

C-113 ⇒ Pointer to Structure in C (or) Structure Pointer

main defined datatype of structure student

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

structure members with different datatypes. not variables.

data type

```
struct Student S; → global declaration
```

void main()

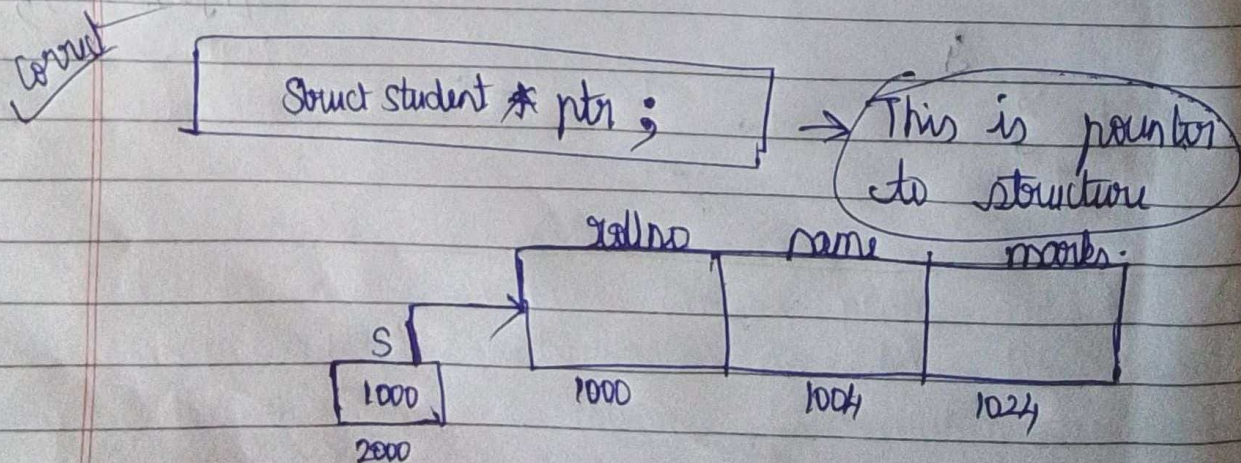
```
{
    int a;
    int *ptr = &a;
```

ptr is pointer variable which store address of variable where data type is int.

global declaration
↓
We can use this object S in any function not only in main().

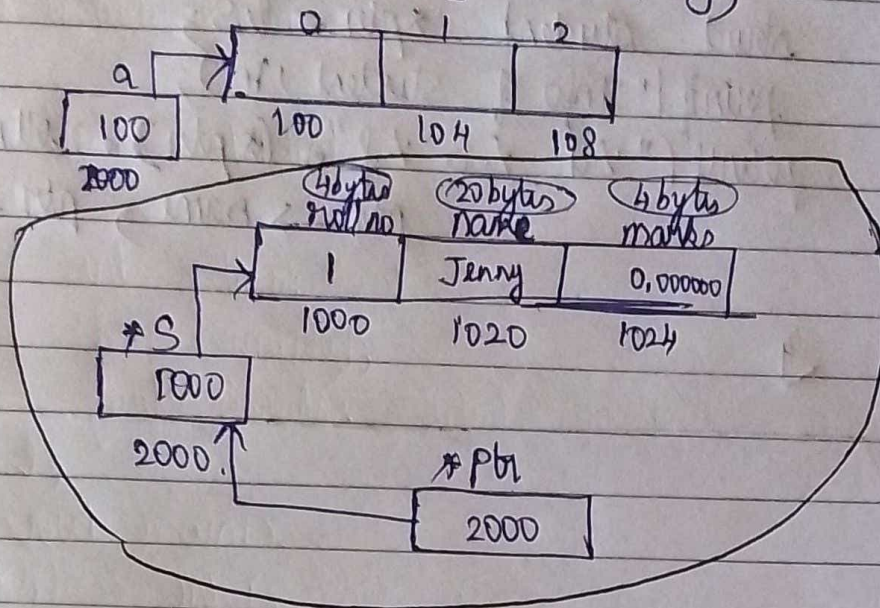
wrong

```
{
    int b;
    float *ptrb = &b;
```



* Like array, structure is also internal pointer variable.

int a[3] = {1, 2, 3};



```
struct student *ptr = &S;
printf("rollno is %d", ptr->rollno);
```

(*ptr).rollno
 (*S).rollno. → ①

*ptr means value at ptr is 2000.

2000 address is S

Structure Pointer:

* It is a pointer which points to address of the ~~structure~~ memory block that stores structure.

Program:-

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

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

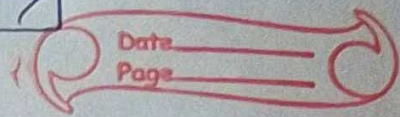
```
struct student {
```

```
int rollno;
```

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

```
float marks; }
```


$(*ptr).$ (or) $ptr \rightarrow$



```
void struct student S = {1, "Jenny", 90};
```

```
void main()
```

```
{
```

```
    struct student *ptr = &S;
```

```
    printf("Info of student\n");
```

```
    printf("%d %s %f", (*ptr).rollno,  
           ptr->name, ptr->marks);
```

```
}
```

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  /** 14-POINTER TO STRUCTURE **/
4
5  struct student
6  {
7      int rollno;
8      char name[20];
9      float marks;
10 };
11
12 int main()
13 {
14     struct student s={1,"Jenny",90};
15     struct student (*sptr)=&s;
16     printf("Details of Studnet\n");
17     printf("%d %s %0.2f", (*sptr).rollno, sptr->name, sptr->marks);
18     getch();
19 }
20

```

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```

Details of Studnet
1 Jenny 90.00_

```

Array of structures with pointers

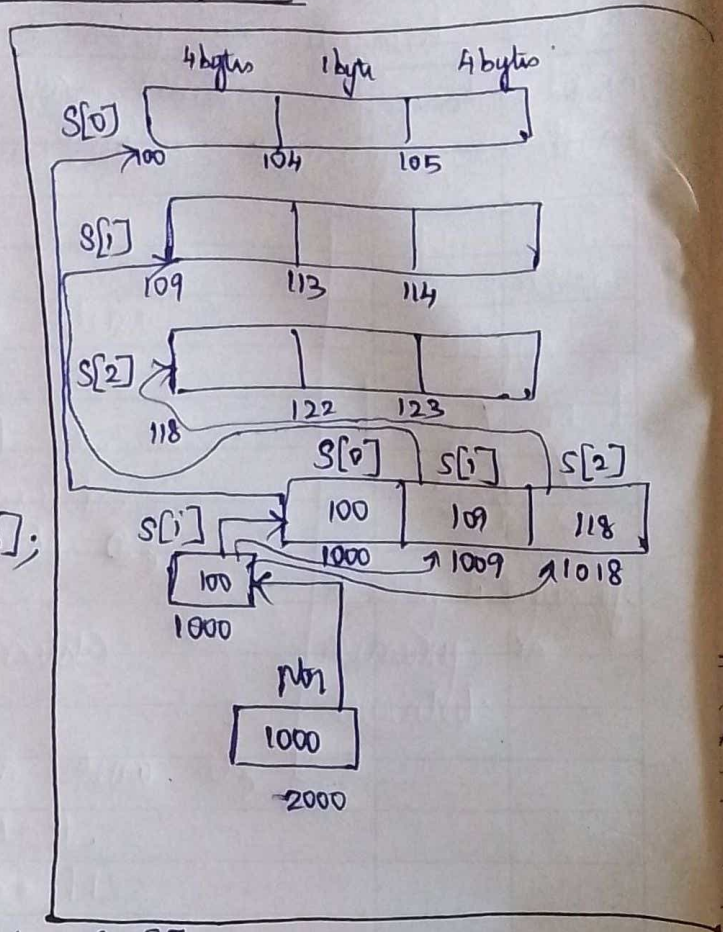
```

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

struct student s[3];

int main()
{
    int i;
    for(i=0; i<3; i++)
    {

```



```

        struct student *ptr = &s[i];
        printf("Enter student details of s[%d]\n", i);
        scanf("%d %s %f", &(*ptr).rollno, &(*ptr).name,
                &(*ptr).marks);
    }
    for(i=0; i<3; i++)
    {
        printf("\n student details of s[%d]\n", i);
        printf("%d %s %0.2f", s[i].rollno, s[i].name, s[i].marks);
    }
    getch();
}

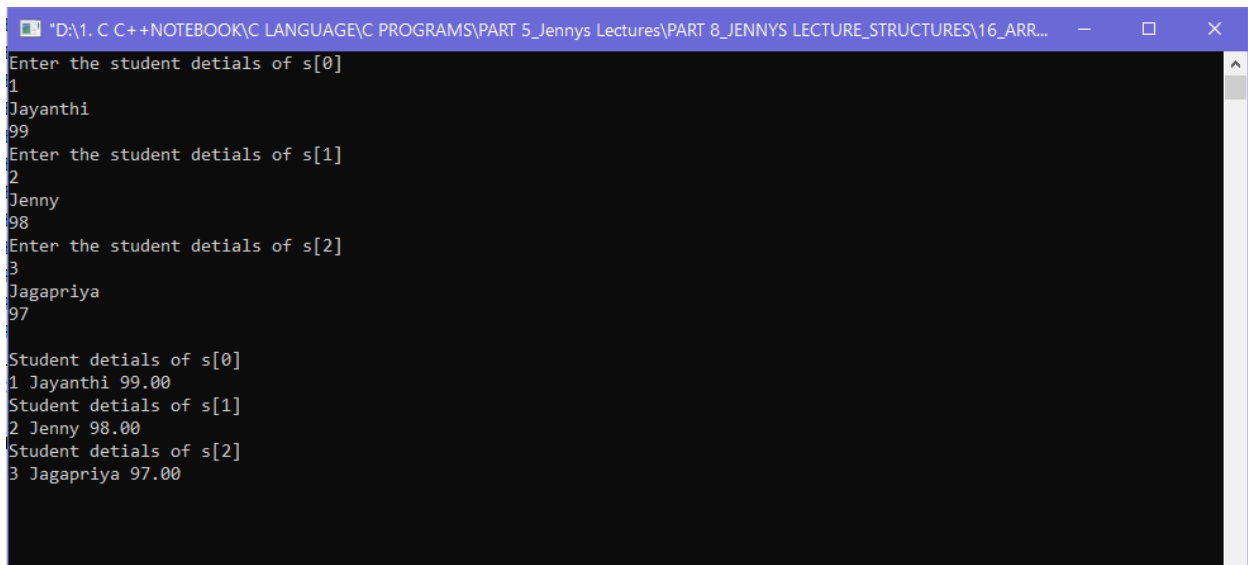
```



```

3  /** 16-ARRAY OF STRUCTURE WITH POINTERS **/
4  /** Accessing array of structures using pointers **/
5  struct student
6  {
7      int rollno;
8      char name[20];
9      float marks;
10 };
11 struct student s[3];
12 int main()
13 {
14     int i;
15
16     for(i=0;i<3;i++)
17     {
18         struct student *ptr=&s[i];
19         printf("Enter the student details of s[%d]\n",i);
20         scanf("%d %s %f",&(*ptr).rollno,&(*ptr).name,&(*ptr).marks);
21     }
22     for(i=0;i<3;i++)
23     {
24         printf("\nStudent details of s[%d]\n",i);
25         printf("%d %s %0.2f",s[i].rollno,s[i].name,s[i].marks);
26     }
27     getch();
28 }
29

```



```

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Enter the student details of s[0]
1
Jayanthi
99
Enter the student details of s[1]
2
Jenny
98
Enter the student details of s[2]
3
Jagapriya
97

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 97.00

```