

LAB Exercise

Using normal variable

Syntax:

```
struct tag_name  
{  
    data type var_name1;  
    data type var_name2;  
    data type var_name3;  
};
```

LAB Exercise

Example:

```
struct student
{
    int mark;
    char name[10];
    float average;
};
```

LAB Exercise

Declaring structure using normal
variable:
`struct student report;`

LAB Exercise

Initializing structure using normal variable:

```
struct student report = {100, "Mani",  
99.5};
```

LAB Exercise

Accessing structure members using
normal variable:

```
report.mark;
```

```
report.name;
```

```
report.average;
```

LAB Exercise 1

```
1 #include <stdio.h>
2 #include <string.h>
3
4 struct student
5 {
6     int id;
7     char name[20];
8     float percentage;
9 };
10
11 int main()
12 {
13     struct student record = {0}; //Initializing to null
14
15     record.id=1;
16     strcpy(record.name, "Raju");
17     record.percentage = 86.5;
18 }
```

OUTPUT:

Id is: 1

Name is: Raju

Percentage is: 86.500000

LAB Exercise 2

```
1 #include <stdio.h>
2 #include <string.h>
3
4 struct student
5 {
6     int id;
7     char name[20];
8     float percentage;
9 } record;
10
11 int main()
12 {
13
14     record.id=1;
15     strcpy(record.name, "Raju");
16     record.percentage = 86.5;
```

OUTPUT:

Id is: 1

Name is: Raju

Percentage is: 86.500000

LAB Exercise 3

Write the program to get the data of input then show the result as below
by using structure and array

INPUT

Enter detail of STUDENT : 1

Id is: **1**

Name is: **Raju**

Percentage is: **86.5**

Enter detail of STUDENT : 2

Id is: **2**

Name is: **Surendren**

Percentage is: **90.5**

Enter detail of STUDENT : 3

Id is: **3**

Name is: **Thiyagu**

Percentage is: **81.5**

OUTPUT:

Records of STUDENT : 1

Id is: 1

Name is: Raju

Percentage is: 86.500000

Records of STUDENT : 2

Id is: 2

Name is: Surendren

Percentage is: 90.500000

Records of STUDENT : 3

Id is: 3

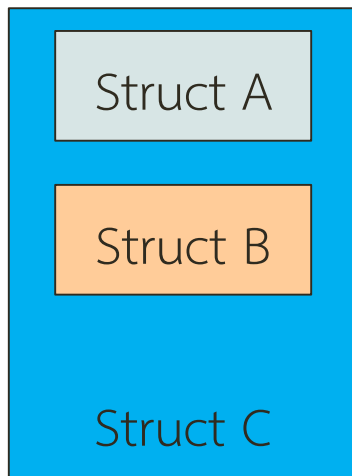
Name is: Thiyagu

Percentage is: 81.500000

Nested structure

- You can create a structure within a structure which is called Nested structure

Example Declare C structure which consist of structure A and structure B inside as below



```
struct A {  
    ...  
};  
struct B {  
    ...  
};  
struct C {  
    struct A data_a;  
    struct B data_b;  
    ...  
};
```

Nested structure

```
struct address {  
    int    num;  
    int    moo;  
    char   road [20];  
    char   district [20];  
    char   province [20];  
};  
struct phone {  
    char   home [10];  
    char   mobile [10];  
};
```

```
struct student {  
    char   name [20];  
    char   surname [20];  
    char   id [9];  
    struct address add;  
    struct phone tel;  
};
```

name	surname	id	add					tel	
			num	moo	road	district	province	home	mobile

Example : Nest structure

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
{
    struct address{
        int add;
        int moo;
        char road[20];
        char district[20];
        char province[20];
    };
    struct university{
        char name[70];
        struct address place;
    };
    struct university king;
```

Example : Nested structure

```
strcpy (king.name,"King Mongkut\'s Institute of Technology  
Ladkrabang");  
king.place.add = 3;  
king.place.moo = 2;  
strcpy(king.place.road,"Chalongkrung");  
strcpy(king.place.district,"Ladkrabang");  
strcpy(king.place.province,"Bangkok");  
  
printf ("%s\n",king.name);  
printf ("Address : %d Moo %d, %s Rd.\n",  
        king.place.add,king.place.moo,king.place.road);  
printf ("          %s, %s",king.place.district,  
        king.place.province);  
  
return 0;  
}
```

Example : Nested structure

King Mongkut's Institute of Technology Ladkrabang
Address : 3 Moo 2, Chalongkrung Rd.
Ladkrabang, Bangkok

LAB Exercise 4

Write the program to get the data of input then show the result as below
by using nest structure and array

INPUT

Id is: **1**

Name is: **Raju**

Percentage is: **90.500000**

College Id is: **71145**

College Name is: **Anna University**

OUTPUT:

Id is: 1

Name is: Raju

Percentage is: 90.500000

College Id is: 71145

College Name is: Anna University