**Final Keyword In Java**

The **final keyword** in java is used to restrict the user. The java final keyword can be used in many context. Final can be:

1. variable
2. method
3. class

**Final variable**

If any variable is declared as final its value cannot be changed( constant)

The final keyword stops value change of a variable, stops method overriding, stops inheritance

Example

|  |
| --- |
| class circle1{final double pi=3.14;double area(int r){pi=45;return(pi\*r\*r);}}class finaleg1{public static void main(String args[]){circle1 obj=new circle1();double a;a=obj.area(5);System.out.println("area is = "+a);}} |

In the above program the variable pi is defined as final. But in the method area its value is changed as pi=45. While compiling this program this will generate the compiler error as it tries to modify the final variable.

Output

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| --- |
| D:\javaprgs>javac finaleg1.javafinaleg1.java:6: error: cannot assign a value to final variable pipi=45;^1 error |

**Final method**

**Method declared as final cannot be overridden**

Example

|  |
| --- |
| class circle1{final double pi=3.14;final double area(int r){return(pi\*r\*r);}}class rectangle extends circle1{double area(int l){return(l\*l);}}class finaleg2{public static void main(String args[]){rectangle obj=new rectangle();double a;a=obj.area(5);System.out.println("area is = "+a);}} |

In the above program method **area** is declared as **final**.

But the class **circle1** in which is declared is overridden in class **rectangle** which inherits that. This will generate an error message during compilation as follows

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| --- |
| D:\javaprgs>javac finaleg2.javafinaleg2.java:12: error: area(int) in rectangle cannot override area(int) in circle1double area(int l) ^ overridden method is final1 error |

**Final class**

A class which is declared as final cannot be extended. It cannot be used for inheritance

|  |
| --- |
| final class shape2d{ void display(){System.out.println("this is shape2d final class");}}class triangle extends shape2d{void display(){System.out.println("this is triangle class");}}class finaleg3{public static void main(String args[]){triangle obj=new triangle();obj.display();}} |

Output

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| --- |
| D:\javaprgs>javac finaleg3.javafinaleg3.java:9: error: cannot inherit from final shape2dclass triangle extends shape2d ^1 error |