iGenuine

Java Programming

iGenuine

Lesson 7 - Inheritance

WHAT WILL YOU LEARN IN THIS SESSION ?

- Inheritance in Java
- Types of Inheritance in Java

iGenuine

Inheritance in Java

- Is a mechanism in which one object acquires all the properties and behaviors of a parent object.
- Idea behind inheritance in Java is that you can create new classes that are built upon existing classes.
- When you inherit from an existing class, you can reuse methods and fields of the parent class.
- Moreover, we can add new methods and fields in your current class also.

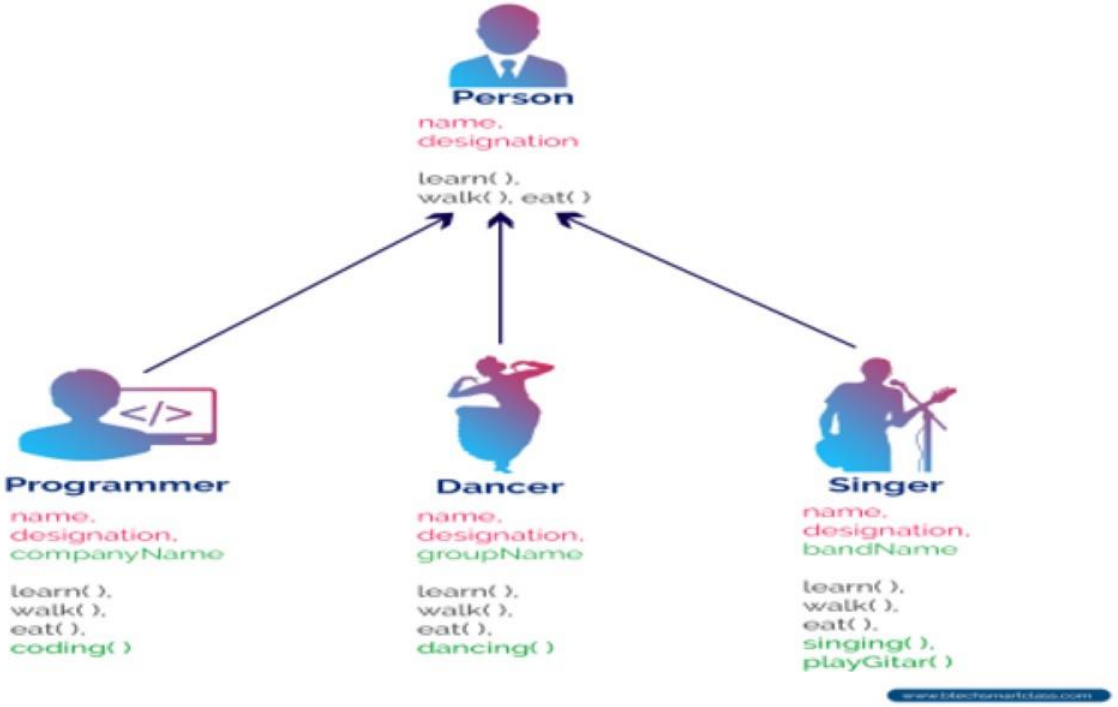
iGenuine

Why use inheritance in java

- For Method Overriding
- For Code Reusability.

iGenuine

Example



Terms used in Inheritance

- **Sub Class/Child Class:** Subclass is a class which inherits the other class. It is also called a derived class, extended class, or child class.
- **Super Class/Parent Class:** Superclass is the class from where a subclass inherits the features. It is also called a base class or a parent class

iGenuine

Syntax of Java Inheritance

```
class Subclass-name extends Superclass-name
{
  //methods and fields
}
```

Java Inheritance Example

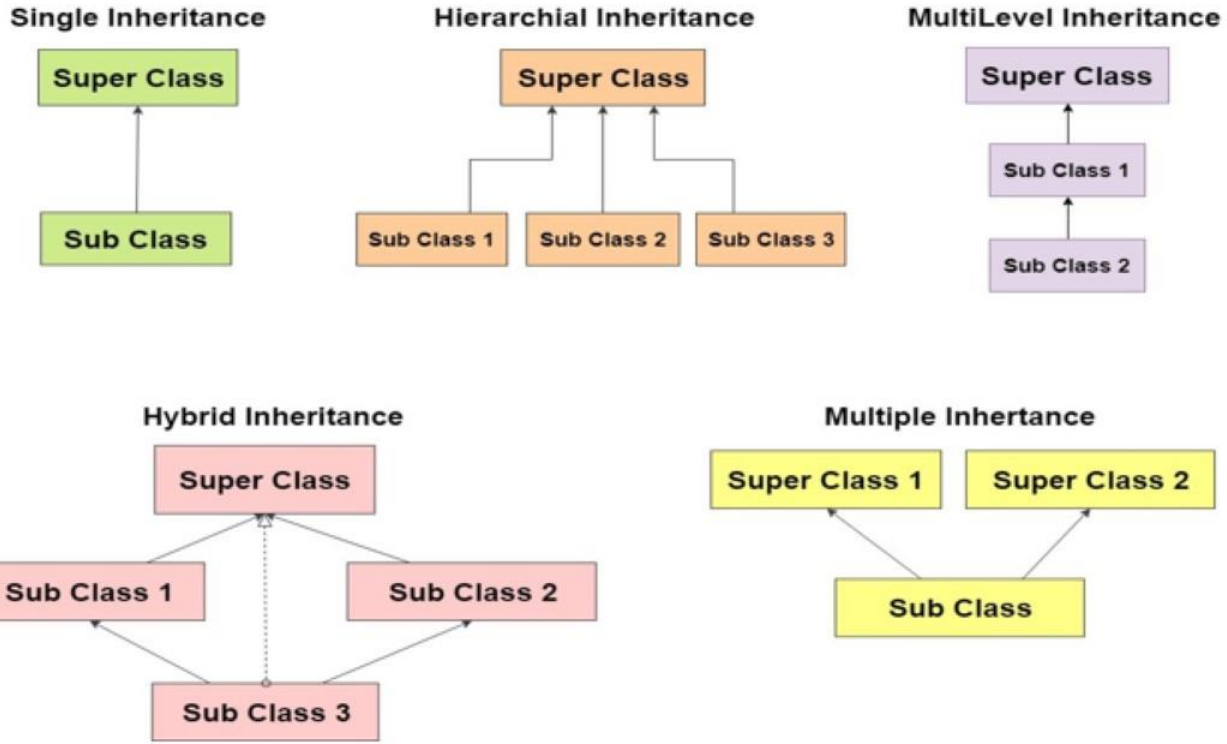
```
class Employee{
 float salary=40000;
}
class Programmer extends Employee{
 int bonus=10000;
 public static void main(String args[]){
   Programmer p=new Programmer();
   System.out.println("Programmer salary is:"+p.salary);
   System.out.println("Bonus of Programmer is:"+p.bonus);
}
}
```

Output:
Programmer salary is:40000.0
Bonus of programmer is:10000

iGenuine

iGenuine

Types of Inheritance



Single Inheritance

```
class Animal{
void eat()      { System.out.println("eating...");  }
}
class Dog extends Animal  {
void bark()  {    System.out.println("barking..."); }
}
class TestInheritance{
public static void main(String args[]){
Dog d=new Dog();
d.bark();
d.eat();
}}
```

Output:
Barking…
eating...

Multilevel Inheritance Example

```
class Animal{
void eat()
{  System.out.println("eating..."); }
}
class Dog extends Animal{
void bark()
{  System.out.println("barking..."); }
}
class BabyDog extends Dog{
void weep()
{  System.out.println("weeping...");  }
    }
```

```
class TestInheritance2{
public static void main(String args[]){
 BabyDog d=new BabyDog();
 d.weep();
 d.bark();
 d.eat();
 }}
```

Output :
weeping...
barking...
eating...

iGenuine

Hierarchical Inheritance Example

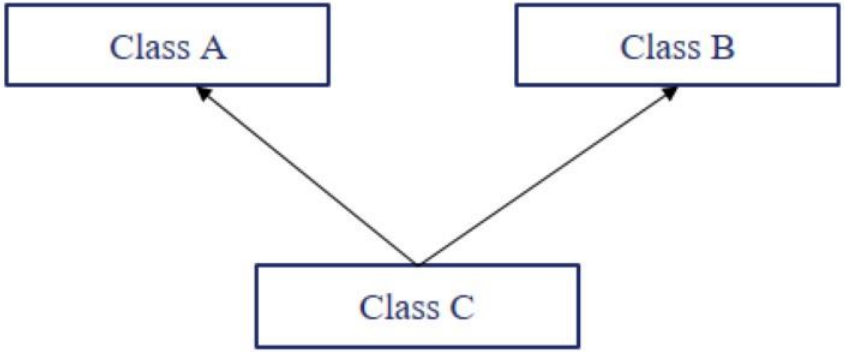
```
class Animal{
void eat()
{  System.out.println("eating...");  }
}
class Dog extends Animal{
void bark()
{  System.out.println("barking...");  }
}
```

```
class Cat extends Animal{
void meow()
{  System.out.println("meowing...");  }
    }
    class TestInheritance3{
    public static void main(String args[]){
    Cat c=new Cat();
    c.meow();
    c.eat();
    //c.bark();
    }}
```

Output:
meowing...
eating...

Multiple inheritance

One subclass extends more than one super class



iGenuine

Why multiple inheritance is not supported in java?

```
class A{
void msg()    {System.out.println("Hello");
}
}
class B{
void msg()
{System.out.println("Welcome");}
}
```

```
class C extends A,B
{
 public static void main(String args[])
{
   C obj=new C();
   obj.msg();
//Now which msg() method would be invo
ked?
}
}
```