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## Polymorphism (Method Overriding) in Java

## **=> Method Overriding :-**

-> The process of JVM trying to resolve the method call based on reference type is known as method overriding

-> Overriding is the feature by which child class trying to change the implementation of parent class method

-> Rules for method overriding :-

1. Same name

2. Within different class

3. Same parameters

-> No of parameters

-> Type of parameters

-> Sequence of parameters

4. IS-A relationship

## **-> Cases for method overriding :**

1. If we change the return type in method overriding then it will provide compile time error
2. We can provide child class as a return type for overriding method and this concept is known as covariant return type
3. Child class method should have equal or higher access modifier as compared to parent method access modifier in method overriding
4. We cannot override private, final and static methods
5. We cannot override constructors
6. We cannot override main method

=> **Typecasting** : The process of converting one data type into another is known as typecasting

=> **Object Typecasting** :

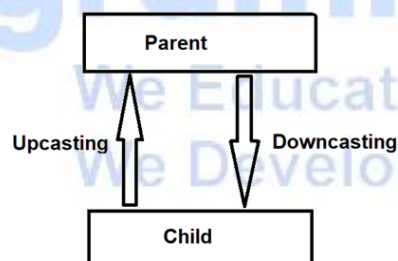
-> The process of converting one object into another object is known as Object Typecasting

-> Object typecasting is of 2 types :-

1. Upcasting
2. Downcasting

```
class A
{
}
class B extends A
{
}
class Test
{
    public static void main(String[] args)
    {
        A ob=new B();
    }
}
```

implicit upcasting



```
class A
{
}
class B extends A
{
}
class Test
{
    public static void main(String[] args)
    {
        B ob=new A(); //error
    }
}
```

implicit downcasting

```
class A
{
}
class B extends A
{
}
class Test
{
    public static void main(String[] args)
    {
        A ob = new B();
        B ob1 = (B) ob;
    }
}
```

Explicit downcasting

## **Interview Questions :-**

1. What is difference between method overloading & method overriding

2. What is upcasting & downcasting ?

-> Upcasting : Object typecasting in which child object is typecasted into parent object

Downcasting : Object typecasting which parent object is typecasted into child object

-> Upcasting : Implicit upcasting is possible

Downcasting : Implicit downcasting is not possible but forcefully we can do i.e. explicit downcasting is possible

3. What is covariant return type ?

-> Before JDK 1.5 version, covariant return type concept was not there



-> But in JDK 1.5 version and above version we can provide any child class as a return type for overriding method

4. Which methods cannot override ?

- > private methods cannot be override
- > final methods cannot be override
- > static methods cannot be override (method hiding concept)

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