

# OOP Assignment No.- 05

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AIM - Create, Stud. class to display student info. using constructor and destructor. (default constructor, Multiple constructor, Copy Constructor, Overloaded Constructor)

Theory :

## C++ Constructor

- In C++, constructor is a special method which is invoked automatically at the time of object creation.
- It is used to initialize the data members of new object generally.
- The C++ constructor has the same name as the class or structure.

There can be two types of constructors →

- ① - Default constructor
- ② - parameterized constructor

### ① C++ Default constructor →

- A constructor which has no argument is known as default constructor.

### ② C++ parameterized constructor →

- A constructor which has parameters is called parameterized constructor. It is used to provide different values to distinct objects.

### ③ C++ Destructor.

- A destructor works opposite to the constructor, it destructs the object of the classes.
- It can be defined only once in the class.
- Like constructor, it is invoked automatically.
- Name of destructor will remain same as class but prefix will be (~) tilde there.

## Program Code:

```
#include <iostream>

// no need to mention the data type for declaring the constructors
using namespace std;

class student
{
private:
    string name;
    int age;

public:
    //Default Constructor
    student()
    {
        cout << "\nDefault Constructor\nEnter the Name and age" << endl;
        cin >> name >> age;
        cout << "Name: " << name << "\nAge: " << age << endl;
    }

    //Parameterized Constructor
    student(string n, int a)
    {
        cout << "\nParameterized Constructor" << endl;
        name = n;
```

```

        age = a;
        cout << "Name: " << name << "\nAge: " << age << endl;
    }

//Destructor
~student()
{
    cout << "\nDestructor Called" << endl;
}

//copy constructor
student(const student &obj)
{
    name = obj.name;
    age = obj.age;
    cout << "\nOutput by copy constructor\nName: " << name << "\nAge: " <<
age << endl;
}
};

int main()
{

    cout << "rudraskh.karpe.cs@ghrcem.raisoni.net\n";
    student obj;
    student("Raj", 20);

```

```
student obj1(obj); //copy constructor called here  
return 0;  
}
```

## Output:

```
PS R:\GHRCEM\OOP LAB> cd "r:\GHRCEM\OOP LAB\" ; if ($?) { g++ LAB_5.cpp -o LAB_5 } ; if ($?) { .\LAB_5 }  
rudraskh.karpe.cs@ghcem.raisoni.net  
  
Default Constructor  
Enter the Name and age  
Rudraskh 20  
Name: Rudraskh  
Age: 20  
  
Parameterized Constructor  
Name: Raj  
Age: 20  
  
Destructor Called  
  
Output by copy constructor  
Name: Rudraskh  
Age: 20  
  
Destructor Called  
  
Destructor Called
```