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**COMP1028 Programming and Algorithm**

**Session: Autumn 2024**

**Group Coursework**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Group Name** | **3C1M** | | | | | |
| **Group Members** | | | | | | |
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| **Marks**  **Total (100)** | Program functionality and code quality (50) | Usability (10) | Comments(5) | Documentation (5) | Presentation & Demo (Recording) (15) | Bonus Feature (15) |
|  |  |  |  |  |  |  |
| **Leader Sign** |  | | | | | |
| **Date** | **8th December 2024** | | | | | |

**Contact Management System using C**

**1.0 Introduction**

The Contact Management System is a C-based application designed for effective management of personal or professional contact lists. Its purpose is to provide users with a reliable platform to organize and interact with contact information efficiently.

**2.0 Installation**

Provide step-by-step instructions on how to install and set up the project. Include any dependencies that need to be installed. Consider the possibility that whoever is reading your README is a novice and would like more guidance. Listing specific steps helps remove ambiguity and gets people to using your project as quickly as possible. Say also if it only runs in a specific context like a particular programming language version or operating system or has dependencies that have to be installed manually.

**Local Installation**

NOTE: Ensure that C Compiler - GCC version **9.3.0 or higher** (recommended: GCC 11.0+) is installed in your machine before running the program

**Installation of GCC**

# To verify GCC is installed and check its version, run this command in your workplace’s terminal

gcc --version

If it’s not installed:

* Windows: Install [MinGW](https://code.visualstudio.com/docs/cpp/config-mingw)
* Linux: Use your package manager to install

sudo apt update && sudo apt install build-essential

* macOS: Install Xcode Command Line Tools and uses clang to compile the code

xcode-select –install

**Cloning the repository**

# Clone the repository

git clone https://github.com/imtiaznn/C-Contact-Manager.git

# Change directory

cd C-Contact-Manager

**Compiling the source files using GCC**

# Compile the program

gcc main.c file\_io.c utils.c -o app.exe

**3.0 Usage**

# Run the program

./app.exe

**4.0 Features**

List the main features of your program. This could include:

* Feature 1 - Save, edit, and delete contact from CSV file.
* Feature 2 - Search the contact from the CSV file.
* Feature 3 - Sort the contact by name, phone number or email address.

Depending on what you are making, it can be a good idea to include screenshots

1. Add Contact

* Allows users to seamlessly add new contacts with a name, phone number, and email address.
* Implements robust input validation to ensure phone numbers and email addresses adhere to correct formats.
* Prevents duplicate contact names, maintaining data uniqueness.

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1. Edit Contact

* Enables users to update an existing contact's name, phone number, or email address.
* Validates input during the editing process to ensure consistency and accuracy.
* Ensures no duplicate names are introduced when making changes.

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1. Delete Contact

* Provides an option to remove a contact by specifying their name.
* Includes a confirmation step to prevent accidental deletions.

A computer screen shot of a program

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1. Search Contact

* Supports searching for contacts using a name, phone number, or email address.
* Features partial matching for flexible and efficient searches.

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1. Display Contacts

* Displays the contact list in a user-friendly, paginated format.
* Offers easy navigation between pages for improved accessibility.

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1. Sort Contacts

* Allows sorting of contacts by name, phone number, or email address for better organization.

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1. Save Contacts:

* Saves all contact information into a CSV file for persistence.
* Appends new entries to the file without overwriting existing data.

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**After:**

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1. Load Contacts

* Automatically imports contacts from a CSV file into a Binary Search Tree (BST) upon program startup.

1. Update CSV

* Keeps the CSV file up to date with any changes, such as additions, edits, or deletions.

**Before:**

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**After:**

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1. Input Validation

* Validates phone numbers to ensure compliance with specific formats (e.g., Malaysian phone standards).

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* Ensures email addresses are correctly formatted to adhere to standard email conventions.

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* Ensures name is not duplicate when creating a new contact.

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* Ensure search for a contact that have created before in the BST.

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* Ensure enter the options that are listed in the program.

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1. Utilizes dynamic memory allocation for efficient storage of contact data

* Ensures all allocated memory is properly freed, preventing memory leaks and ensuring optimal performance.

**5.0 License**

MIT License

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**6.0 Contact**

For question, feedback or contribution, feel free to contact any of the developer below:

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