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Department of Artificial Intelligence & Data Science

Experiment No. 8
Implement a program on multiple inheritance with interface.
Date of Performance:
Date of Submission:



Aim: Implement a program on multiple inheritance with interface.

Objective: Implement multiple inheritance in a program to perform addition, multiplication and transpose operations on a matrix. Create an interface to hold prototypes of these methods and create a class input to read input. Inherit a new class from this interface and class. In main class create object of this child class and invoke required methods.

Theory:

- In Multiple inheritance, one class can have more than one superclass and inherit features from all parent classes. Java does not support multiple inheritance with classes. In java, we can achieve multiple inheritance only through Interfaces.
- An interface contains variables and methods like a class but the methods in an interface are abstract by default unlike a class. If a class implements multiple interfaces, or an interface extends multiple interfaces, it is known as multiple inheritance.
- However, Java supports multiple interface inheritance where an interface extends more than one super interfaces.
- A class implements an interface, but one interface extends another interface. Multiple inheritance by interface occurs if a class implements multiple interfaces or also if an interface itself extends multiple interfaces.
- The following is the syntax used to extend multiple interfaces in Java:

```
access_specifier interface subinterfaceName extends superinterface1, superinterface2, ..... {  
// Body  
}
```

Code:

```
class MultInherit{  
public static void main(String args[])  
{  
Pig a=new Pig();  
a.animalsound();  
a.sleep();  
}
```



```
}  
}  
interface Animal{  
    public void animalsound();  
    public void sleep();  
}  
class Pig implements Animal{  
    public void animalsound(){  
        System.out.println("The Pig says: wee-wee");  
    }  
    public void sleep(){  
        System.out.println("zzzzzzzz");  
    }  
}
```

```
Command Prompt  
Microsoft Windows [Version 10.0.22000.1936]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\tejashree anand>cd C:\Users\tejashree anand\Desktop\tejashree java program  
C:\Users\tejashree anand\Desktop\tejashree java program>javac MultiInheritance.java  
C:\Users\tejashree anand\Desktop\tejashree java program>java MultiInheritance.java  
The Pig says: wee-wee  
zzzzzzzz  
C:\Users\tejashree anand\Desktop\tejashree java program>
```

Conclusion:

Comment on how interface are useful and implemented using java. an interface specifies the behavior of a class by providing an abstract type. As one of Java's core concepts, abstraction, polymorphism, and multiple inheritance are supported through this technology. Interfaces are used in Java to achieve abstraction.25-Oct-2023