

Object Oriented Programming Using - JAVA

Experiment No: 12

Aim:

Write a program in Java to demonstrate implementation of **multiple inheritance using interfaces**.

Theory:

Java does not support **multiple inheritance** with classes to avoid ambiguity (commonly called the "diamond problem"). However, Java **supports multiple inheritance through interfaces**. A class can implement **multiple interfaces**, thereby achieving multiple inheritance.

Key points:

- Interfaces contain method declarations (abstract methods) and constants.
- A class can implement multiple interfaces using implements.
- All methods of the interfaces must be implemented in the subclass.
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Source Code:

```
// File: MultipleInheritanceUsingInterface.java
interface Printable {
    void print();
}

interface Showable {
    void show();
}

class Document implements Printable, Showable {
    public void print() {
        System.out.println("Printing document...");
    }
    public void show() {
        System.out.println("Showing document...");
    }
}

public class MultipleInheritanceUsingInterface {
    public static void main(String[] args) {
        Document doc = new Document();
        doc.print();
        doc.show();
    }
}
```

Output:

```
Printing document...
Showing document...
```