

# USING STRUCTURE

## Structure

it can contain different type of data items.

### Syntax to declare

```
struct structure name{
```

```
type variable1;
```

```
type variable2; .....
```

```
};
```

## Example

```
struct Student {  
    int rollno;  
    char name[30];  
    int mark[4];  
    int total;  
    char result[30];  
};
```

## How to access a structure

```
Student s;  
scanf("%d", &s.rollno);  
scanf("%s", s.name);  
for(int i=0; i<4; i++)  
    scanf("%d", &s.mark[i]);
```

# How to access structure by pointer

```
Student s; Student *p = &s;  
scanf("%d", &p->rollno);  
scanf("%s", p->name);  
for(int i=0; i<4; i++)  
    scanf("%d", &p->mark[i]);
```

# Finding Result of List of Students

```
#include <stdio.h>
#include <string.h>
struct Student {
    int rollno;
    char name[30];
    int mark[4];
    int total;
    char result[30];
};

void displayHeading();
void getData(Student*);
void displayResult(Student*);
void calculateResult(Student*);
```

# Finding Result of List of Students

```
int main()
{
    Student st[100];
    int n;
    printf("How many students: ");
    scanf("%d", &n);

    for (int i = 0; i < n; i++){
        getData(&st[i]);
        calculateResult(&st[i]);
    }
    displayHeading();
    for (int i = 0; i < n; i++)
        displayResult(&st[i]);

    return 0;
}
```

```
void getData(Student *s)
{
    printf("Enter Roll No: ");
    scanf("%d", &s->rollno);
    printf("Enter Name: ");
    scanf("%s", s->name);
    printf("Enter Marks in 4 Papers: ");
    for(int i=0; i<4; i++)
        scanf("%d", &s->mark[i]);
}
```

```
void calculateResult(Student *s)
{
    s->total = s->mark[0] + s->mark[1] + s->mark[2] + s->mark[3];
    float avg = s->total / 4.0;
    if ((s->mark[0] < 35) || (s->mark[1] < 35) ||
        (s->mark[2] < 35) || (s->mark[3] < 35))
        strcpy(s->result, "Fail");
    else if(avg>60)strcpy(s->result, "First Class");
    else if(avg>50) strcpy(s->result, "Second Class");
    else strcpy(s->result, "Third Class");
}
```

```
void displayResult(Student *s)
{
    printf("\n%d\t\t%s\t\t%d\t\t%d\t\t%d\t\t%d\t\t%d\t\t%s",
s->rollno, s->name,
s->mark[0], s->mark[1], s->mark[2], s->mark[3],
s->total, s->result);
}
```

```
void displayHeading()
{
    printf("\nRollNo\t\tName\t\t
Paper1\tPaper2\tPaper3\tPaper4\t
Total\tResult\t");
}
```