

Writing classes b

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Implement cString class

```
class cString
{
    int length;
    char *ptr;
public:
    cString(); //default
    cString(char*);
};

int main()
{
    cString s1;
    cString s2("Hello");
}
```

Default constructor for cString

```
cString::cString()  
{  
    length=0;  
    ptr=new char[length+1]  
    *ptr='\0';  
}
```

Parameterized Constructor

```
cString::cString(char* p)
{
    length=strlen(p);
    ptr=new char[length+1];
    strcpy(ptr,p);
}
```

Need of Destructor

- When object goes out of scope at that implicitly destructor is called. And explicitly when we use **delete** operator.
- If we are using pointer data member as class member then we need to explicitly write destructor otherwise it will create problem of memory leakage.

Destructor

- How to write destructor

Syntax:

```
~ cString()  
{  
    delete []ptr;  
    ptr=NULL;  
}
```

Rules for creating destructor:

1. Use tiel(~) operator.
2. Same name as class name.
3. No return type.

Need of Copy constructor

```
cString s1("Hello");  
cString s2(s1);
```

1. Here compiler copy constructor is called. It will make member wise copy that is called shallow copy.
2. It will create problem of dangling pointer.
3. To avoid dangling pointer problem we need to write explicit copy constructor.

copy constructor

```
cString :: cString( cString& s1)
{
    this -> length = s1 . length;
    this -> ptr = new char [ length + 1 ];
    strcpy ( this -> ptr , s1 . ptr );
}
```

Passing object to function

1. We can pass object to function and return object from function.
2. Faculty need to show demo to them how to pass object and return object from function.
3. How to pass object to function by reference mechanism.

Lab Assignments

- Create a cString class with following
 1. data members: length and pointer variable.
 2. constructors
 3. Destructor.
 4. Copy constructor.
- Write a program to make addition of two objects data.