

NAME :- KALPESH KISAN NAIK
DIV :- D4B

ROLL NO :. 29
DATE :- 07/11/2023

Program Objective : - Define a structure called VISA Applicant for a country that will describe the following information: Applicant's Name, Date-of-Birth, Citizenship of Country Name, Passport Number, Date of Issue for Passport, Date of Expiry and Address.

Program Description : - Structure is used with various data types to store and print the required information.

```
#include <stdio.h>
#include <stdlib.h>

struct VISAAplicant
{
    char name[50];
    int dateofBirth;
    char citizenship[50];
    int passportNumber;
    int dateofIssue;
    int dateofExpiry;
    char address[110];
};

int main() {
    struct VISAAplicant applicant;

    printf("Enter Applicant's Name: ");
    scanf("%s", applicant.name);

    printf("Enter Date of Birth (YYYYMMDD): ");
    scanf("%d", &applicant.dateofBirth);

    printf("Enter Citizenship: ");
    scanf("%s", applicant.citizenship);

    printf("Enter Passport Number: ");
    scanf("%d", &applicant.passportNumber);

    printf("Enter Date of Issue for Passport (YYYYMMDD): ");
    scanf("%d", &applicant.dateofIssue);

    printf("Enter Date of Expiry for Passport (YYYYMMDD): ");
    scanf("%d", &applicant.dateofExpiry);

    printf("Enter Address: ");
    scanf("%s", applicant.address);

    printf("\nInformation of Applicant:\n");
    printf("Name: %s\n", applicant.name);
    printf("Date of Birth: %d\n", applicant.dateofBirth);
    printf("Citizenship: %s\n", applicant.citizenship);
    printf("Passport Number: %d\n", applicant.passportNumber);
    printf("Date of Issue for Passport: %d\n", applicant.dateofIssue);
    printf("Date of Expiry for Passport: %d\n", applicant.dateofExpiry);
    printf("Address: %s\n", applicant.address); return 0;
}
```

```
Enter Applicant's Name: KALPESH
Enter Date of Birth (YYYYMMDD): 15072005
Enter Citizenship: TES
Enter Passport Number: 2424244
Enter Date of Issue for Passport (YYYYMMDD): 23112023
Enter Date of Expiry for Passport (YYYYMMDD): 2324233
Enter Address: JKSKDHFONNN
Information of Applicant:
Name: KALPESH
Date of Birth: 15072005
Citizenship: TES
Passport Number: 2424244
Date of Issue for Passport: 23112023
Date of Expiry for Passport: 2324233
Address: JKSKDHFONNN
```

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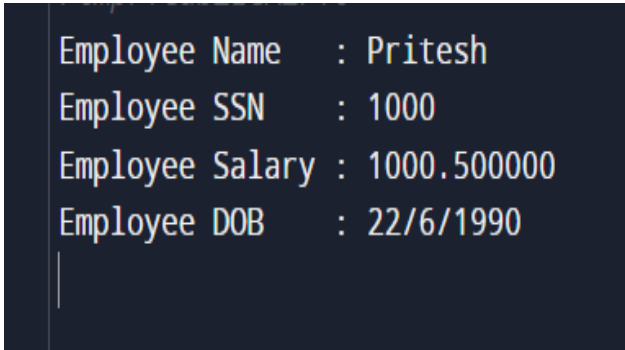
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Program Description : - Here a structure is defined inside another structure.

```
#include <stdio.h>

struct Employee
{
    char ename[20];
    int id;
    float salary;
    struct date
    {
        int date;
        int month;
        int year;
    }doj;
}emp = {"Pritesh",1000,1000.50,{22,6,1990}};

int main()
{
    printf("\nEmployee Name   : %s",emp.ename);
    printf("\nEmployee SSN    : %d",emp.id);
    printf("\nEmployee Salary : %f",emp.salary);
    printf("\nEmployee DOB     : %d/%d/%d\n", \
        emp.doj.date,emp.doj.month,emp.doj.year);
    return 0;
}
```

A screenshot of a terminal window with a dark background and light-colored text. It displays the output of the C program, showing employee details for Pritesh. The output is formatted with labels and values separated by colons.

```
Employee Name   : Pritesh
Employee SSN    : 1000
Employee Salary : 1000.500000
Employee DOB    : 22/6/1990
```

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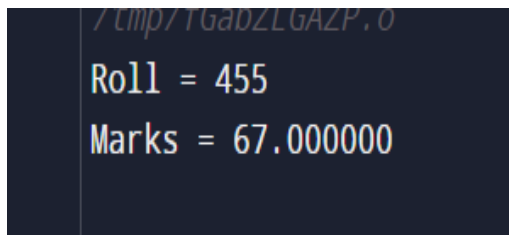
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Program Objective : - Union

Program Description : - Union in C is a special data type available in C that allows storing different data types in the same memory location.

```
#include <stdio.h>
```

```
int main() {  
    union student {  
        int roll;  
        float marks;  
    };  
    union student st;  
  
    st.roll = 455;  
    printf("Roll = %d\n", st.roll);  
  
    st.marks = 67;  
    printf("Marks = %f\n", st.marks);  
  
    return 0;  
}
```



```
/tmp/7GadZLGaZP.o  
Roll = 455  
Marks = 67.000000
```

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Program Objective : - Structure to Function

Program Description : - The display function returns a structure of type struct employee

```
#include <stdio.h>
#include <conio.h>

struct employee
{
    char name[20];
    int id;
    float salary;
};

void display(struct employee e){
    printf("\nName: %s\n", e.name);
    printf("Employee ID: %d\n",e.id);
    printf("Salary: %.1f\n",e.salary);
}

void main(){

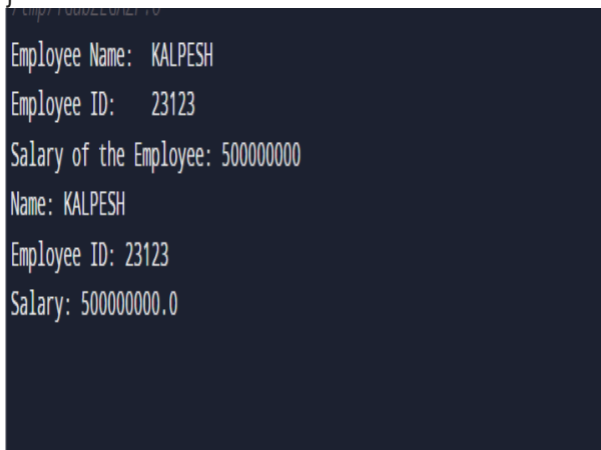
    struct employee emp;

    printf("Employee Name:\t");
    scanf("%s",emp.name);

    printf("Employee ID:\t");
    scanf("%d",&emp.id);

    printf("Salary of the Employee:\t");
    scanf("%f",&emp.salary);

    display(emp);
}
```

A screenshot of a terminal window showing the output of the C program. The output consists of three lines of formatted text: 'Employee Name: KALPESH', 'Employee ID: 23123', and 'Salary of the Employee: 500000000'. Below these, there are three more lines of text: 'Name: KALPESH', 'Employee ID: 23123', and 'Salary: 500000000.0', which are the results of the display function call.

```
Employee Name: KALPESH
Employee ID: 23123
Salary of the Employee: 500000000
Name: KALPESH
Employee ID: 23123
Salary: 500000000.0
```

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Program Objective : - Array to structure

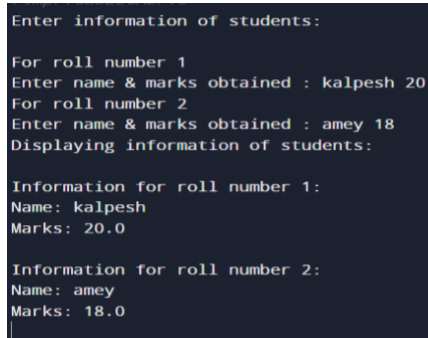
Program Description : - This program collects and displays information for a fixed number of students. It uses a structure to store student data, including name, roll number, and marks. Users input student details, and the program then displays the information in an organized format.

```
#include <stdio.h>
#define B 2

struct student {
    char name[50];
    int roll;
    float marks;
};

int main() {
    struct student s[B];
    printf("Enter information of students:\n");
    for(int i=0; i<B; ++i) {
        s[i].roll = i+1;
        printf("\nFor roll number %d\nEnter name & marks obtained : ", s[i].roll);
        scanf("%49s%f", s[i].name, &s[i].marks);
    }

    printf("\nDisplaying information of students:\n");
    for(int i=0; i<B; ++i) {
        printf("\nInformation for roll number %d:\nName: %s\nMarks: %.1f\n", s[i].roll, s[i].name, s[i].marks);
    }
    return 0;
}
```

A screenshot of a terminal window showing the output of the C program. The text is as follows:

```
Enter information of students:

For roll number 1
Enter name & marks obtained : kalpesh 20
For roll number 2
Enter name & marks obtained : amey 18
Displaying information of students:

Information for roll number 1:
Name: kalpesh
Marks: 20.0

Information for roll number 2:
Name: amey
Marks: 18.0
|
```

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Program Objective : - Array Structure to pointer
Program Description : - Adding two numbers

```
#include <stdio.h>

struct Example {
    int num1;
    int num2;
} s[3];

void accept(struct Example sptr[], int n) {
    for (int i = 0; i < n; i++) {
        printf("\nEnter num1: ");
        scanf("%d", &sptr[i].num1);
        printf("Enter num2: ");
        scanf("%d", &sptr[i].num2);
    }
}

void print(struct Example sptr[], int n) {
    for (int i = 0; i < n; i++) {
        printf("\nNum1: %d", sptr[i].num1);
        printf("\nNum2: %d", sptr[i].num2);
        printf("\nSum: %d\n", sptr[i].num2 + sptr[i].num1);
    }
}

int main() {
    accept(s, 3);
    print(s, 3);
    return 0;
}
```

```
Enter num1: 2
Enter num2: 2
Enter num1: 1
Enter num2: 2
Enter num1: 1
Enter num2: 2
Num1: 2
Num2: 2
Sum: 4

Num1: 1
Num2: 2
Sum: 3

Num1: 1
Num2: 2
Sum: 3
|
```

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Program Objective : - Pointer function to Structure

Program Description : - Information scanned and salary increased

```
#include <stdio.h>
```

```
struct employee
```

```
{  
    char name[20];  
    int id;  
    float salary;  
};
```

```
void display(struct employee e){  
    printf("Name: %s\n", e.name);  
    printf("Employee id%d\n",e.id);  
    printf("Salary: %.1f\n",e.salary);  
}
```

```
void increaseSalary(struct employee *ee){  
    ee->salary=ee->salary+1000;  
}
```

```
void main(){
```

```
    struct employee emp;
```

```
    printf("Employee Name:\t");  
    scanf("%s",emp.name);
```

```
    printf("Employee id:\t");  
    scanf("%d",&emp.id);
```

```
    printf("Salary of the Employee:\t");  
    scanf("%f",&emp.salary);  
    increaseSalary(&emp);  
    display(emp);
```

```
}
```

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```
Employee Name: kalpesh  
Employee id: 23123  
Salary of the Employee: 5000000  
Name: kalpesh  
Employee id23123  
Salary: 5001000.0  
|
```