Nested Structure

● Nested structure in C is nothing but structure within structure. One structure can be declared inside other structure as we declare structure members inside a structure.

● The structure variables can be a normal structure variable or a pointer variable to access the data.

SYNTAX:

The structure can be nested in the following ways.

1. By separate structure
2. By Embedded structure

1) Separate structure

Here, we create two structures, but the dependent structure should be used inside the main structure as a member. Consider the following example.

```
struct Date

{

   int dd;

   int mm;

   int yyyy;

};

struct Employee

{

   int id;

   char name[20];

   struct Date doj;

}emp1;
```

The embedded structure enables us to declare the structure inside the structure. Hence, it requires less line of codes but it can not be used in multiple data structures. Consider the following example.

struct Employee

{

  int id;

  char name[20];

  struct Date

  {

   int dd;

   int mm;

   int yyyy;

  }doj;

}emp1;

Structure within structure in C using normal variable:

- This program explains how to use structure within structure in C using normal variable. "student_college_detail' structure is declared inside "student_detail" structure in this program. Both structure variables are normal structure variables.
- Please note that members of "student_college_detail" structure are accessed by 2 dot(.) operator and members of "student_detail" structure are accessed by single dot(.) operator.

#include <stdio.h>

#include <string.h>

#include <conio.h>

struct student_college_detail

```c
{
    int college_id;
    char college_name[50];
};

struct student_detail
{
    int id;
    char name[20];
    float percentage;
    // structure within structure
    struct student_college_detail clg_data;
}stu_data;

void main()
{
    struct student_detail  stu_data;
    printf("Enter class Id");
    scanf("%d",&stu_data.id);
    printf("Enter the student Name");
    scanf("%s",&stu_data.name);
    printf("Enter the percentage of student");
    scanf("%f",&stu_data.percentage);
    printf("Enter the College Id");
```

```c
    scanf("%d", &stu_data.clg_data.college_id);

     printf("Enter the College Name");

    scanf("%s", &stu_data.clg_data.college_name);

    printf(" Id is: %d \n", stu_data.id);

    printf(" Name is: %s \n", stu_data.name);

    printf(" Percentage is: %f \n\n", stu_data.percentage);

    printf(" College Id is: %d \n",stu_data.clg_data.college_id);

    printf(" College Name is: %s \n",stu_data.clg_data.college_name);

    getch();
}
```