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UNIVERSITY INSTITUTE OF COMPUTING

Mini Project

Computer Programming

25CAH-101

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Introduction

The ***Student Result Management System*** is a simple C program designed to input, process, and display students' marks in multiple subjects. It calculates the total marks and average for each student and determines whether they have passed or failed based on the average score.

This project demonstrates the use of arrays, loops, conditional statements, and formatted input/output in C. It is suitable for beginners learning structured programming and data handling.

Objective

- To understand how to handle **arrays** (both one-dimensional and two-dimensional).
- To practice **input and output formatting** in C.
- To learn how to compute totals, averages, and conditional results.
- To implement a small-scale **data management system** using basic C constructs.

Source Code

```
#include <stdio.h>

int main() {

    int n, i, j;

    float marks[100][3];     // marks[i][j] stores marks of student i in subject j

    float total[100], avg[100];

    char name[100][50];


    printf("===== Student Result Management System =====\n\n");


    // Input number of students

    printf("Enter number of students: ");

    scanf("%d", &n);


    // Input student details

    for (i = 0; i < n; i++) {

        printf("\nEnter name of student %d: ", i + 1);

        scanf("%s", name[i]);

        total[i] = 0;

        // Input marks for 3 subjects
```

```
    for (j = 0; j < 3; j++) {
        printf("Enter marks in subject %d: ", j + 1);
        scanf("%f", &marks[i][j]);
        total[i] += marks[i][j]; // Calculate total
    }
    avg[i] = total[i] / 3.0; // Calculate average
}

// Display results
printf("\n\n===== Student Result Summary =====\n");
printf("-----------------------------------------------------------\n");
printf("Name\t\tSub1\tSub2\tSub3\tTotal\tAverage\tResult\n");
printf("-----------------------------------------------------------\n");

for (i = 0; i < n; i++) {
    printf("%-10s\t", name[i]);

    for (j = 0; j < 3; j++) {
        printf("%.1f\t", marks[i][j]);
    }

    // Determine pass/fail (Pass if avg >= 40)
```

```
        if (avg[i] >= 40)
            printf("%.1f\t%.1f\tPass\n", total[i], avg[i]);
        else
            printf("%.1f\t%.1f\tFail\n", total[i], avg[i]);
    }
    printf("-------------------------------------------------\n");
    return 0;
}
```

Sample Output

===== Student Result Management System =====

Enter number of students: 2

Enter name of student 1: Alice

Enter marks in subject 1: 78

Enter marks in subject 2: 85

Enter marks in subject 3: 90

Enter name of student 2: Bob

Enter marks in subject 1: 40

Enter marks in subject 2: 35

Enter marks in subject 3: 50

Output

```
===== Student Result Summary =====

------------------------------------------------------------

Name      Sub1   Sub2   Sub3   Total   Average Result

------------------------------------------------------------

Alice     78.0   85.0   90.0   253.0   84.3    Pass

Bob       40.0   35.0   50.0   125.0   41.7    Pass

------------------------------------------------------------
```

Conclusion

This project demonstrates how basic programming constructs in C can be combined to create a simple yet useful management tool. It reinforces concepts like arrays, loops, conditionals, and formatted printing — all of which are essential for developing more complex applications.

Possible future improvements:

- Storing data in a file for future access.
- Adding more subjects dynamically.
- Displaying top performers or ranking.

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References

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