

Abstraction:

- hide the implementation
↳ method block.
- Shows only the functionality.
↳ method declaration.



How to achieve abstraction?

- We should go by abstract class and interface.
- It should be performed with Inheritance and method overriding.

Abstract class and Abstract method

abstract class classname

↳ abstract method.

abstract [AM] return type method name ([+ - * / %]);

;

Concrete class and concrete method
(Sub)

class Concrete extends abstract class {
 @Override
 - - - () {

} }

ABSTRACT CLASS:

If the class is prefixed with an abstract modifier then it is known as an abstract class.
We can't create the object (INSTANCE) for an abstract class.

NOTE :

- We can't instantiate an abstract class
- An abstract class can have both abstract and concrete methods.
- If a class has at least one abstract method either declared or inherited but not overridden it is mandatory to make that class an abstract class.

Implementation of abstract method :

- If a class extend abstract class then it should give implementation to all the abstract method of the superclass.
- If inheriting class doesn't like to give implementation to the abstract method of superclass then it is mandatory to make subclass as an abstract class then the next level child class is responsible to give implementation to the abstract methods.
- If a subclass is also becoming an abstract class then the next level child class is responsible to give implementation to the abstract methods.

STEPS TO IMPLEMENT ABSTRACT METHOD:

STEP 1:

Create a class.

STEP 2:

Inherit the abstract class/ component.

STEP 3:

Override the abstract method inherited (Provide implementation to the inherited abstract method).

Abstraction?

It is a design process of hiding the implementation and showing only the functionality (only declaration) to the user is known as abstraction.

HOW TO ACHIEVE ABSTRACTION IN JAVA?

- In java, we can achieve abstraction with the help of abstract classes and interfaces.
- We can provide implementation to the abstract component with the help of inheritance and method overriding.

ABSTRACT MODIFIER :

- The abstract is a modifier, it is a keyword.
- It is applicable for methods and classes.



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CONCRETE CLASS:

The class which is not prefixed with an abstract modifier and doesn't have any abstract method, either declared or inherited is known as a concrete class.

NOTE:

In java, we can create objects only for the concrete class.

CONCRETE METHOD:

The method which gives implementation to the abstract method is known as the concrete method.

Freeze



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abstract class classname

↳ abstract method

abstract [M] return_type method_name ([param]);

↳ Concrete class and concrete method (sub)

```
class ConcreteClass extends abstract class {  
    @Override  
    - - - ( ) {  
    }  
}
```

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Concrete class and concrete method
(sub)

class ConcreteClass extends abstractClass

@Override

--- () {

}