VIT Vidyalankar Institute of Technology Accredited A+ by NAAC	DEPARTMENT OF COMPUTER ENGINEERING

Experiment No. 09

Semester	S.E. Semester III – Computer Engineering
Subject	Skill Based Lab Course: OOP with Java (CSL304)
Subject Professor In-charge	Prof. Swapnil S. Sonawane
Assisting Teachers	Prof. Swapnil S. Sonawane

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Title:
Program on multiple inheritance

Objective:
To implement the concept of inheritance and interfaces.

Explanation:

Multiple inheritance is a feature of some object-oriented computer programming languages in which an object or class can inherit characteristics and features from more than one parent object or parent class. It is distinct from single inheritance, where an object or class may only inherit from one particular object or class.

To reduce the complexity and simplify the language, multiple inheritance is not supported in java.

Consider a scenario where A, B, and C are three classes. The C class inherits A and B classes. If A and B classes have the same method and you call it from child class object, there will be ambiguity to call the method of A or B class.

Since compile-time errors are better than runtime errors, Java renders compile-time error if you inherit 2 classes. So whether you have same method or different, there will be compile time error.

An interface is declared by using the interface keyword. It provides total abstraction; means all the methods in an interface are declared with the empty body, and all the fields are public, static and final by default. A class that implements an interface must implement all the methods declared in the interface.

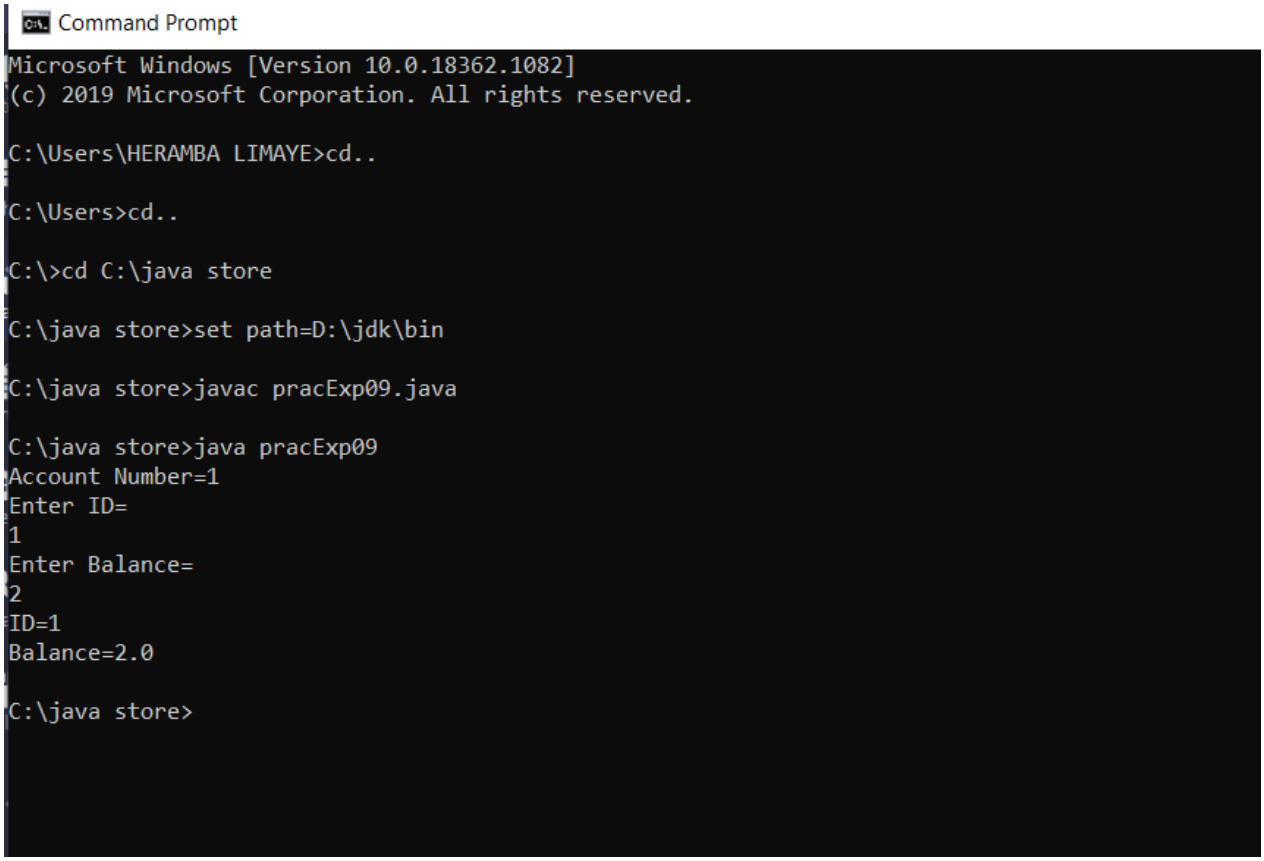
These interface are used to achieve multiple inheritance like effect in java as many inheritance can be used as parent to a class . For this we have implements keyword.

Program Code:

```
import java.util.*;
interface account
{
int accno=1;
void show();
}
class person
{
int id;
void accept()
{
Scanner t=new Scanner (System.in);
System.out.println("Enter ID=");
id=t.nextInt();
}
void display()
{
System.out.println("ID="+id);
}
}
class customer extends person implements account
{
double balance;
void accept()
{
super.accept();
Scanner t=new Scanner (System.in);
System.out.println("Enter Balance=");
balance=t.nextDouble();
```

```
}
void display()
{
super.display();
System.out.println("Balance="+balance);
}
public void show()
{
System.out.println("Account Number="+accno);
}
}
class pracExp09
{
public static void main(String args[])
{
customer c=new customer();
c.show();
c.accept();
c.display();
}
}
```

Output:



Conclusion:

Multiple inheritance is a much needed concept for Object oriented programming languages as it allows abstraction and code reusability. Java had to lose multiple inheritance due to use of super keyword but java covered that by introduction of interfaces .Interfaces are a form of abstract classes and are important part of Java.
