Pointers in C

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Pointers in C

- Memory Addresses
- Pointers
- Assigning Addresses to Pointers
- Accessing Value using Pointers

Memory Addresses

- **& operator** is used for addressing.

- Normally we use **& operator** in **scanf()** function.

```
void main()
{
    int a;
    printf("Enter Number : ");
    scanf("%d",&a);

    printf("Value of a = %d",a);
    printf("Address of a = %u ",&a);
}
```

```
Output:

Enter Number : 10
Value of a = 10
Address of a = 23452
```
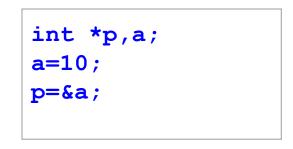
Pointers

- Pointers (Pointer Variable) is a special variable that is used to store the address of another variable

Example1:

```
int *p;
```

Example2:

```
int *p1, p2;
```

Assigning Address to Pointers

- Consider the following example

```
int *p,a;
a=10;
p=&a;
```

Here, **10** is assigned to the **a** variable. And, the address of **a** is assigned to the **p pointer.**

Accessing Value Using Pointer

- To access a value of a variable using pointer, we use **`* operator`**

```
int *p,a;
a=10;
p=&a;
printf("%d",a);
printf("%d",*p);
```

Note:

- In the above example, `p` is a pointer, not `*p.` You cannot and should not do something like `*p = &a;`

- `*` is called the dereference operator (when working with pointers). It operates on a pointer and gives the value stored in that pointer.

Accessing Value Using Pointer

- To access a value of a variable using pointer, we use *** operator**

```
int *p,a;
a=10;
p=&a;
printf("%d",a);
printf("%d",*p);
printf("%d",**p1)
```

p1	p	a
10000	20000	10
50000	10000	20000