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:

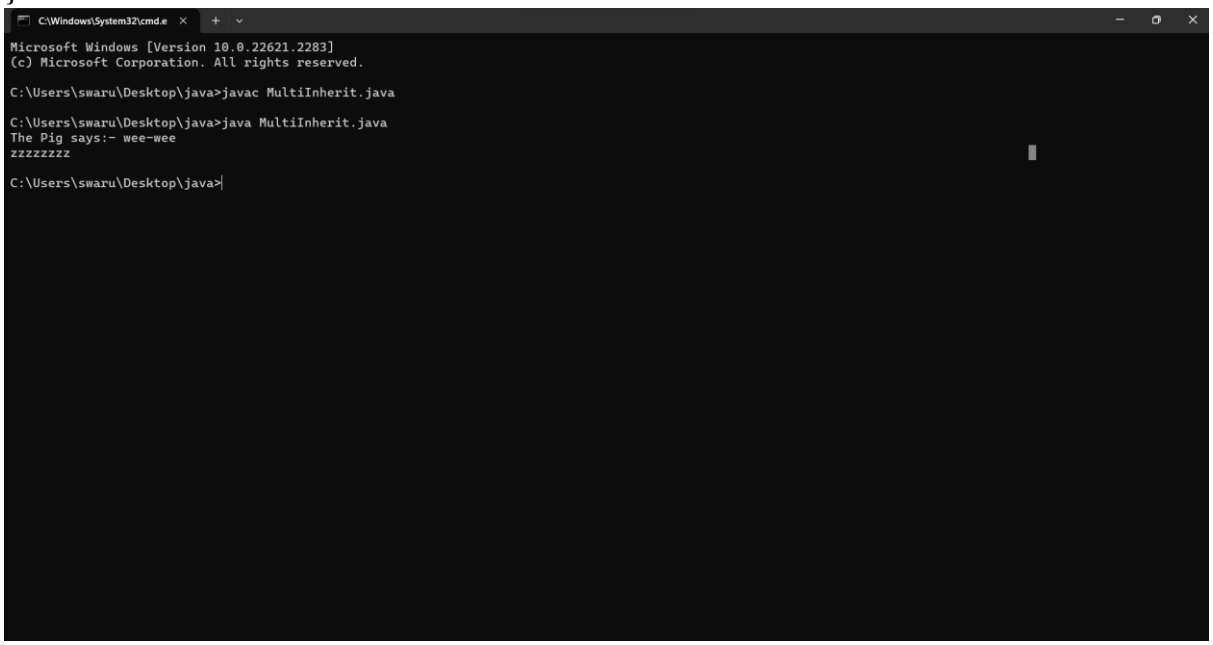
- In Multiple inheritance, one class can have more than one superclass and inherit features from all parent classes. Java does not support multiple inheritance with classes. In java, we can achieve multiple inheritance only through Interfaces.
- An interface contains variables and methods like a class 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");
}
}
```



Conclusion:

Interfaces in Java serve as a critical tool for establishing a predefined agreement that dictates a specific set of methods that any class implementing the interface must follow.

Abstraction: Interfaces offer a way to create a method blueprint without delving into the nitty-gritty of how the methods should be executed. This promotes an abstract approach, emphasizing the "what" a class should accomplish rather than the "how" it achieves it.