

## **COPY CONSTRUCTOR:**

A copy constructor is used to declare and initialize an object from another object. Example:- the statement `integer 12(11);`

would define the object 12 and at the same time initialize it to the values of 11. Another form of this statement is : `integer 12=11;`

The process of initialization through a copy constructor is known as copy initialization.

Example:-

```
#include<iostream.h>
```

```
class code
```

```
{
```

```
int id;
```

```
public code ( ) { } //constructor code (int a) { id=a; } //constructor
```

```
code(code &x)
```

```
{
```

```
id=x.id;
```

```
}
```

```
void display( )
```

```
{ cout<<id;
```

```
}
```

```
};
```

```
int main( )
```

```
{
```

```
code A(100); code B(A); code C=A;
```

```
code D; D=A;
```

```
cout<<" \n id of A :"; A.display( ); cout<<" \nid of B :"; B.display( ); cout<<" \n id of C:";
```

```
C.display( ); cout<<" \n id of D:"; D.display( ); }
```

output :- id of A:100 id of B:100 id of C:100

id of D:100

## **DYNAMIC CONSTRUCTOR:-**

The constructors can also be used to allocate memory while creating objects . This will enable the system to allocate the right amount of memory for each object when the objects are not of the same size, thus resulting in the saving of memory.

Allocate of memory to objects at the time of their construction is known as dynamic constructors of objects. The memory is allocated with the help of new operator. Example:-

```
#include<iostream.h>
```

```
#include<string.h>
```

```

class string
{ char *name;

int length; public:
string ( )
{ length=0;
name= new char [length+1]; /* one extra for \0 */
} string( char *s) //constructor 2
{
length=strlen(s); name=new char [length+1];
strcpy(name,s);
} void display(void)
{
cout<<name<<endl;
}
void join(string &a .string &b)
{
length=a. length +b . length; delete name;
name=new char[length+1]; /* dynamic allocation */ strcpy(name,a.name); strcat(name,b.name);
}
};

int main( ) {
char * first = "Joseph" ;
string name1(first),name2("louis"),name3( "LaGrange"),s1,s2; s1.join(name1,name2);
s2.join(s1,name3); name1.display( ); name2.display( ); name3.display( ); s1.display( );
s2.display( );
} output :-
Joseph Louis language Joseph Louis
Joseph Louis Language

```