

# **Object-oriented Programming**

## **Lecture 4**

# Constructor

- A *constructor* is called whenever an object of a class is created

```
class MyClass
```

```
{  
    public:    //constructors are usually public
```

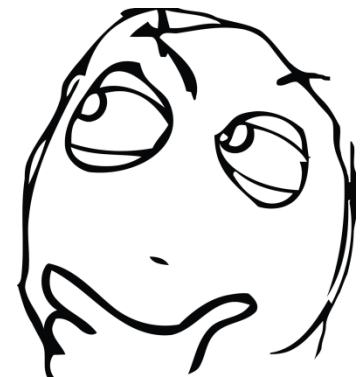
```
    MyClass()
```

```
    { //Things you want to do as soon as object is created }
```

```
}
```

# Constructor

- C++ requires a constructor call for each object that is created
- A constructor *\*looks\** similar to a function except that it does not return anything (thus it does not have a return type)



# Constructor

- A constructor is used to initialize the data members/class variables for an object when that object is created
- If you don't define a constructor in a class, the compiler itself provides a *default (no-parameter) constructor* for that class

# Constructor

- A constructor can take parameters. These parameters are used to initialize class variables for the object

```
class Employee
{
    string name;

    public:
    Employee(string eName)
    {
        name = eName;
    }
}
```

```
int main()
{
    Employee e1("Ali");
    Employee e2("Shuja");
}
```

# Constructor

- Can we have more than one parameterized constructors of a class?

*Yes, we can. But not having the same parameter signature*

- If you define any parameterized constructor(s) in the class, C++ will not implicitly create a default constructor for you

# Some Code

```
class A
{
    int var;
    string str;

    public:
    A(int v)
    {
        var = v;
        cout << "Constructor v1: " << var << endl;
    }

    A()
    {
        var = 0;
        cout << "Default constructor: " << var << endl;
    }

    A(string s)
    {
        str = s;
        cout << "Constructor v2: " << str << endl;
    }
};
```

```
int main()
{
    A dOb;
    A iOb(50);
    A sOb("Hello");
}
```

# Some Code

```
class A
{
    int var;
    string str;

    public:
    A(int v)
    {
        var = v;
        cout << "Constructor v1: " << var << endl;
    }

    A(string s)
    {
        str = s;
        cout << "Constructor v2: " << str << endl;
    }
};
```

```
int main()
{
    A dOb;   \\This line will give an error
    A iOb(50);
    A sOb("Hello");
}
```



# Next Lecture

- Destructors!

