PGDCA - First Semester
Subject Name- "Programming in C"
Paper-PGDCA-103 (Structure and Union)

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Unit- IV: **Structure and Union**

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Objective

Describe the Structure and its Uses

Describe the Union and its Uses

 Difference between Structure and Union

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Structure

What is Structure?

- It is a derived data type that is a collection of different data type.
- It contain various information of various types of data.

A structure makes a data type that can be used to group items of possibly different types into a single type.

Structures are used to represent a record in C language.

"struct" keyword is used to create a structure.

```
Keyword ─────►  struct structure_name  ◄───── User define
                                                structure name
                {
                    data_type struct_member1;
                    data_type struct_member1;
                    .
                    .
                    data_type struct_memberN;
                };
```

Structure members

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Declaring Structure Variable

A structure variable can be declared with structure declaration.

```
struct structure_name
{
    data_type struct_member1;
    data_type struct_member1;
    .
    .
    data_type struct_memberN;
}var1,var2;
```
← **Structure Variable**

   OR

```
main()
{
    struct structure_name var1,var2;
}
```

- A structure variable can also be declare like primary types.

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Structure : Example

```
 struct employee
{    int eid;
     char ename[20];
     float salary;
}e1,e2;


struct student
{
     char stud_name[15];
     char class[10];
     int rollno;
}s1,s2;
```

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Initializing Structure members

- Structure members **cannot be** initialized with declaration. For example the following C program fails in compilation.

struct Student

{

int rollno = 10; // COMPILER ERROR: cannot initialize members here

};

- It can be initialized only with the help of structure variable.

- The following C program will initialized the structure members in main function using structure variable.

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Accessing Structure members

- Structure members can be accessed using dot (.) operator.

```
uct person

int pid;
char pname[15];

d main()

struct person p1 = {11, 'ramesh'};
   // Accessing members of person
 printf ("\n pid = %d \n person name = %d", p1.pid, p1.pname);
```

Output:

C:\Users\HP\Documents\structure1.exe

```
pid = 11
person name = 6487604
-------------------------------
ocess exited after 0.1285 seconds with return value 34
ess any key to continue . . .
```

```c
lude<stdio.h>
ct student
{
    int rn;
    char nam[15];
    char cls[20];
}
main()
{
ct student s1;
printf("\n enter roll no of student :");
scanf("%d",&s1.rn);
printf("\n enter name of student :");
scanf("%s",&s1.nam);
printf("\n enter class name of student :");
scanf("%s",&s1.cls);
printf("\n\n student details:\n");
printf("\n roll no: %d",s1.rn);
printf("\n name : %s",s1.nam);
printf("\n class : %s",s1.cls);
```

Output:

```
enter roll no of student :98726

enter name of student :rohan

enter class name of student :pgdca


student details:

roll no: 98726
name : rohan
class : pgdca
--------------------------------
Process exited after 20.82 seconds with return value 15
Press any key to continue . . . _
```

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Array of Structure

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