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# Expense Tracker

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Mini Project



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# INTRODUCTION

## **Project overview:**

The Expense Tracker project is designed to help users manage their expenses effectively. It allows users to sign up, log in, add, list, edit, and delete expenses. The program also provides a summary of yearly expenses and identifies the month with the highest expenses.

## **Problem statement:**

Managing personal finances can be challenging without a systematic approach to track expenses. Users need a reliable way to record and analyze their spending.

## **Objective:**

To develop a console-based application in C that enables users to track their expenses, providing insights into their spending habits and helping them manage their finances better.

# System Requirements

Minimum Requirements for C Programming Code to Run:

## ➤ **Hardware Requirement:**

- A computer with at least 4GB RAM
- 500MB of free disk space

## ➤ **Software Requirement:**

- **Operating System:** Windows/Linux/MacOS
- **Compiler:** GCC or any C compiler
- **IDE:** Code: Blocks, Dev-C++, or any C IDE

# Design and Development

## ❖ Program Logic:

The program begins with a welcome message and provides a menu with options for signing up, logging in, adding expenses, listing expenses, displaying yearly totals, identifying the month with the most expenses, editing expenses, and deleting expenses. User authentication is managed through a simple text file storing usernames and passwords.

### 1. Data Structures:

- **Expense** :- This structure holds expense details.

### 2. Functions:

- **getMonthName()**: Returns the name of the month corresponding to the given integer.
- userExists()**: Checks if a user with the given username and password exists in the users.txt file.
- signUp()**: Registers a new user by adding their username and password to users.txt.
- login()**: Authenticates a user by verifying their username and password.
- addExpense()**: Adds a new expense for the logged-in user.
- listExpenses()**: Lists all expenses for the logged-in user for a specific year.
- displayYearlyTotal()**: Displays the total expenses for the logged-in user for a specific year.
- displayMonthWithMostExpenses()**: Displays the month with the highest expenses for the logged-in user for a specific year.
- editExpense()**: Edits an existing expense for the logged-in user.
- deleteExpense()**: Deletes an existing expense for the logged-in user.
- displayWelcomeMessage()**: Displays a welcome message.

# Testing and Results

## ❖ **Test cases:**

To add a new pet record and verify it; update an existing pet record and check the changes; delete a pet record and confirm its removal; set a reminder to ensure all changes were saved successfully.

### **Test cases:**

**Test Case 1: Sign up with a new username and password**

**Test Case 2: Add an expense for a logged-in user**

**Test Case 3: List all expenses for a specific year**

**Test Case 4: Display the month with the highest expenses for a specific year**

**Test Case 5: Edit an existing expense**

**Test Case 6: Delete an existing expense**

# Output:

```
≡fif Welcome to the Ultimate Expense Tracker! ≡fif
Track your expenses like a pro!
```

```
Expense Tracker Menu:
```

1. Sign Up
  2. Log In
  3. Add Expense
  4. List All Expenses
  5. Display Yearly Total
  6. Display Month with Most Expenses
  7. Edit Expense
  8. Delete Expense
  9. Exit
- ```
Enter your choice: |
```

## Test case 1:

```
Expense Tracker Menu:
1. Sign Up
2. Log In
3. Add Expense
4. List All Expenses
5. Display Yearly Total
6. Display Month with Most Expenses
7. Edit Expense
8. Delete Expense
9. Exit
Enter your choice: 1
Enter a username: kk
Enter a password: kk
Account created successfully!
```

## Test case 2:

```
Expense Tracker Menu:
1. Sign Up
2. Log In
3. Add Expense
4. List All Expenses
5. Display Yearly Total
6. Display Month with Most Expenses
7. Edit Expense
8. Delete Expense
9. Exit
Enter your choice: 3
Enter year (YYYY): 2024
Enter month (1-12): 7
Enter expense amount: 1000
```

## Test case 3:

```
Expense Tracker Menu:
1. Sign Up
2. Log In
3. Add Expense
4. List All Expenses
5. Display Yearly Total
6. Display Month with Most Expenses
7. Edit Expense
8. Delete Expense
9. Exit
Enter your choice: 5
Enter the year: 2024
Total expenses for 2024: $1000.00
```

## Test case 4:

```
Expense Tracker Menu:
1. Sign Up
2. Log In
3. Add Expense
4. List All Expenses
5. Display Yearly Total
6. Display Month with Most Expenses
7. Edit Expense
8. Delete Expense
9. Exit
Enter your choice: 6
Enter the year: 2024
Month with highest expenses in 2024: July
```

### Test case 5:

```
Expense Tracker Menu:
1. Sign Up
2. Log In
3. Add Expense
4. List All Expenses
5. Display Yearly Total
6. Display Month with Most Expenses
7. Edit Expense
8. Delete Expense
9. Exit
Enter your choice: 7
Enter year of expense to edit (YYYY): 2024
Enter month of expense to edit (1-12): 7
Enter new amount: 2000
Expense updated successfully.
```

### Test case 6:

```
Enter your choice: 8
Enter year of expense to delete (YYYY): 2024
Enter month of expense to delete (1-12): 7
Expense deleted successfully.
```

## Discussion of results

The program successfully performs all intended operations, including user authentication, expense management, and reporting. The results show accurate calculations and proper file handling, ensuring data persistence between sessions.

## Conclusion

### ➤ Summary of the Project:

The Expense Tracker in C is a functional application that helps users manage their expenses through a series of straightforward commands. The project demonstrates basic file handling, user authentication, and data manipulation in C.

### ➤ Future Enhancements:

1. Implement encryption for stored passwords to enhance security.
2. Develop a graphical user interface (GUI) for better user experience.
3. Add functionality to categorize expenses and generate more detailed reports.

# References

## **Bro Code (youtube)**

Link:- [https://youtu.be/87SH2Cn0s9A?si=WPBUdg1e\\_ynPYLjl](https://youtu.be/87SH2Cn0s9A?si=WPBUdg1e_ynPYLjl)