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An investment in Knowledge pays the best interest….

OOP's Concept in Java

(Class, Methods & Objects)

OOP's :-

-> Full form is Object Oriented Programming

-> OOP is the programming paradigm based on the concept of Objects which contains the data(fields or variables) and methods

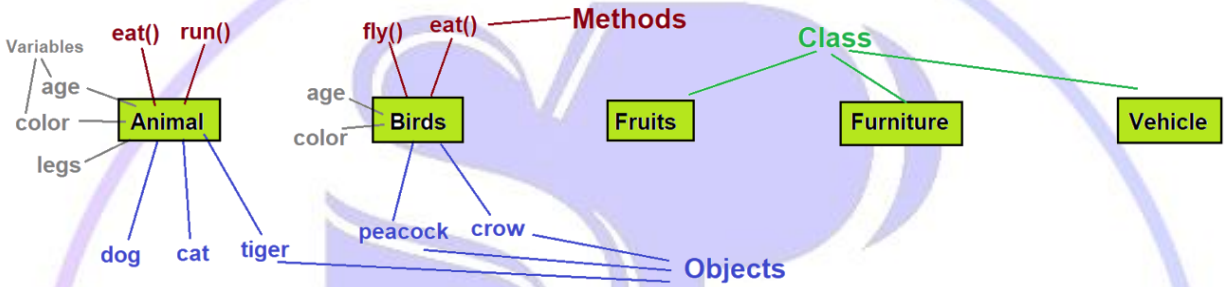
-> It is the most popular programming paradigm used by the programmers

-> For examples : Java, Python, C++ etc

-> Features of OOP :-

1. Class, Objects & Methods
2. Meassage Passing
3. Inheritance & Composition
4. Polymorphism
5. Encapsulation
6. Abstraction

⇨ Real World Example of Class, Methods & Objects



=> Class :-

-> A class is a user defined blueprint or prototype which is used to create an object

-> Class is a logical entity or say its not a real world entity or class is not physical

-> Real world example :- Animal, Birds, Vehicle, Fruits etc

-> Class represents the set of properties or methods that are common to all the objects of one type

-> Simply we can say that a class is a group of objects having common properties (attributes or variables), behaviour (methods), relationships & semantics.

-> Syntax :

access-modifiers class ClassName extends ParentClassName implements InterfaceName

```
{
    //variables
    //blocks
    //constructors
    //methods
    //nested class, interfaces
}
```

-> Simple syntax :

```
access-modifiers class ClassName
{
    //variables
    //methods

    }
```

-> Simple class

```
class Animal
{
    int age=10;
    String color=black;

}
```

=> Methods :-

-> A set of codes which perform a particular task

-> Advantages :-

1. Code reusability
2. Code optimization

-> Syntax :

access-modifiers return-type methodName(list of parameters) throws ExceptionClassName, -, -

```
{
    //statements
}
```

-> Simple Syntax :-

```
return-type methodName(list of parameters)
{
    //statements

}
```

-> Example :-

```
void eat()
//method declaration
{
//method defination (body)
    System.out.println("im eating");
}
```

=> Objects :-

-> Object is an instance of class

-> Object is physical entity or object is real world entity

-> An object has 3 characteristics :-

1. State (represents the data(value) of an object)

2. Behaviour (represents the functionality of an object)

3. Identity (represents the unique id of an object which is created automatically by JVM)

-> Object is simple a memory block

-> Syntax :

1. Creation of an object

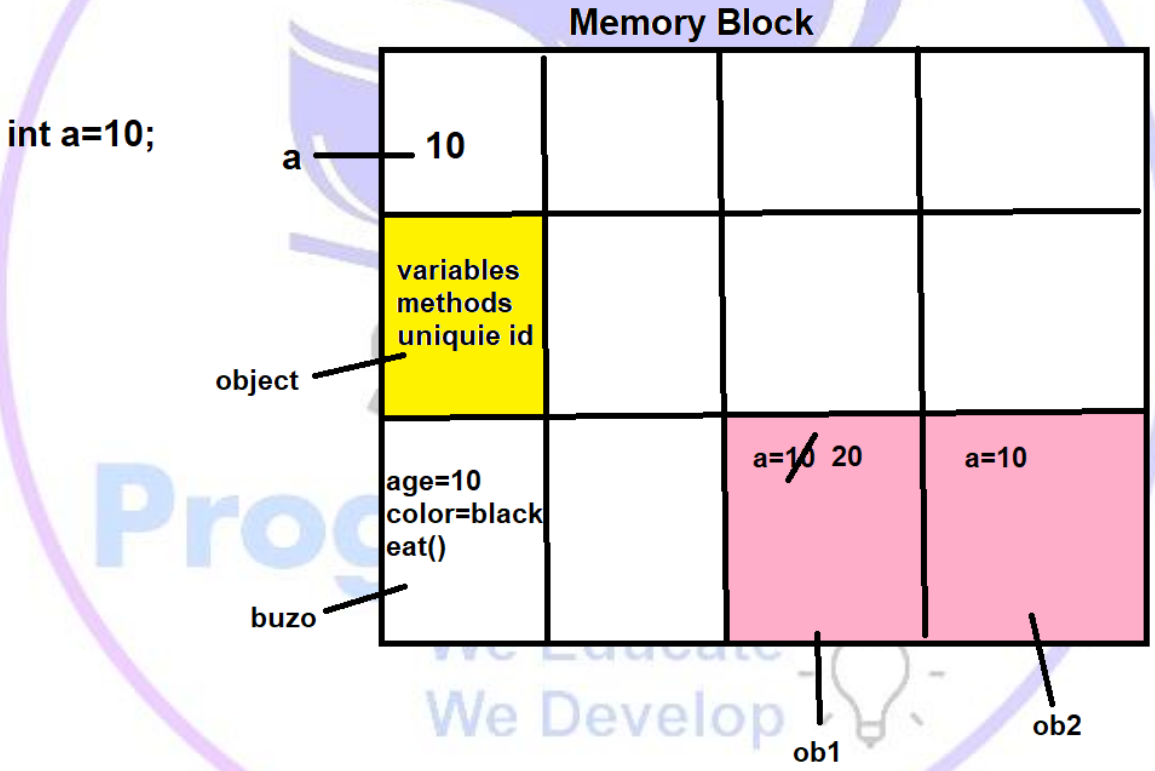
ClassName object_name (ref_variable_name) = new ClassName();

-> Animal buzo = new Animal();

2. Calling variables or methods from object

object_name.variable_name; -> buzo.age;

object_name.methodName(); -> buzo.eat();



=> Points to remember :-

-> We can only use public or default access-modifiers but not private or protected with outer class.

-> For inner class we can use all access-modifiers i.e. public, proctedted, default and private

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Company Name: Smart Programming (+91 62838-30308)

Address : Chandigarh & Mohali (Punjab), India

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