S.No: 13	Exp. Name: ***Write a Java program to implement Multilevel Inheritance***	Date:2023-10-06

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Aim:

Write a Java program to illustrate the **multilevel inheritance** concept.

Create a class `Student`

- contains the data members **id** of **int** data type and **name** of **string** type
- write a method **setData()** to initialize the data members
- write a method **displayData()** which will display the given **id** and **name**

Create a class `Marks` which is derived from the class `Student`

- contains the data members **javaMarks**, **cMarks** and **cppMarks** of **float** data type
- write a method **setMarks()** to initialize the data members
- write a method **displayMarks()** which will display the given data

Create another class `Result` which is derived from the class `Marks`

- contains the data members **total** and **avg** of **float** data type
- write a method **compute()** to find total and average of the given marks
- write a method **showResult()** which will display the total and avg marks

Write a class `MultilevelInheritanceDemo` with the **main()** method which will receive five arguments as **id**, **name**, **javaMarks**, **cMarks** and **cppMarks**.

Create object only to the class `Result` to access the methods.

If the input is given as command line arguments to the **main()** as **"99", "Lakshmi", "55.5", "78.5", "72"** then the program should print the output as:

```
Id : 99
Name : Lakshmi
Java marks : 55.5
C marks : 78.5
Cpp marks : 72.0
Total : 206.0
Avg : 68.666664
```

Note: Please don't change the package name.

Source Code:

q11264/MultilevelInheritanceDemo.java

```
package q11264;
class Student
{
   int id;
   String name;
   void setData(String a,String b)
   {
      id=Integer.parseInt(a);
      name=b;
   }
   void displayData()
   {
      System.out.println("Id : "+id);
```

```
      System.out.println("Name : "+name);
   }
}
class Marks extends Student
{
   static float javaMarks,cppMarks,cMarks;
   void setMarks(String a[])
   {
      super.setData(a[0],a[1]);
      javaMarks=Float.parseFloat(a[2]);
      cMarks=Float.parseFloat(a[3]);
      cppMarks=Float.parseFloat(a[4]);
   }
   void displayMarks()
   {
      super.displayData();
      System.out.println("Java marks : "+javaMarks);
      System.out.println("C marks : "+cMarks);
      System.out.println("Cpp marks : "+cppMarks);
   }
}
class Result extends Marks
{
   float avg,total;
   void compute(String a[])
   {
      Marks m=new Marks();
      super.setMarks(a);
      total=m.javaMarks+m.cMarks+m.cppMarks;
      avg=(total/3);
   }
   void showResult()
   {
      super.displayMarks();
      System.out.println("Total : "+total);
      System.out.println("Avg : "+avg);
   }
}
class MultilevelInheritanceDemo
{
   public static void main(String a[])
   {
      Result r=new Result();
      r.compute(a);
      r.showResult();
   }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Id : 99
Name : Geetha

Java marks : 56.0
C marks : 75.5
Cpp marks : 66.6
Total : 198.1
Avg : 66.03333

Test Case - 2
User Output
Id : 199
Name : Lakshmi
Java marks : 55.5
C marks : 78.5
Cpp marks : 78.0
Total : 212.0
Avg : 70.666664

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