*LECTURE NOTE 25*

# NESTED STRUCTURES

The structure that contains another structure as its members is called a nested structure or a structure within a structure is called nested structure. The structure should be declared separately and then be grouped into high level structure.

1. Write a program to read and display the information of all the students in the class using nested structure.

**Passing Structures through pointers**

Pointer to a structure is a variable that holds the address of a structure. The syntax to declare pointer to a structure can be given as:

*strcut struct_name *ptr;*

To assign address of stud to the pointer using address operator(&) we would write

*ptr_stud=&stud;*

To access the members of the structure (->) operator is used.

for example

*Ptr_stud->name=Raj;*

**SELF REFERENTIAL STRUCTURE**

Self –referential structures are those structures that contain a reference to data of its same type as that of structure.

Example

*struct node*

*{*

*int val;*

*struct node*next;*

***};***

**Pointers to Structures**

You can define pointers to structures in very similar way as you define pointer to any other variable as follows:

*struct books *struct_pointer;*

Now, you can store the address of a structure variable in the above defined pointer variable. To find the address of a structure variable, place the & operator before the structure's name as follows:

*struct_pointer = &book1;*

To access the members of a structure using a pointer to that structure, you must use the -> operator as follows:

*struct_pointer->title;*

1 .Write a program to display, add and subtract two time defined using hour, minutes and values of seconds.

2. Write a program, using pointer to structure, to initialize the members in the structure. Use functions to print the students information.

3. Write a program using an array of pointers to a structure to read and display the data of a student.