

# Inheritance (Chapter 8 of Schilit)

Object Oriented Programming BS (AI) II

By

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# Inheritance

1

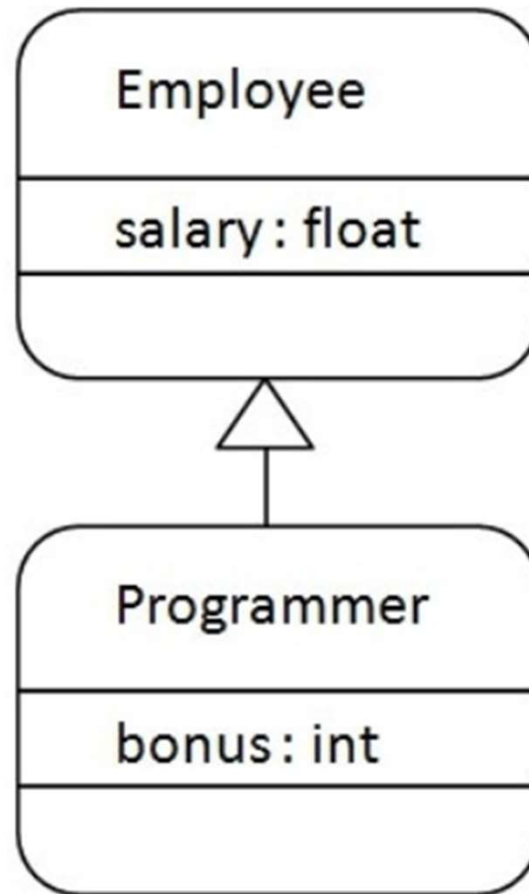
Define a general class (Super Class)

2

Define some special classes (Sub Classes):

- Contain existing properties of general class, by inheriting from it
- Also add some unique properties

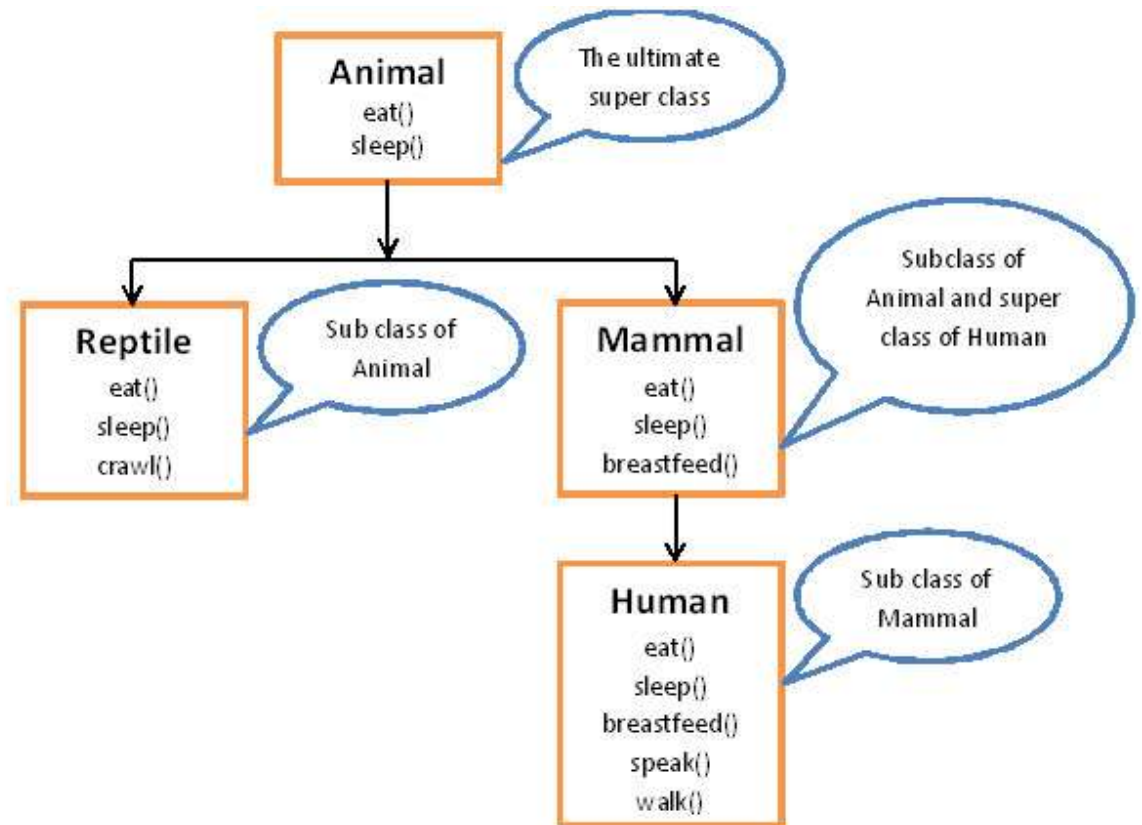
Example



# Inheritance

---

Example: superclass  
subclass



# Extends keyword

```
class subclass-name extends superclass-name {  
    // body of class  
}
```

- Used to provide inheritance in java
- A extends B; means A is a subclass(specialized version) of B and B is super class
- Extends functionality

```
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);
}
}
```

✓ Test it Now

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

```
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:

# Inheritance



**A subclass can not access private  
members of a superclass**

A private member remains private to that class



**Demo**

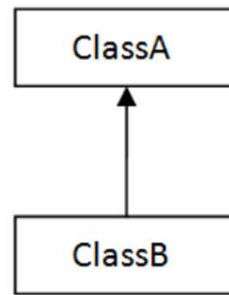




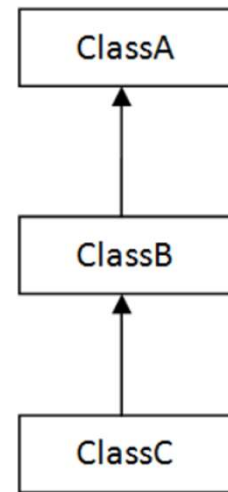
# Demo

- Extending Box Class to create:
  - BoxWeightClass
  - BoxColorClass

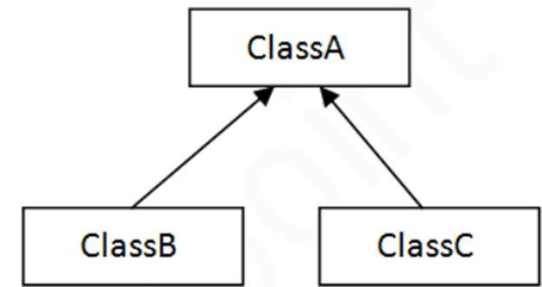
# Types



1) Single



2) Multilevel



3) Hierarchical

# Inheritance

In java multiple inheritance is not supported

Whereas  
Multilevel  
Inheritance is  
supported

# Inheritance

- Member access
- Example: private: no access

	default	private	protected	public
Same Class	Yes	Yes	Yes	Yes
Same package subclass	Yes	No	Yes	Yes
Same package non-subclass	Yes	No	Yes	Yes
Different package subclass	No	No	Yes	Yes
Different package non-subclass	No	No	No	Yes