Creating Structures for Storing Employee Information

GROUP-19

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Abstract – **To create an array of the structure for storing and retrieving information of various data types of a large number of individuals. There is a structure called employee that hold information like employee code, name, date of joining. Write a program to create an array of the structure and enter some data into it. Then ask the user to enter current date. Display the names of those employees whose tenure is 3 or more than 3 years according to the given current date.**

I.   INTRODUCTION

Arrays allow to define type of variables that can hold several data items of the same kind. Similarly, structure is another user defined data type available in C that allows to combine data items of different kinds. To access any member of a structure, we use the **member access operator (.)**. The member access operator is coded as a period between the structure variable name and the structure member that we wish to access. You would use the keyword **struct** to define variables of structure type.

Structure is a user-defined datatype in C language which allows us to combine data of different types together. Structure helps to construct a complex data type which is more meaningful. It is somewhat similar to an array, but an array holds data of similar type only. But structure on the other hand, can store data of any type, which is practical more useful. Structures are used to represent a record. To define a structure, you must use the struct statement. The structure tag is optional and each member definition is a normal variable definition, such as int i; or float f.

II.ALGORITHM AND APPROACH

In order to solve this problem, we have worked out the following approach required for creating an array of structure and storing information and accessing it when required.

First, we would include a header file named stdio.h so that the compiler gets to know about the keywords used to code the programme. Then after using the main function, we would declare the structure using struct function using employee as structure tag. Then after inside the structure tag we would declare the employee code, name, date of joining using int and char functions.

After that we will be declaring the name of the structure that is all, where we would declare by writing it as all[10]. Now, we will input the data of the employees using struct employee function and naming the employees as e1, e2, e3, e4, e5, e6, e7, e8, e9 and e10. As, we know that all[0] = e1, similarly all[1]=e2, and so on till all[9]=e10. Then after we would declare variables date, month and year to ask the user to input the current date in dd mm yyyy format using scanf statements.

Now, to filter the required data of the employee structure, to get to know about the names of those employees whose tenure is 3 or more than 3 years according to the given current date, we would use for loops, where i =0 is used as initialisation and i<10 is used as condition for the loop, also i++ is used as change. Now inside this for loop we will be using if else statements for retrieving the required information of the employees. The condition for the if statement will be that if the difference between the input year and 3 is greater than the year of joining of the employee

(all[i].year, which represents year of joining the employee), then the information of that employee is required by the user hence will be printed as an output.

Now if the year of joining of the employee is equal to the (input year-3) then we will check for the month by again using the if else statement and the condition used will be that, if the month of joining of the employee is less than the input month by the user then the information of that employee will be required by the user as this employee has completed the tenure of 3 years and hence it will be printed on the output screen.

Now if the month of joining of the employee is equal to the month which the user has input, then we will check for the date by again using the if else statement and condition used will be, that if the date of joining is less or equal to the input date by the user then the data of that employee is required by the user and hence will be printed on output screen.
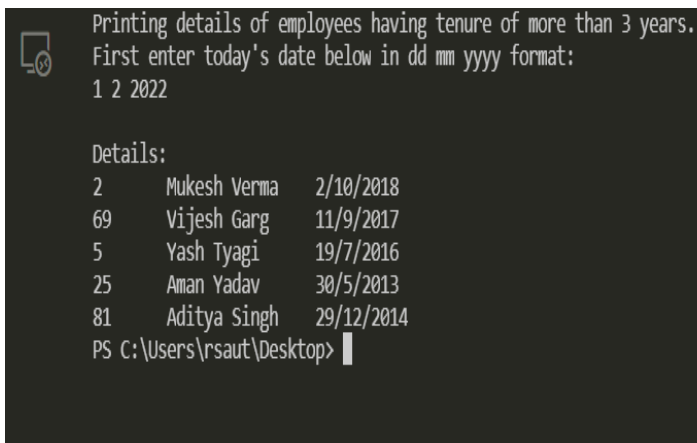
III.CONCLUSION

In order to solve the given problem, we made a program to make an array of structure for storing the employee information like employee code, name and date of joining, so that the user is able to retrieve any particular information from the huge amount of data of various employees. In this problem, we made a program so that the user is able to know about those employees who have completed their tenure of 3 years or more after input of the current date. And as a result, the required employee information gets printed on the output screen. Therefore, this program proves to be quite helpful for users.

IV. ACKNOWLEDGEMENT

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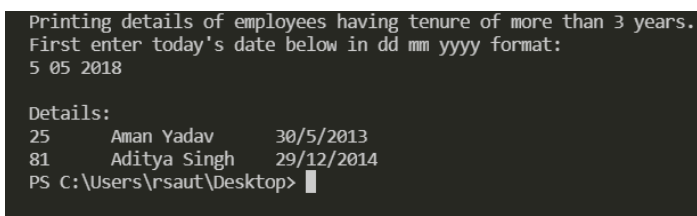
V. OUTPUT

It can be seen from the above picture that after entering the current date that is 01/02/2022, the details of all the employees whose tenure of 3 years or more has been completed has been displayed on the output screen.

Similarly, we have also found for date 05/05/2018.

VI. REFERENCES

- https://www.geeksforgeeks.org
- https://www.codescracker.com

VII. APPENDIX

```c
#include<stdio.h>

struct employee {
    int code;
    char name[30];
    int date;
    int month;
    int year;
} all[10];

int main(){

    // adding random employee data
    struct employee e1={
        1, "Rajesh Sharma", 20, 4, 2019
    };
    struct employee e2={
        2, "Mukesh Verma", 2, 10, 2018
    };
    struct employee e3={
        69, "Vijesh Garg", 11, 9, 2017
    };
    struct employee e4={
        42, "Sukesh Mehta", 26, 11, 2020
    };
    struct employee e5={
        92, "Ramesh Tiwari",25, 1, 2021
    };
    struct employee e6={
        5, "Yash Tyagi",19, 7, 2016
    };
     struct employee e7={
        25, "Aman Yadav",30, 5, 2013
    };
     struct employee e8={
        81, "Aditya Singh",29, 12, 2014
    };
     struct employee e9={
        55, "Ayush Kapoor",1, 2, 2022
    };
     struct employee e10={
        38, "Shubham Gupta",17, 8, 2020
    };

    all[0] = e1; all[5] = e6;
    all[1] = e2; all[6] = e7;
    all[2] = e3; all[7] = e8;
    all[3] = e4; all[8] = e9;
    all[4] = e5; all[9] = e10;
```

```c
    printf("Printing details of employees having tenure of more than 3 years.\nFirst enter
today's date below in dd mm yyyy format:\n");

    //getting current year

    int year=2022, date=3, month = 2;

    scanf("%d %d %d", &date, &month, &year);
    printf("\nDetails:\n");


    //filtering employees

    for(int i=0; i<10; i++){

        if(all[i].year<year-3){

            printf("%d\t%s\t%d/%d/%d\n", all[i].code, all[i].name, all[i].date,
all[i].month, all[i].year);

        } else if (all[i].year==year-3){

            if(all[i].month<month){

                printf("%d\t%s\t%d/%d/%d\n", all[i].code, all[i].name, all[i].date,
all[i].month, all[i].year);

            } else if(all[i].month == month){

                if (all[i].date <= date){

                    printf("%d\t%s\t%d/%d/%d\n", all[i].code, all[i].name, all[i].date,
all[i].month, all[i].year);
                }
            }
        }
    }

    return 0;
}
```