

# MA 511: Computer Programming

## Lecture 10

[http://www.iitg.ernet.in/psm/indexing\\_ma511/y08/index.html](http://www.iitg.ernet.in/psm/indexing_ma511/y08/index.html)

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Mon 10:00-10:55 Tue 11:00-11:55 Fri 9:00-9:55 Class: 1G2

MA512 Lab : Wed 14:00-16:55

# Example

how to access variables `acct_no`, `acct_type`, `name`, `balance` of the **struct** `account` ?

```
struct account {
```

```
    int acct_no;
```

```
    char acct_type;
```

```
    char name[80];
```

```
    float balance;
```

```
};
```

```
static/external struct account customer[ ] = {12, 'S', "abcd", 123.0,  
                                                13, 'C', "wert", 234.0,  
                                                14, 'S', "rsdef", 1234.0};
```

or

```
static/external struct account customer[ ] = {{12, 'S', "abcd", 123.0}, {13, 'C', "wert",  
234.0},{14, 'S', "rsdef", 1234.0}};
```

**static/external** : storage class

# global variable static storage class

```
#include<stdio.h>
void func(void);
static count1=10; /*Global variable -static is the default*/
main() {
    while (count1-->0)
        func();
}

void func(void) {
    /* 'count2' is local to 'func' - it is only initialized at run time. Its value is NOT
    reset on every invocation of 'func' */
    static count2=5;
    count2++;
    printf(" count2 is %d count1 is %d\n", count2, count1);
}
```

## Output:

```
count2 is 6 count1 is 9
count2 is 7 count1 is 8
count2 is 8 count1 is 7
count2 is 9 count1 is 6
count2 is 10 count1 is 5
count2 is 11 count1 is 4
count2 is 12 count1 is 3
count2 is 13 count1 is 2
count2 is 14 count1 is 1
count2 is 15 count1 is 0
```

# Example

how to access variables `acct_no`, `acct_type`, `name`, `balance` of the **struct** `account` ?

```
#include<stdio.h>
void input_data(int i);
void output_data(int i);
struct account {
    int acct_no;
    char acct_type;
    char name[80];
    float balance;
} customer[100];
main(){    int i, n;
    printf("No of Customers? ");
    scanf("%d", &n);
    for(i = 0; i < n; i = i + 1)
        input_data(i);
    for(i = 0; i < n; i = i + 1)
        output_data(i);
} //end of the main
```

```
void input_data(int i){
    printf("Name of the customer:");
    scanf(" %[^\\n]", customer[i].name);
    printf("Acct_no of the customer :");
    scanf("%d", &customer[i].acct_no);
    printf("Balance of the customer :");
    scanf("%f", &customer[i].balance);
    printf("Type of the customer ");
    scanf(" %c", &customer[i].acct_type);
}

void output_data(int i){
    printf("\\n Name of the customer: %s", customer[i].name);
    printf("\\n Acct_no of the customer : %d", customer[i].acct_no);
    printf("\\n Balance of the customer : %f", customer[i].balance);
    printf("\\n Acct_type of the customer : %c", customer[i].acct_type);
}
```

# Exercise

- Write a c-programming using **struct** for detecting a set of given  $n$  randomly generated points are belonging to a given circle or not.

```
struct coordinates {  
    int x;  
    int y;  
} points[100];
```