User Manual for Trip Expense Calculator

Introduction

The Trip Expense Calculator is a C program designed to help users manage and track their expenses during a trip. It allows users to input details about their trip, categorize expenses, track contributions from friends, and generate summary reports.

Features

- Input and manage details of friends and their initial contributions.

- Record and categorize expenses (Transportation, Food, Accommodation, Entertainment, Miscellaneous).

- Track individual contributions and balances.

- Set expense limits per category.

- Generate and export a detailed summary report.

- Compare total expenses against a budget.

Requirements

- A C compiler (e.g., GCC).

- Basic understanding of command-line interfaces.

Program Workflow

1. Input Trip Details

When the program starts, it prompts you to:

- Enter the **number of days** for the trip.

- Enter the **name of the place** where the trip will take place.

2. Add Friends

You will be asked to input:

- The number of friends going on the trip.

- The name of each friend.

- The initial amount of money they have.

3. Menu Options

After entering trip details, you will see the following menu:

1. **Input Expense Details**

   o   Add expenses by selecting a category (Transportation, Food, etc.).

   o   Provide a short description of the expense.

   o   Enter the amount spent. The program will split the expense equally among all friends.

2. **View Friends Details**

   o   Display the names of friends, their initial contributions, total expenses, and remaining balances.

3. **View All Expenses**

   o   Display all recorded expenses, including categories, descriptions, and amounts.

4. **Calculate Total Trip Expenses**

   o   View the total amount spent during the trip.

5. **Set Expense Limits**

   o   Set budget limits for predefined categories.

   o   Receive alerts if expenses exceed these limits.

6. **Generate Summary Report**

   o   Display a detailed report of total expenses, spending per category, and individual balances.

7. **Export Summary Report**

   o   Save the summary report to a file named trip_summary.txt.

8. **Compare with Budget**

   o   Input a total budget and compare it to the trip expenses.

9. **Exit**

   o   End the program.

Usage Example

Example Workflow

1. **Input Trip Details**:

   o   Number of days: 3

   o   Place: Paris

2. **Add Friends**:

  o Number of friends: 2

  o Friend 1: Name: Alice, Amount: 200

  o Friend 2: Name: Bob, Amount: 150

3. **Record Expenses**:

  o Category: Food, Description: "Lunch at a cafe", Amount: 50

  o Category: Transportation, Description: "Taxi fare", Amount: 30

4. **View Details**:

  o Check remaining balances and total spent.

5. **Set Expense Limits**:

  o Food: 100

  o Transportation: 50

6. **Generate Summary Report**:

  o View a detailed breakdown of expenses and balances.

7. **Export Report**:

  o Save the report for record-keeping.

8. **Compare with Budget**:

  o Budget: 300

Error Handling

- **Invalid Input**: The program validates inputs to ensure they are within acceptable ranges.

- **Exceeded Limits**: Alerts are displayed if expenses exceed set category limits.

- **Maximum Limits**: Caps are enforced on the number of friends and expenses (100 each).

Exported Files

- **trip_summary.txt**: Contains a detailed summary report of the trip, including:

  o Total expenses.

  o Spending by category.

  o Individual balances.

Tips

- Keep descriptions concise for clarity.

- Regularly check balances and limits to avoid overspending.

- Use the export feature to maintain records for future reference.

Troubleshooting

- **Error: Too many friends or expenses**:

  - Reduce the number of inputs to within the maximum allowed (100).

- **Expense limit exceeded**:

  - Adjust limits or review recorded expenses to identify excess spending.

- **Incorrect data entry**:

  - Restart the program and re-enter data.

Conclusion

The Trip Expense Calculator simplifies expense tracking during trips. By categorizing expenses, setting budgets, and splitting costs among friends, it ensures transparency and financial accountability. Use this tool to focus on enjoying your trip without worrying about finances!

Credits

Developed by: Boyalla Sumanth Reddy