Department: BCA

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Subject: JAVA (5<sup>th</sup> sem.)

Topic: Interface in Java (part I)

## **Interface in Java**

- An interface in Java is a blueprint of a class.
- It has static constants and abstract methods.
- > The interface in Java is a mechanism to achieve abstraction.
- There can be only abstract methods in the Java interface, not method body.
- > It is used to achieve abstraction and multiple inheritance in java.
- ➤ In other words, we can say that interfaces can have abstract methods and variables. It cannot have a method body.
- > Java Interface also represents the IS-A relationship.
- It cannot be instantiated just like the abstract class.
- > Since Java 8, we can have **default and static methods** in an interface.
- Since Java 9, we can have private methods in an interface.

## Why use Java interface?

There are mainly three reasons to use interface:

- It is used to achieve abstraction.
- By interface, we can support the functionality of multiple inheritance.
- It can be used to achieve loose coupling.

## Syntax:

```
Interface <interface_name>
{
    // declare constant fields
    // declare methods that abstract
    // by default.
}
```

INTERFACE IN JAVA

## **Example:**

```
interface I1
{
  int a=10;
  void show ();
}

compiler

public static final int a=10;
  public abstract void show ();
}
```

I1.java I1.class

Note: The Java compiler adds public and abstract keywords before the interface method. Moreover, it adds public, static and final keywords before data members.

```
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       interface I1
        int a=10;
        void show();
      1
   5
       class A implements I1
   6
      ₽{
   8
        public void show()
  10 | {
        System.out.println("i am in show method from A class");
  11
        }
  13
  14
       class B implements I1
  15 貝{
  16
          public void show()
  17
  18
          System.out.println("i am in show method from B class");
  19
  21
      class TestI1
  24
       public static void main(String args[])
 25 ₽{
                                Command Prompt
                                                                         26
        I1 obj1=new A();
  27
        I1 obj2=new B();
                                ::\Users\ashishjha\Desktop\java>java TestI1
         obj1.show();
                                am in show method from A class
  29
         obj2.show();
                                . am in show method from B class
                                :\Users\ashishjha\Desktop\java>
```

INTERFACE IN JAVA

**Example:** 

```
C:\Users\ashishjha\Desktop\java\TestBank1.java - Notepad++
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📑 s_ex3 js 🔀 🖶 web1html 🔀 📑 alert1html 🔀 📑 op2html 🔀 📑 op2html 🔀 📑 op2html 🖂 📑 felsetime html 🖂 🛗 felsetime html 🖂 🛗 felsetime html 🖂 🛗 switchday html 🔀 🛅 TestBank1java 🔀 📑 TestI java 🔀
     interface RBI
   2 ₽{
   3
      float rateOfInterest();
   4
     L}
      class SBI implements RBI
   6 ₽{
      public float rateOfInterest()
                                             Command Prompt
                                                                                    8 🖨 {
                                             i am in show method from B class
   9
            return 3.0f;
 10
                                             C:\Users\ashishjha\Desktop\java>javac TestBank1.java
      L}
 11
 12
      class PNB implements RBI
                                             C:\Users\ashishjha\Desktop\java>java TestBank1
 13 ₽{
                                             ROI: 3.0
     public float rateOfInterest()
 14
                                            ROI: 3.25
 15 申 {
                                             C:\Users\ashishjha\Desktop\java>
 16
            return 3.25f;
 17
     L}
 18
 19
     class TestBank1
 20 □{
      | public static void main(String[] args)
         -{
 23
         RBI obj1=new SBI();
 24
         RBI obj2=new PNB();
 25
          System.out.println("ROI: "+obj1.rateOfInterest());
          System.out.println("ROI: "+obj2.rateOfInterest());
 26
 27
          }
 28
      L}
```

INTERFACE IN JAVA