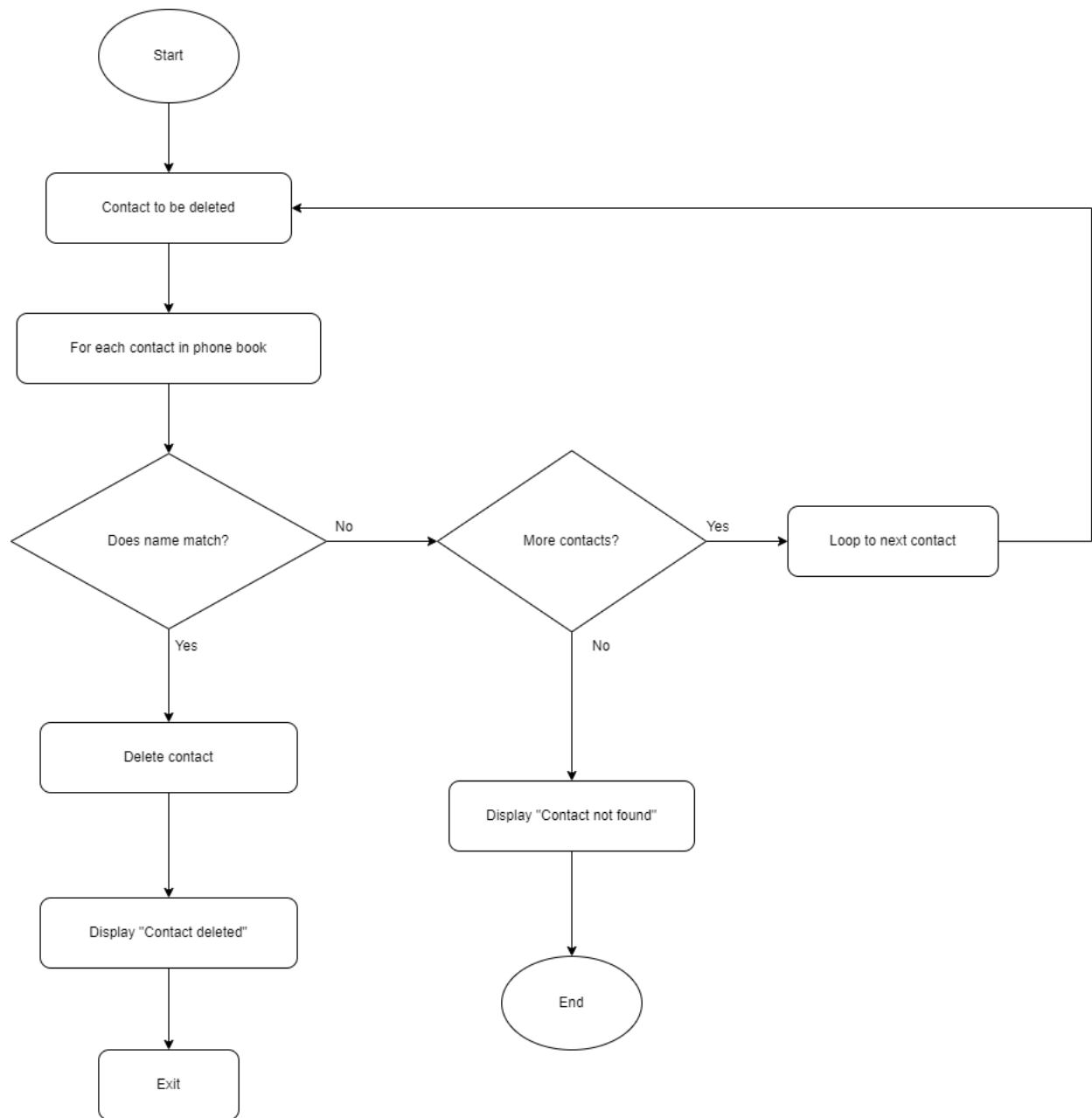
    Exit

If no contact is found:

    Output: "Contact not found"

End

## Flowchart:



### *Update Contact*

**Description:** Update the phone number of an existing contact by providing their name and new phone number.

- **Input:** Name, New Phone Number
- **Output:** A confirmation message if the contact is updated or an error if the contact is not found.

## **Pseudocode:**



Start

Input: Name to update, New Phone Number

For each contact in the phonebook:

If contact's name matches the update name:

Update contact's phone number

Output: "Contact updated successfully"

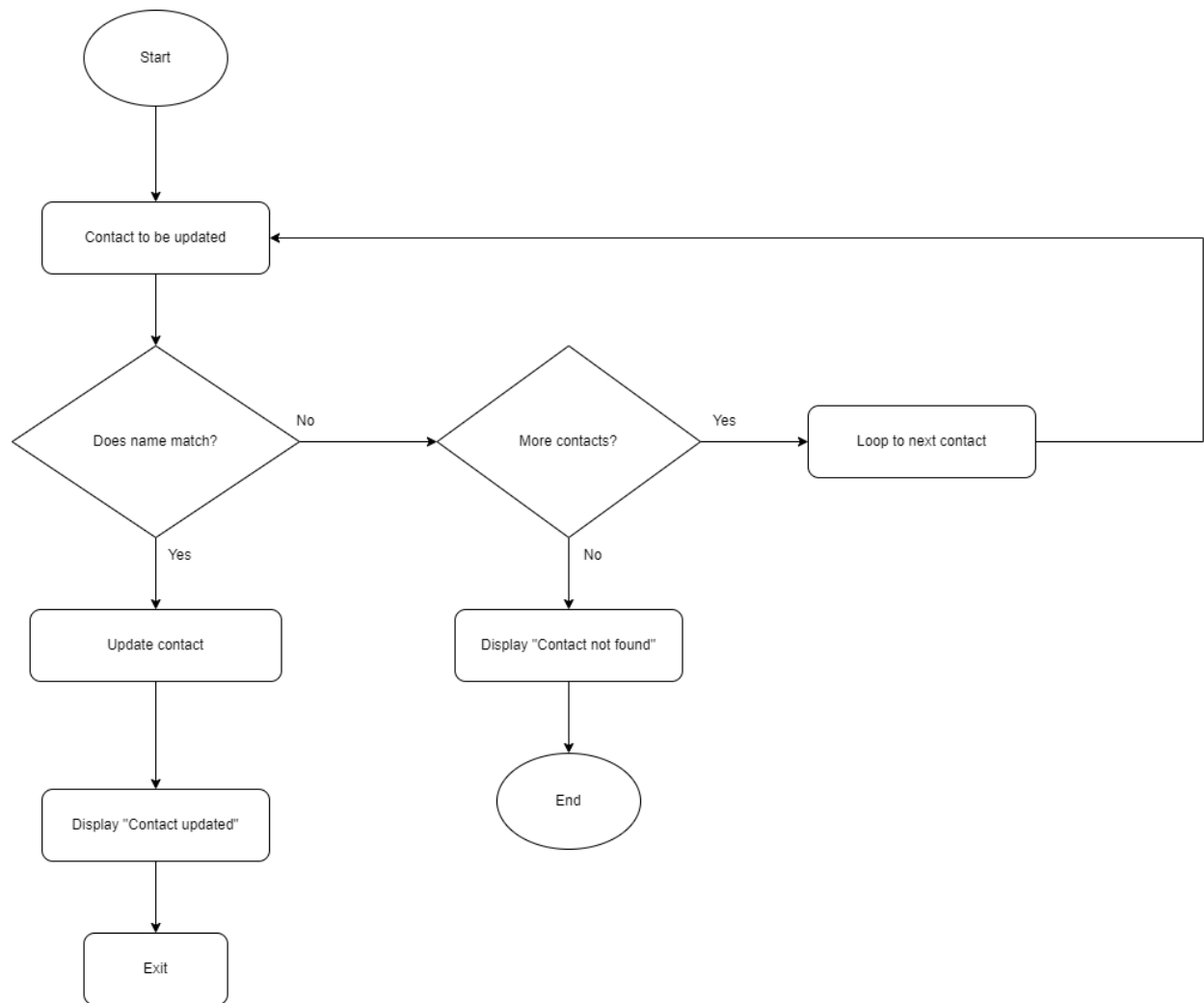
Exit

If no contact is found:

Output: "Contact not found"

End

**Flowchart:**



### Sort Contacts

**Description:** Sort all contacts alphabetically by name.

- **Output:** A success message if the contacts are sorted or an error message if there are no contacts to sort.

## Pseudocode:

Start

If the phonebook is not empty:

Sort contacts alphabetically by name

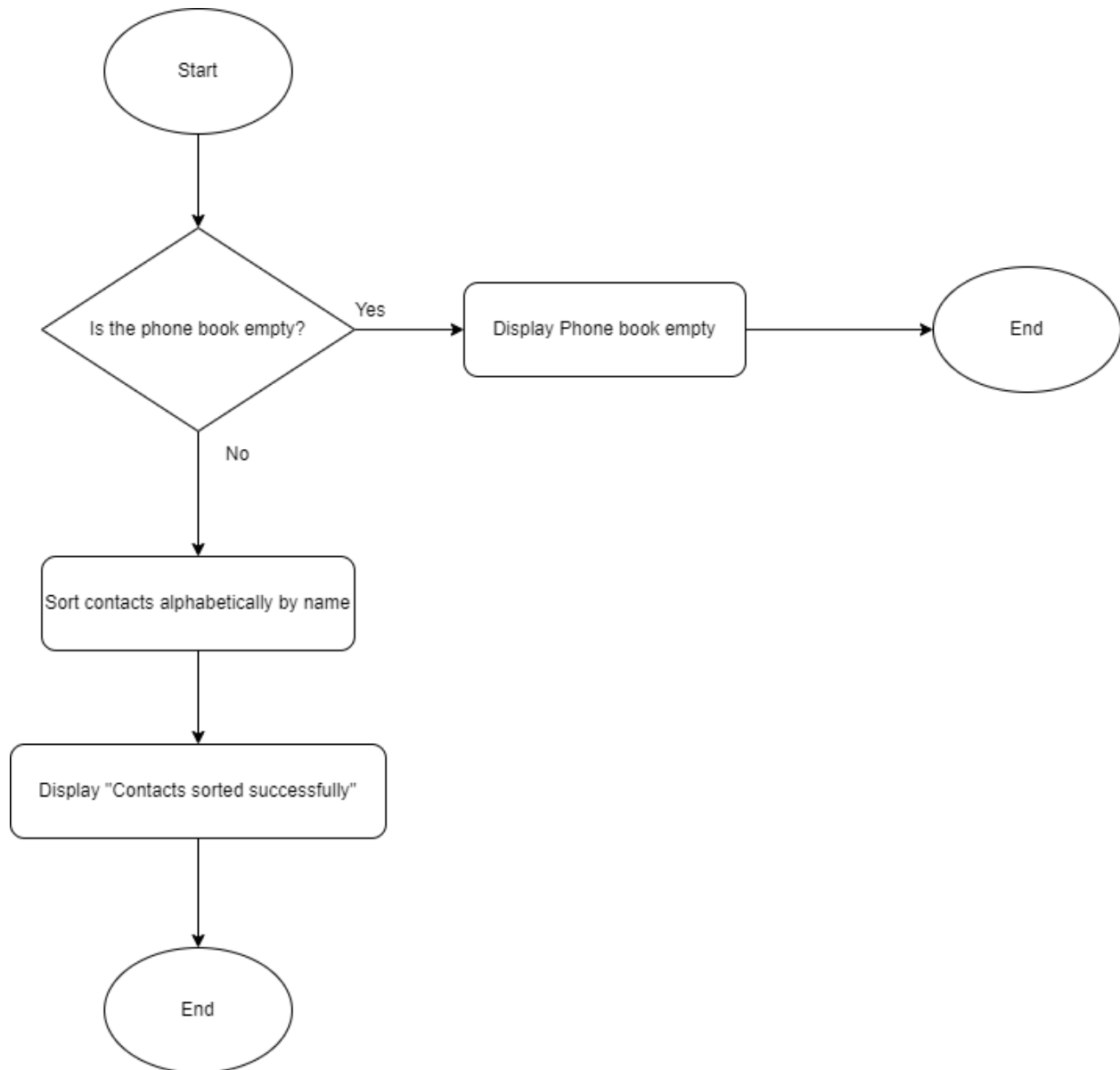
Output: "Contacts sorted successfully"

Else:

Output: "Phonebook is empty"

End

## Flowchart:



## Log Sheet

<b>SN</b>	<b>Name</b>	<b>Student number</b>	<b>Specialization</b>	<b>Role Played In The Project</b>	<b>Mark over 100% (for lecturers use only)</b>
1.	Victoria Kambonde	224090119	<b>informatic</b>	<b>Pseudocode</b>	
2.	Gisela Shigwedha	222130520		<b>pseudocode</b>	
3.	Celine Gwande	224008773		<b>code</b>	
4.	Kasuba Chomba	224005685		<b>flowchart</b>	
5.	Fye-ovoye Shilunga	223121959	Informatics	Flowchart	
6.	Liina Massipa			<b>code</b>	