**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

|  |
| --- |
| D:\javaprgs>javac finaleg1.java  finaleg1.java:6: error: cannot assign a value to final variable pi  pi=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

|  |
| --- |
| D:\javaprgs>javac finaleg2.java  finaleg2.java:12: error: area(int) in rectangle cannot override area(int) in circle1  double area(int l)  ^  overridden method is final  1 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

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