# **Abstract Class in Java**

In Java, abstract class is declared with the abstract keyword. It may have both abstract and non-abstract methods(methods with bodies). An abstract is a Java modifier applicable for classes and methods in Java but *not for Variables*.

**What is Abstract Class in Java?**

Java abstract class is a class that can not be instantiated by itself, it needs to be subclassed by another class to use its member data and methods. An abstract class is declared using the “abstract” keyword in its class definition.

### **Illustration of Abstract class**

abstract class Shape

{

int color;

// An abstract function

abstract void draw();

}

1. An instance of an abstract class can not be created.
2. Constructors are allowed.
3. We can have an abstract class without any abstract method.
4. There can be a **final method** in abstract class but any abstract method in class(abstract class) can not be declared as final or in simpler terms final method can not be abstract itself as it will yield an error: “Illegal combination of modifiers: abstract and final”
5. We can define static methods in an abstract class
6. We can use the **abstract keyword** for declaring ***top-level classes (Outer class) as well as inner classes*** as abstract
7. If a **class** contains at least **one abstract method** then compulsory should declare a class as abstract
8. If the **Child class** is unable to provide implementation to all abstract methods of the **Parent class** then we should declare that **Child class as abstract** so that the next level Child class should provide implementation to the remaining abstract method

We can have ***an abstract class without any abstract method***. This allows us to ***create classes that cannot be instantiated but can only be inherited***.