

C-112 \Rightarrow array of structures in C

```
struct student
```

```
{
```

```
    int rollno;
```

```
    char name[20];
```

```
    float marks;
```

```
}
```

```
struct student s1, s2;
```

Numbers of structure

object/variables of structure

* s1, s2 we have taken for student 1 and student 2; but when there are 60 students ~~we~~ it will not be worthy to create 60 variables for each students which leads our problem complex and lengthy.

* one fine solution to overcome this problem is to use array of structures.

Ex: struct student
{

int rollno;

char name[20];

float marks;

};

struct student S[60]; → array of structures.

* How you can access these structure members, how to initialize, access and print how memory is allocated for array of structures?

Ex:- struct student
{

int rollno;

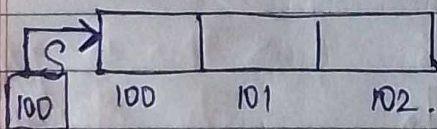
char name[20];

float marks;

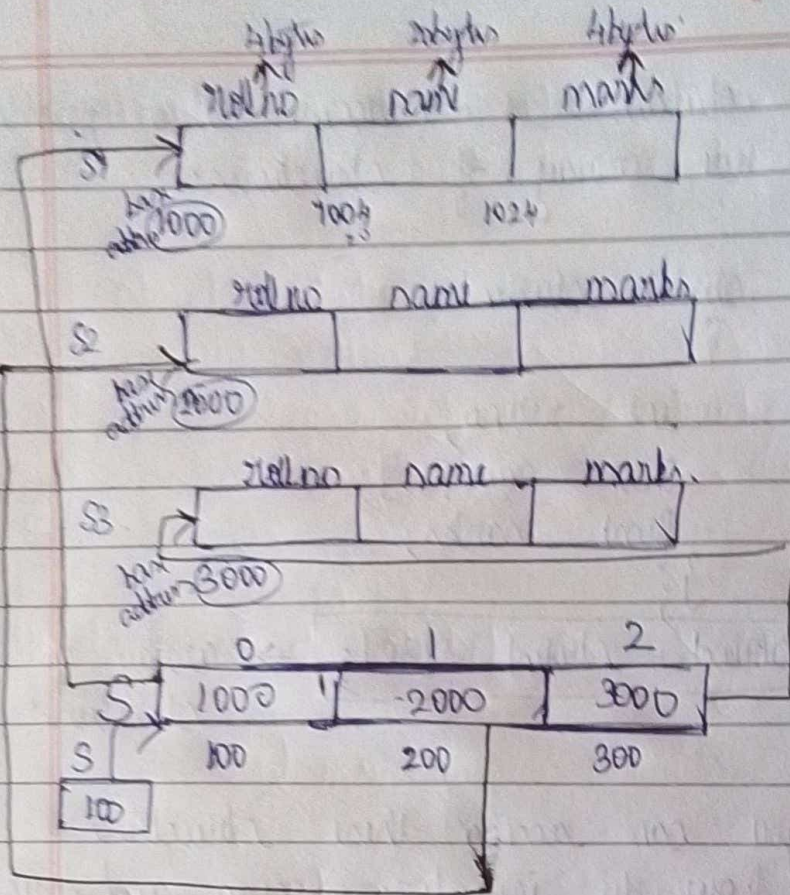
};

struct student S[3]; → array of structure

with 3 ~~elements~~ structure objects



* Each array element contains each structure object and each structure object contains information of members of structure.



$S[0].rollno;$ $S[1].rollno;$ $S[2].rollno;$
 $S[0].name;$ $S[1].name;$ $S[2].name;$
 $S[0].marks;$ $S[1].marks;$ $S[2].marks;$

Ex:

```

struct student
{
    int rollno;
    char name[20];
    float marks;
};

```

```

void main()
{

```

```

    struct student S[3];
    for(i=0; i<3; i++)
    {

```

```

        scanf("%d %s %f", &S[i].rollno, S[i].name,
                &S[i].marks);
    }

```

```

    for(i=0; i<3; i++)
        printf("%d %s %f", S[i].rollno, S[i].name, S[i].marks);
}

```


Program:

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
struct student
```

```
{
```

```
    int rollno;
```

```
    char name[20];
```

```
    float marks;
```

```
};
```

```
void main()
```

```
{    int i;
```

```
    struct student S[3];
```

```
    for(i=0; i<3; i++)
```

```
    {
```

```
        printf("Enter student details S[%d]\n", i);
```

```
        scanf("%d %s %f", &S[i].rollno, S[i].name,
```

```
              &S[i].marks);
```

```
    }
```

```
    for(i=0; i<3; i++)
```

```
    {
```

```
        printf("Information of student details S[%d]\n", i);
```

```
        printf("%d %s %f", S[i].rollno, S[i].name,
```

```
              S[i].marks);
```

```
    }
```

```
}
```

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  /** 13-ARRAY OF STRUCTURES **/
4  struct student
5  {
6      int rollno;
7      char name[20];
8      float marks;
9  };
10 int main()
11 {
12     struct student s[3];
13     int i;
14     for(i=0;i<3;i++)
15     {
16         printf("Enter student details of s[%d]\n",i);
17         scanf("%d %s %f",&s[i].rollno,s[i].name,&s[i].marks);
18     }
19     for(i=0;i<3;i++)
20     {
21         printf("\nStudent details of s[%d]\n",i);
22         printf("%d %s %0.2f",s[i].rollno,s[i].name,s[i].marks);
23     }
24     getch();
25 }
26

```

```

"D:\1. C C++\NOTEBOOK\C LANGUAGE\C PROGRAMS\PART 5_Jennys Lectures\PART 8_JENNYS LECTURE_STRUCTURES\13_ARR...
Enter student details of s[0]
1
Jayanthi
99
Enter student details of s[1]
2
Jenny
98
Enter student details of s[2]
3
JagaPriya
100

Student details of s[0]
1 Jayanthi 99.00
Student details of s[1]
2 Jenny 98.00
Student details of s[2]
3 JagaPriya 100.00

```