

Deep Copy vs Shallow Copy Constructors

Deep Copy:

- deep copy constructor is useful for making a copy of dynamic structures which are in heap. like Dynamic Array ,Linked List, Trees etc.
- if member of a class is a pointer 'p' and it is pointing to array or object in heap.
- if object A is having its member 'p' pointing on an array or object in heap and you are making a copy of A as B then 'p' of B will also point on same array or object of A.
- to have separate copy of B another array or object should be created and make 'p' point on it.
- if a copy constructor is doing it, we say Deep copy constructor.

Shallow Copy:

- Copy constructor will copy only the members of an object.
- If an object is holding any memory in heap, it will not be copied.

Copy constructor vs Assignment operator

their working is same but usage is different.

```
Rectangle r1(10,5);
```

```
Rectangle r2(r1); // copy constructor is called
```

```
Rectangle r3=r1; // assignment operator is called
```