

Monday, 21 March  
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# Crux

Object Oriented  
Programming- 1

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# Object Oriented Programming

# Java Classes

1. Classes & Objects
2. Data
3. Functions

# Classes & Objects

1. Blueprint to generate instances of same nature
2. Each individual instance is an object
3. Copies of only non static data members is created.

# Data Members

1. Static vs Non Static
2. Public, default, protected and private
3. Final Members
4. Initialization

# Default methods with every class

# Constructor and Default Methods

1. Constructor(Java and C++)
2. Copy Constructor(C++)
3. Copy Assignment Operator(C++)
4. Destructor(C++)

# User defined constructors



# Operator Overloading

```
class pair
{
    public:
    int x,y;
    bool operator < ( const pair& p ) const
    {
        if(x==p.x) return y<p.y;
        return x<p.x;
    }
};
```

# Static Methods

# Components of OOP

1. Encapsulation
2. Inheritance
3. Polymorphism

# Encapsulation

1. Bind the data and functions together
2. Hiding the implementation details
3. Lets us change the implementation without breaking code of our users

# Inheritance

1. Extending Functionality of an existing class
2. Add new methods and fields to derived class
3. If both classes have a function with same name, which class's function will get called?

# Inheritance

1. Super
2. How constructors are called ?

# Polymorphism

1. Overriding the base class functions(Virtual Functions)
2. Ability of a variable to take different forms
3. Ability of a function to behave differently on basis of different parameters
4. Ability of a function to work with parameters of subtypes

# Public and Non Public Classes?





Thank You !! 😊

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