# **Super Keyword in Java**

The **super** keyword in Java is a reference variable which is used to refer immediate parent class object.

Whenever you create the instance of subclass, an instance of parent class is created implicitly which is referred by super reference variable.

## **Usage of Java super Keyword**

1. super can be used to refer immediate parent class instance variable.
2. super can be used to invoke immediate parent class method.
3. super() can be used to invoke immediate parent class constructor

## **1) super is used to refer immediate parent class instance variable.**

We can use super keyword to access the data member or field of parent class. It is used if parent class and child class have same fields.

1. **class** Animal{
2. String color="white";
3. }
4. **class** Dog **extends** Animal{
5. String color="black";
6. **void** printColor(){
7. System.out.println(color);//prints color of Dog class
8. System.out.println(**super**.color);//prints color of Animal class
9. }
10. }
11. **class** TestSuper1{
12. **public** **static** **void** main(String args[]){
13. Dog d=**new** Dog();
14. d.printColor();
15. }}

Output:

black

white

## **2) super can be used to invoke parent class method**

The super keyword can also be used to invoke parent class method. It should be used if subclass contains the same method as parent class. In other words, it is used if method is overridden.

1. **class** Animal{
2. **void** eat(){System.out.println("eating...");}
3. }
4. **class** Dog **extends** Animal{
5. **void** eat(){System.out.println("eating bread...");}
6. **void** bark(){System.out.println("barking...");}
7. **void** work(){
8. **super**.eat();
9. bark();
10. }
11. }
12. **class** TestSuper2{
13. **public** **static** **void** main(String args[]){
14. Dog d=**new** Dog();
15. d.work();
16. }}

## **3) super is used to invoke parent class constructor.**

The super keyword can also be used to invoke the parent class constructor. Let's see a simple example:

1. **class** Animal{
2. Animal(){System.out.println("animal is created");}
3. }
4. **class** Dog **extends** Animal{
5. Dog(){
6. **super**();
7. System.out.println("dog is created");
8. }
9. }
10. **class** TestSuper3{
11. **public** **static** **void** main(String args[]){
12. Dog d=**new** Dog();
13. }}

#### **Note: super() is added in each class constructor automatically by compiler if there is no super() or this().**