



**Inheritance**

# Inheritance

- The keyword used for inheritance is **extends**

Child Class

Parent Class

```
public class Dog extends Animal{  
  
  
  
  
  
  
  
  
}
```

# Inheritance

- **Super Class:** The class whose features are inherited is known as super class(or a base class or a parent class)
- **Sub Class:** The class that inherits the other class is known as sub class(derived class, or child class). The subclass can add its own fields and methods in addition to the superclass fields and methods.

**ANIMAL**

Name  
Body  
Size  
Weight  
Eat  
Move

**DOG**

Name  
Body  
Size  
Weight  
Eat  
Move  
Legs

**FISH**

Name  
Body  
Size  
Weight  
Eat  
Move  
Gills  
Swim

**BIRD**

Name  
Body  
Size  
Weight  
Eat  
Move  
Sing  
Fly

Animal



Dog

Animal is called **SUPER** class and Dog is called **SUB** class

OR

Animal is called **PARENT** class and Dog is called **CHILD** class

# Inheritance and the “IS-A” Relationship

- In OOP, **inheritance** is used to create an “is-a” relationship among classes.
- Inheritance is an OOP concept in Java which allows one class to inherit the features(fields and methods) of an another class.

Animal



Dog is a Animal

Dog

Animal



Bird is a Animal

Bird

Animal

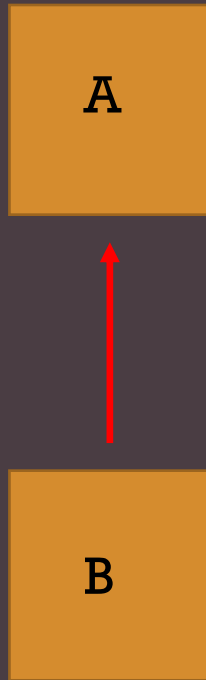


Fish is a Animal

Fish

# Types of Inheritance

- **Single Inheritance** : Subclasses inherit the features of one superclass.

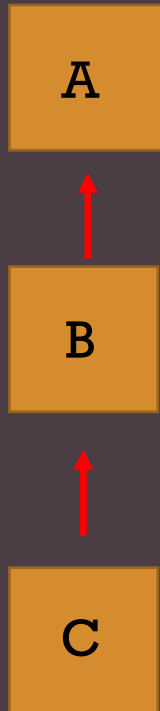


```
public class A{  
  
}  
  
public class B extends A{  
  
}
```



# Types of Inheritance

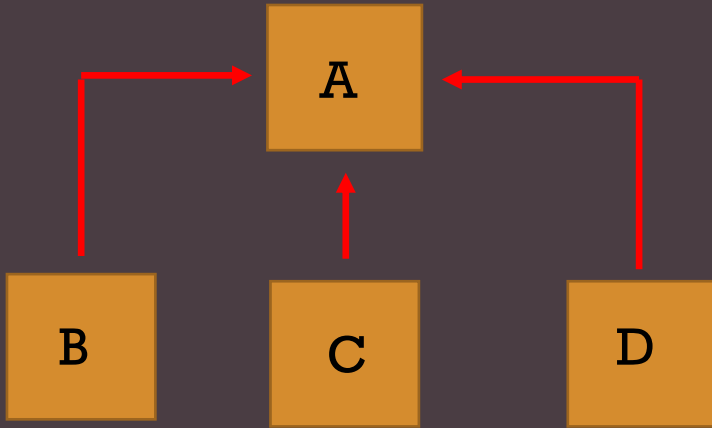
- **Multi Level Inheritance** : Subclass will be inheriting a SuperClass and as well as the subclass also act as the SuperClass to the other class.



```
public class A{  
}  
  
public class B extends A{  
}  
  
public class C extends B{  
}
```

# Types of Inheritance

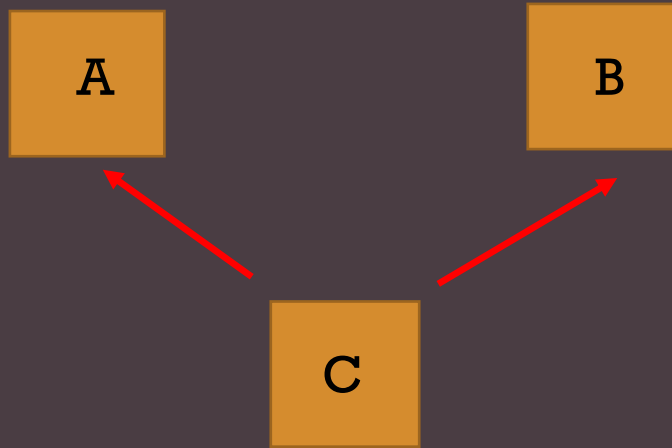
- **Hierarchical Inheritance** : Once class serves as superclass for more than one sub class.



```
public class A{  
}  
  
public class B extends A{  
}  
  
public class C extends A{  
}  
  
public class D extends A{  
}
```

# Types of Inheritance

- **Multiple Inheritance** : Java DOES NOT support multiple inheritance with classes. One class can not have more than one superclass and inherit features from all parent class.



# Task

