## What is Inheritance in Java

In simple words, Inheritance is way to define new a class, using classes which have already been defined.

Inheritance is the capability of a class to use the properties and methods of another class while adding its own functionality.

 An example of where this could be useful is with an employee records system. You could create a generic employee class with states and actions that are common to all employees. Then more specific classes could be defined for salaried, commissioned and hourly employees. The generic class is known as the parent (or super class or base class) and the specific classes as children (or sub classes or derived classes).

The concept of inheritance greatly enhances the ability to reuse code as well as making design a much simpler and cleaner process.

A subclass inherits all instance variables and methods from its super class and also has its own variables and methods.

One can inherit the class using keyword extends.

**Example :**

**public** **class** Car {

**private** String brand ;

**private** String model;

**private** **int** numsheet;

**public** Car() {

}

**public** Car(String brand, String model, **int** numsheet) {

**this**.brand = brand;

**this**.model = model;

**this**.numsheet = numsheet;

}

**public** String getBrand() {

**return** brand;

}

**public** **void** setBrand(String brand) {

**this**.brand = brand;

}

**public** String getModel() {

**return** model;

}

**public** **void** setModel(String model) {

**this**.model = model;

}

**public** **int** getNumsheet() {

**return** numsheet;

}

**public** **void** setNumsheet(**int** numsheet) {

**this**.numsheet = numsheet;

}

}

**public** **class** Truck **extends** Car {

**private** **int** loadCapacity;

**public** Truck(String brand, String model, **int** numsheet, **int** loadCapacity) {

**super**(brand, model, numsheet);

**this**.loadCapacity = loadCapacity;

}

**public** Truck() {

}

**public** Truck(**int** loadCapacity) {

**this**.loadCapacity = loadCapacity;

}

**public** **int** getLoadCapacity() {

**return** loadCapacity;

}

**public** **void** setLoadCapacity(**int** loadCapacity) {

**this**.loadCapacity = loadCapacity;

}

}

**public** **class** MiniBus **extends** Car {

**private** **int** gearnum;

**public** MiniBus(String brand, String model, **int** numsheet, **int** gearnum) {

**super**(brand, model, numsheet);

**this**.gearnum = gearnum;

}

**public** MiniBus(**int** gearnum) {

**this**.gearnum = gearnum;

}

**public** MiniBus() {

}

**public** **int** getGearnum() {

**return** gearnum;

}

**public** **void** setGearnum(**int** gearnum) {

**this**.gearnum = gearnum;

}

}

**public** **class** CarTest {

**public** **static** **void** main(String[] args) {

System.*out*.println("------------- Car -----------");

Car car = **new** Car();

car.setBrand("Honda");

System.*out*.println("Brand = " + car.getBrand());

System.*out*.println("------------- TRUCK -----------");

Truck truck = **new** Truck();

truck.setBrand("Ford");

System.*out*.println("Brand = " + truck.getBrand());

truck.setLoadCapacity(100);

System.*out*.println("Load Capacity = "+truck.getLoadCapacity()+"Kg");

System.*out*.println("------------------ BUS ----------------");

MiniBus bus = **new** MiniBus();

bus.setBrand("Desh");

System.*out*.println("Brand = " + bus.getBrand());

bus.setNumsheet(50);

System.*out*.println("Sheet = "+bus.getNumsheet());

}

}