

# Object Oriented Programming Structure / System

→ OOP is Programming Paradigm / methodology  
 (Programming Paradigm is an approach to solve problem using some programming language or also we can say it is method to solve a problem)

→ There are lots of types of programming paradigm (approach to solve problems) (way to solve a problem)

- \* Object oriented paradigm.
- \* Procedural Paradigm.
- \* functional
- \* logical
- \* Structured.

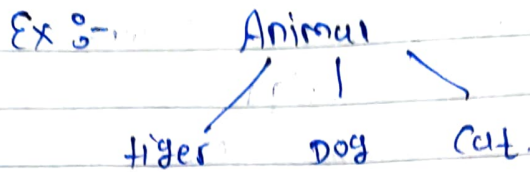
→ 6 main pillars of oop's

- Class
- Object & methods
- Inheritance.
- Polymorphism.
- Abstraction.
- Encapsulation.

## \* Class :-

- Class is collection of objects.
- Class is not a real world entity, it is just a template, blueprint or prototype.
- Class does not occupy memory.

Ex :- we can not see class in real world. it simply just categorized objects.



Syntax :- Access modifier class Classname {  
// class body.

→ "By default Access modifier of class is default"

\* methods :-

→ "A set of code which perform a particular task"

→ Advantages of method.

1. Code Reusability.
2. code optimization.

Syntax :-

Access modifier      return type      <sup>lowercase</sup> ↓      <sup>upper case</sup> ↗      Method Name (parameters)

{

}

\* Object :-

- Object is an Instance of class.
- object is real world Entity.
- object occupies memory.

Object consist of :- Identity. (Name)

(unique for all)

- State / Attribute :- age, color.
- Behavior :- Eat, run

How to create an object. (Methods to create an object)

- new keyword
- new Instance () method.
- clone () method.
- deserialization
- factory method.

Object creation using new keyword.

Class

Object

Name

1) Declaration :- Animal A1;

2) Instantiation :- A1 = new Animal ();

3) Initialization :-

Null is assigned to the memory when object is declared.

In initialization memory is allocated for an object. Here new keyword is used to create an object.

Initialization by a constructor. (the 'new' keyword is followed by a call to a constructor. this call initializes the new object)

- Here all state & behaviour of an object is loaded in the memory.



Syntax :-

Animal A1 = new Animal ();

→ By using . operator we can call methods of object.

A1.run ();

↓

(Method inside Animal class)

\* How to initialize a object.

(How to put values in object)

- By using Reference Variable
- By using Constructor.
- By using method.