



Project Report

On

Attendance Management System using C Programming Language

Course No: CSE 1210

Course Name: Computer Fundamentals and Programming Laboratory

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15 October 2023

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Problem Statement

Develop a C programming project or problem solution system as a beginner to gain more C programming skills using the following open-ended features:

Open-ended features:

1. You should use at least **two** user-defined functions with “call by value” and “call by reference”.
2. You should use at least **one** array and **one** string in the whole project.
3. The project should have at least **one** if-else statement and **one** loop statement.
4. You should use ‘FILE’ to save and update data.
5. You also may choose any data types, operators, and expressions.

Result analysis:

1. Analyze the time required to complete the whole project.
2. Did you observe any invalid input or any error during run-time?

Evaluation

Open-ended features	Remarks
user-defined functions	
array and string	
if-else statement and loop statement.	
use of ‘FILE’	

	Excellent	Above Average	Average	Below Average	Marks (10)
Organization/Presentation					
Necessary data presentation					
Result Analysis					
Conclusion					

Signature of Examiner

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1. Introduction

With this management system we can have students data of attendance for every course and also for every date.

1.1. Motivation and Background

Attendance management is a very important task for teachers, students and institutions to have a record of attendance for every student. With our management system teachers and students can see the attendance of individual students or can see the attendance of a whole class on a particular date.

1.2. Objectives

Creating an attendance management system. To help students and teachers to have track record of attendance.

2. Current works

Currently we can add a student, add attendance details for a student in terms of individual course like- there will be 5 course to input, we can add how many total classes were taken and the total number of classes by the student. Plus, we can update a student's data by searching using their roll number. We can also search for a specific roll number and can see attendance details. There is also a roll call system, where we will input the date for attendance, number of students, their name, roll and their attendance state (whether present or absent). We also can search by date to watch the attendance state of the whole class on that date.

3. Methodology

After running the program, we can see a title “***** Attendance Management System *****”. After that this will display the menu with different choices, like- “Add Student”, “Search student”, “Roll Call” etc. Then we will take input from the user to enter a number according to their choice.

If they enter 1, that means it will call a function named “addStudent” which will help them to add details for a new student. It will ask for the name, roll number, course name, total number of classes for the course and total number of classes attended by the student. Everything will be saved in a file named “attendance.txt”.

Similarly, if the user enters 2, it will help them to search for a student by his/her roll number. It will ask for the roll number, and upon entering the roll number it will then read the data for that roll number from the “attendance.txt” file and then will display that on the window.

Finally, we can exit the program by entering 6 as choice. We will also return to the main menu after the completion of every choice.

3.2 Hardware and Software Requirements

Any 64-bit computer can handle this program.

4. Implementation and Testing

After the successful completion of the program, we can see a list of menus. We were able to input our choices to perform required tasks. Our menu system worked perfectly. Then we entered our desired choice and according to that, our code worked perfectly. We were able to add a student, search for a student using roll or date. We were also able to update a student's information using their roll number. Our code was running perfectly without any errors. Our program is very efficient and there is no delay in loading time.

4.1 Sample Code

```
void takeRollCall(struct students* students, int numStudents, char* date) {
    FILE* file = fopen("attendance_records.txt", "a");
    if (file == NULL) {
        printf("Unable to open the attendance records file.\n");
        return;
    }

    fprintf(file, "Date: %s\n", date);

    for (int i = 0; i < numStudents; i++) {
        printf("Is student with roll number %d present? (Y/N): ", students[i].nums);
        char answer[2];
        scanf("%s", answer);

        if (strcmp(answer, "Y") == 0 || strcmp(answer, "y") == 0) {
            printf("%s is present\n", students[i].names);
            fprintf(file, "%d p\n", students[i].nums);
        } else {
            printf("%s is absent\n", students[i].names);
            fprintf(file, "%d a\n", students[i].nums);
        }
    }

    fclose(file);
}
```

4.2 Sample Input Output

```
***** Attendance Management System *****
1. Add Student
2. Search Student by Roll Number
3. Update Student by Roll Number
4. Take Roll Call
5. Search Attendance by Date
6. Exit
Enter your choice: 5

Enter the date (format: DD-MM-YYYY): 12-10-2023
Search attendance by date...
Date: 12-10-2023
Attendance records for the date: 12-10-2023
Roll Number: 23 | Status: p
Roll Number: 24 | Status: p
Roll Number: 22 | Status: a
Roll Number: 22 | Status: a
Roll Number: 1 | Status: p
Roll Number: 2 | Status: p
Roll Number: 3 | Status: p
Roll Number: 4 | Status: a
Roll Number: 5 | Status: p
Roll Number: 12 | Status: a
Roll Number: 13 | Status: p
Roll Number: 34 | Status: p
Roll Number: 33 | Status: p
Roll Number: 33 | Status: p
Roll Number: 42 | Status: p
Roll Number: 44 | Status: p
Roll Number: 52 | Status: p
Roll Number: 50 | Status: p
Roll Number: 25 | Status: a
Roll Number: 25 | Status: a
Roll Number: 32 | Status: p
Roll Number: 43 | Status: a
Roll Number: 54 | Status: a
```

5. Conclusion

We built an attendance management system using C programming language. We were able to perform the asked tasks by the instructor and our management system works flawlessly. It took us 2 weeks to complete this project.

5.1 Future work

In future we will try to make the system automatic, so we don't have to insert the dates manually. We can have a different menu window for teachers and students. We will add nice graphics and make a new and responsive interface to make it more user friendly.

References

- [1] Programming in ANSI C
- [2] <https://www.geeksforgeeks.org/>
- [3] <https://stackoverflow.com/>