MODULE 3

LECTURE NOTE 24

STRUCTURE AND UNION

Definition

A Structure is a user defined data type that can store related information together. The variable within a structure are of different data types and each has a name that is used to select it from the structure. C arrays allow you to define type of variables that can hold several data items of the same kind but **structure** is another user defined data type available in C programming, which allows you to combine data items of different kinds.

Structures are used to represent a record, Suppose you want to keep track of your books in a library. You might want to track the following attributes about each book:

- Title
- Author
- Subject
- Book ID

Structure Declaration

It is declared using a keyword struct followed by the name of the structure. The variables of the structure are declared within the structure.

Example:

```
Struct struct-name
    {
        data_type var-name;

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    };
```

Structure Initialization

Assigning constants to the members of the structure is called initializing of structure.
Syntax:

```
struct struct_name
{
    data _type member_name1;
    data _type member_name2;
} struct_var={constant1,constant2};
```

Accessing the Members of a structure

A structure member variable is generally accessed using a '.' operator.

Syntax: *strcut_var.*

member_name;

The dot operator is used to select a particular member of the structure. To assign value to the individual

Data members of the structure variable stud, we write,

```
stud.roll=01;
stud.name="Rahul";
```

To input values for data members of the structure variable stud, can be written as,

```
scanf("%d",&stud.roll);
scanf(''%s",&stud.name);
```

To print the values of structure variable stud, can be written as:

```
printf("%s",stud.roll);
printf("%f",stud.name);
```

QUESTIONS

1. Write a program using structures to read and display the information about an employee.
2. Write a program to read, display, add and subtract two complex numbers.
3. Write a program to enter two points and then calculate the distance between them.