User Manual for Mess Management System

Introduction

The Mess Management System is a console-based application designed to efficiently manage the operations of a mess, including member management, expense tracking, and meal accounting. This manual provides step-by-step instructions for using the system. The Mess Management System is a comprehensive software tool for managing mess operations, including member details, expenses, investments, and meal tracking. This system is user-friendly and streamlines the calculation of bills and expense tracking.

Getting Started

System Requirements

- Operating System: Windows

- Compiler: GCC or any C++ compiler

- Terminal or Command Prompt

Running the System

1. Run the .exe file.(Mess_Management.exe)

2. Use the menu to navigate through the system.

3. Ensure the users.txt file exists. If not, it will be created automatically upon registering the first user.

Features Overview

- **User Authentication: Secure login and registration system.**

- **Member Management: Add, view, remove members, and update investments.**

- **Expense Management: Record and view expenses.**

- **Meal Management: Add and view meal details.**

- **Bill Calculation: Automatically calculate meal rates and individual member bills.**

- **File-Based Storage: Persist data across sessions using external files.**

Main Menu Options

1. Login

- **Purpose**: Authenticate existing users.
- **Steps**:
    1. Select the Login option.
    2. Enter your username and password.
    3. Upon successful login, you can access other features.
    4. Wait 3 second after successful login.

2. Register

- **Purpose**: Register a new user.
- **Steps**:
    1. Select the Register option.
    2. Provide a unique username and password.
    3. The system will save your credentials for future login.
    4. Wait 3 second after successful register.
- *Note: You must log in to access features beyond registration.*

3. Add Member

- **Purpose**: Add a new member to the mess.
- **Steps**:
    1. Select the Add Member option.
    2. Enter the member's ID, name, and contact information.
    3. The system initializes the member's meal count and investment as zero.
    4. Wait 3 second after successfully adding member.

4. View Members

- **Purpose**: Display a list of all mess members.
- **Steps**:
    1. Select the View Members option.
    2. The system will show details such as ID, name, contact, meal count, and investment.

3. Press 'q' to reset screen after viewing.

5. Remove Member

- **Purpose**: Delete a member from the system.

- **Steps**:

    1. Select the Remove Member option.

    2. Enter the ID of the member to be removed.

    3. Wait 3 second after successfully removing member.

6. Add Investment

- **Purpose**: Update a member's investment.

- **Steps**:

    1. Select the Add Investment option.

    2. Enter the member ID and the investment amount.

    3. The system updates the member's investment record.

    4. Wait 3 second after successfully adding investment.

7. Add Expense

- **Purpose**: Record a new expense for the mess.

- **Steps**:

    1. Select the Add Expense option.

    2. Enter the date, description, and amount.

    3. The system saves the expense.

    4. Wait 3 second after successfully adding expense.

8. View Expenses

- **Purpose**: Display all recorded expenses.

- **Steps**:

    1. Select the View Expenses option.

    2. The system shows details such as date, description, and amount.

    3. Press 'q' to reset screen after viewing.

9. Add Meal

- **Purpose**: Record meals consumed by a member.

- **Steps**:
    1. Select the Add Meal option.
    2. Enter the member ID, date, and number of meals.
    3. The system updates the member's meal count.
    4. Wait 3 second after successfully adding meal.

10. View Meals

- **Purpose**: Display the meal records.
- **Steps**:
    1. Select the View Meals option.
    2. The system shows details such as member ID, date, and number of meals.
    3. Press 'q' to reset screen after viewing.

11. Calculate Bill

- **Purpose**: Calculate and display bills for all members.
- **Steps**:
    1. Select the Calculate Bill option.
    2. The system calculates the meal rate (total expenses/total meals).
    3. Displays each member's bill based on their meal count.
    4. Press 'q' to reset screen after viewing.

12. Manage Member Expense

- **Purpose**: Calculate net expenses for each member.
- **Steps**:
    1. Select the Manage Member Expense option.
    2. The system calculates the total bill, deducts the investment, and displays the net expense.
    3. Press 'q' to reset screen after viewing.

13. Exit

- **Purpose**: Exit the application.
- **Steps**:
    1. Select the Exit option.

2. The system will terminate.

3. Will clear the screen after 3 seconds.

4. Until you press any key it will not terminate completely.

Error Handling

- **Invalid Input**: The system displays a message and prompts the user to re-enter a valid choice.

- **File Not Found**: Ensure the required data files (members.txt, expenses.txt, meals.txt, users.txt) exist in the same directory as the executable.

Data Files

1. **users.txt**: Stores user credentials.

2. **members.txt**: Stores member details.

3. **expenses.txt**: Stores expense records.

4. **meals.txt**: Stores meal records.

Troubleshooting

- **Unable to Log In: Check if your username and password are correct. Ensure the users.txt file exists and contains your credentials.**

- **File Errors: Ensure all required files are in the same directory as the executable.**

- **Incorrect Data: Verify data entries before saving.**

FAQs

1. **Can I recover a deleted member?** No, once a member is removed, the data is permanently deleted.

2. **How are meal rates calculated?** Meal rates are calculated as Total Expenses / Total Meals.

3. **Can multiple users use the system?** Yes, but each user must log in with their credentials.

Contact Support

For further assistance, contact the developer:

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Thank you for using the Mess Management System! We hope it simplifies your mess operations.