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# PLANNER

## **Personal Life Management System**

**University of Petroleum and Energy Studies  
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**Major Project – Programming in C (CSEG1032)**

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## **Abstract:**

This project aims to build a **Personal Life Management System** that helps individuals efficiently manage their daily activities, including **expenses, habits, health logs, study progress, and reminders**.

The system is fully menu-driven and implemented using **modular programming in C**, separating each major functionality into different modules.

The project makes use of **file handling, structures, modular functions, and basic date/time operations**. It allows users to store and track daily records, view summaries, and maintain productivity.

## **Problem Definition:**

In today's lifestyle, students and working individuals struggle to maintain discipline in:

- Expense tracking
- Habit formation
- Health monitoring
- Study hours management
- Remembering events/tasks

There is a need for a **single unified system** that manages all these areas in one place.

The objective of this project is to design a **simple and structured command-line tool** that:

1. Records user data using file storage
2. Provides summaries daily or monthly
3. Helps users monitor their performance
4. Is easy to use, scalable, and modular

# **System Design:**

The system uses a modular architecture: Each module has its own .c and .h files. main.c contains the central menu. Data is stored using text files (e.g., expenses.txt, habits.txt). All modules use reusable functions.

## Modules:

- Expense Tracker
- Habit Tracker
- Health Tracker
- Study Tracker
- Reminder System

## **Algorithm (Overall Program Flow):**

- i) Start the program
- ii) Display main menu: Expense Tracker Habit Tracker Health Tracker Study Tracker Reminder System Exit
- iii) Read user choice
- iv) If Expense selected → go to Expense Menu
- v) If Habit selected → go to Habit Menu
- vi) If Health selected → go to Health Menu
- vii) If Study selected → go to Study Menu
- viii) If Reminder selected → go to Reminder Menu
- ix) Each module performs: Add Data View Data Generate Summary
- x) Return to main menu
- xi) If Exit → terminate the program

# **Flowchart:**

Main Menu Flowchart:

START

|

v

Display Main Menu

|

v

Read User Choice (1–6)

|

|--> If 1 → Expense Menu

|--> If 2 → Habit Menu

|--> If 3 → Health Menu

|--> If 4 → Study Menu

|--> If 5 → Reminder Menu

|--> If 6 → EXIT

|

v

If invalid → Show error → Repeat menu

## EXPENSE MODULE FLOWCHART

Expense Menu

|

v

Show Options (1:Add, 2:View, 3:Summary, 4:Back)

|

v

Read Choice

|

|--> If 1 → Input item + amount → Save into expenses.txt

|

|--> If 2 → Read all records → Display

|

|--> If 3 → Filter by current month/year → Calculate total →

Display

|

|--> If 4 → Return to Main Menu

## Habit Module Flowchart

Habit Menu

|

v

Show Options (1:Add, 2:Mark Completed, 3:View, 4:Back)

|

v

Read Choice

|

|--> If 1 → Input habit name → Save with status "0"

|

|--> If 2 → Load all habits → Select one → Change status to "1"

→ Rewrite file

|

|--> If 3 → Read habits.txt → Display habit + status

|

|--> If 4 → Return back

## Health Module Flowchart

Health Menu

|

v

Show Options (1:Add, 2:View Log, 3:Today's Summary, 4:Back)

|

v

Read Choice

|

|--> If 1 → Input steps + calories → Add current date → Save to file

|

|--> If 2 → Read health.txt → Display all entries

|

|--> If 3 → Match today's date → Sum steps + calories → Show summary

|

|--> If 4 → Return back

# Study Module Flowchart

Study Menu

|

v

Show Options (1:Add, 2:View Log, 3:Today's Summary, 4:Back)

|

v

Read Choice

|

|--> If 1 → Input subject + hours → Add date → Save to file

|

|--> If 2 → Read study.txt → Display all entries

|

|--> If 3 → Filter today's date → Add hours → Show summary

|

|--> If 4 → Return

## Reminder Module Flowchart

Reminder Menu

|

v

Show Options (1:Add, 2:View, 3:Back)

|

v

Read Choice

|

|--> If 1 → Input title/date/time → Save to reminders.txt

|

|--> If 2 → Read reminders.txt → Display reminders

|

|--> If 3 → Return back

## **Implementation:**

The Personal Life Management System is implemented using a **modular structure** in the C programming language.

Each feature—Expense, Habit, Health, Study, and Reminder—is written as a separate C module with its own header file.

The system uses:

- **File Handling** (`fopen`, `fprintf`, `fscanf`)
- **Time and Date Handling** (`time.h`)
- **Modular Programming** (separate `.c` and `.h` files)
- **Menu-driven Architecture** (loops + switch-case)

Each module is described below with key implementation points and snippets.

---

## # Main Controller (main.c)

### Purpose:

- Display the main menu
- Call correct module menu
- Maintain application loop

### Key Snippet

```
do {  
    printf("1. Expense Tracker\n");  
    printf("2. Habit Tracker\n");  
    printf("3. Health Tracker\n");  
    printf("4. Study Tracker\n");  
    printf("5. Reminder System\n");  
    printf("6. Exit\n");  
  
    scanf("%d", &choice);  
  
    switch(choice) {  
        case 1: expenseMenu(); break;  
        case 2: habitMenu(); break;  
        case 3: healthMenu(); break;  
    }  
}  
while(choice != 6);
```

```
        case 4: studyMenu(); break;
        case 5: reminderMenu(); break;
    }
} while (choice != 6);
```

---

## # Expense Module (expense.c)

### Features

- Add an expense
- View all expenses
- Monthly summary calculation

### Important Concepts

- Uses system date (time.h)
- Stores: *item, amount, month, year*

### Snippets

#### Adding an Expense

```
printf("Enter expense name: ");
scanf("%s", item);
printf("Enter amount: ");
scanf("%f", &amount);
```

```
fprintf(fp, "%s %.2f %d %d\n", item, amount, month, year);
```

#### Monthly Summary

```
if(month == currentMonth && year == currentYear) {
    total += amount;
}
```

---

## **# Habit Module (habit.c)**

### **Features**

- Add new habit
- Mark habit as completed
- View habit list

### **Important Concepts**

- Completion stored as 0 (pending) or 1 (completed)

### **Snippets**

#### **Adding a Habit**

```
printf("Enter habit name: ");
scanf("%s", habit);
```

```
fprintf(fp, "%s 0\n", habit); // 0 = Pending
```

#### **Mark Habit Completed**

```
completed[choice - 1] = 1;
```

---

```
fp = fopen("habits.txt", "w");
fprintf(fp, "%s %d\n", habits[i], completed[i]);
```

## # Health Module (health.c)

### Features

- Add daily health data
- View complete logs
- Show today's summary

### Important Concepts

- Uses system date (day, month, year)
- Tracks: *steps + calories*

### Snippets

#### Add Entry

```
printf("Enter steps walked: ");
scanf("%d", &steps);
```

```
printf("Enter calories consumed: ");
scanf("%d", &calories);
```

```
fprintf(fp, "%d %d %d %d %d\n", steps, calories, day,
month, year);
```

#### Daily Summary

```
if(day == cday && month == cmonth && year == cyear) {
    totalSteps += steps;
    totalCalories += calories;
}
```

---

## # Study Module (study.c)

### Features

- Add study session
- View study history
- Today's study summary

### Snippets

#### Add Study Session

```
printf("Enter subject: ");
scanf("%s", subject);
```

```
printf("Enter hours studied: ");
scanf("%d", &hours);
```

```
fprintf(fp, "%s %d %d %d %d\n", subject, hours, day,
month, year);
```

#### Today's Study Summary

```
if(day == cday && month == cmonth && year == cyear) {
    totalHours += hours;
}
```

---

## # Reminder Module (reminder.c)

### Features

- Add reminder
- View all reminders

### Important Concepts

- Stores: *Title | Date | Time*

### Snippets

#### Add Reminder

```
printf("Enter reminder title: ");
scanf(" %[^\n]s", title);
```

```
fprintf(fp, "%s | %s | %s\n", title, date, time);
```

#### View All Reminders

```
while (fgets(line, sizeof(line), fp)) {
    printf("%s", line);
}
```

## Testing & Results:

The program was tested with multiple inputs:

- Expense Module: Added expenses Viewed expense list Monthly summary generated correctly.

```
C:\Users\md ejaz>cd PLANNER

C:\Users\md ejaz\PLANNER>main

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 1

--- Expense Tracker ---
1. Add Expense
2. View Expenses
3. Monthly Summary
4. Back
Enter choice: 1
Enter expense name: food
Enter amount: 200
Expense added successfully!

--- Expense Tracker ---
1. Add Expense
2. View Expenses
3. Monthly Summary
4. Back
Enter choice: 2

--- All Expenses ---
food - ₹200.00 (Month: 11, Year: 2025)

--- Expense Tracker ---
1. Add Expense
2. View Expenses
3. Monthly Summary
4. Back
Enter choice: 3

===== Monthly Summary (11/2025) ====
Total expenses: ₹200.00

--- Expense Tracker ---
1. Add Expense
2. View Expenses
3. Monthly Summary
4. Back
Enter choice: 4

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: |
```

- Habit Module: Habits added Marked as completed  
Verified stored status.

```
===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 2

--- Habit Tracker ---
1. Add Habit
2. Mark Habit Completed
3. View All Habits
4. Back
Enter choice: 1
Enter habit name: Running
Habit added successfully!

--- Habit Tracker ---
1. Add Habit
2. Mark Habit Completed
3. View All Habits
4. Back
Enter choice: 2

--- Select Habit to Mark Completed ---
1. Running (Pending)
Enter number: 1
Habit marked as completed!

--- Habit Tracker ---
1. Add Habit
2. Mark Habit Completed
3. View All Habits
4. Back
Enter choice: 3

--- Habit List ---
Running - Completed

--- Habit Tracker ---
1. Add Habit
2. Mark Habit Completed
3. View All Habits
4. Back
Enter choice: 4

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: |
```

- Health Module: Steps & calories logged Full activity log printed.

```
===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 3

--- Health Tracker ---
1. Add Health Entry
2. View Health Log
3. Today's Summary
4. Back
Enter choice: 1
Enter steps walked: 8000
Enter calories consumed: 600
Health entry added successfully!

--- Health Tracker ---
1. Add Health Entry
2. View Health Log
3. Today's Summary
4. Back
Enter choice: 2

--- Health Log ---
Steps: 8000 | Calories: 600 | Date: 30-11-2025

--- Health Tracker ---
1. Add Health Entry
2. View Health Log
3. Today's Summary
4. Back
Enter choice: 3

--- Today's Summary ---
Total Steps: 8000
Total Calories: 600

--- Health Tracker ---
1. Add Health Entry
2. View Health Log
3. Today's Summary
4. Back
Enter choice: 4

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: |
```

- Study Module: Study hours added Daily study summary accurate.

```
===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 4

--- Study Tracker ---
1. Add Study Session
2. View Study Log
3. Today's Study Summary
4. Back
Enter choice: 1
Enter subject: C
Enter hours studied: 2
Study session added successfully!

--- Study Tracker ---
1. Add Study Session
2. View Study Log
3. Today's Study Summary
4. Back
Enter choice: 2

--- Study Log ---
Subject: C | Hours: 2 | Date: 30-11-2025

--- Study Tracker ---
1. Add Study Session
2. View Study Log
3. Today's Study Summary
4. Back
Enter choice: 3

--- Today's Study Summary ---
Total Hours Studied: 2

--- Study Tracker ---
1. Add Study Session
2. View Study Log
3. Today's Study Summary
4. Back
Enter choice: 4

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: |
```

- Reminder Module: Reminders created Displayed properly.

```
===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 5

--- Reminder System ---
1. Add Reminder
2. View All Reminders
3. Back
Enter choice: 1
Enter reminder title: project
Enter date (DD-MM-YYYY): 01-12-2025
Enter time (HH:MM): 2
Reminder added successfully!

--- Reminder System ---
1. Add Reminder
2. View All Reminders
3. Back
Enter choice: 2

--- Reminder List ---
project | 01-12-2025 | 2

--- Reminder System ---
1. Add Reminder
2. View All Reminders
3. Back
Enter choice: 3

===== PERSONAL LIFE MANAGEMENT SYSTEM =====
1. Expense Tracker
2. Habit Tracker
3. Health Tracker
4. Study Tracker
5. Reminder System
6. Exit
Enter your choice: 6
```

Program compiled using: gcc src/\*.c -I include -o main

## **Result:**

No crashes

All menus working File handling stable

## **Conclusion & Future Work:**

### **Conclusion:**

The system successfully integrates multiple productivity tools in one modular C program.

It demonstrates effective use of **file handling, functions, menus**, and **real-time date operations**.

### **Future Enhancements:**

- GUI-based PLANNER app
- Password-protected login
- Graphical statistics
- Cloud syncing

## **References:**

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