Saturday, 20
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# Crux

## Lecture -11

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, protected (Leave for now), private and default
3. Initialization
4. Final Members (Leave for now)

# Default methods with every class

- Constructor

# 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

# this

# Data Members

1. Static vs Non Static
2. Public, protected (Leave for now) and private
3. Initialization
4. Final Members

# 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?

# BT : Finding the Fastest horses

- You have 25 horses and you can race only 5 of them simultaneously. Assuming you do not have access to stop-watch, how many times would you need to race the horses to find the 3 fastest horses.


# Thank You!

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