

SNS COLLEGE OF ENGINEERING

Coimbatore-107 An Autonomous Institution



COURSE NAME : 23CSB201 & Object Oriented Programming

II YEAR/ III SEMESTER

UNIT – II INHERITANCE, PACKAGES, INTERFACE

Topic: Abstract classes

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Department of Computer Science and Technology



Real time example









Introduction



- A class which is declared with the abstract keyword is known as an abstract class in Java
- It can have abstract and non-abstract methods (method with the body)
- Abstraction
 - process of hiding the implementation details and showing only functionality to the user
- Ways to achieve Abstraction
 - Abstract class (0 to 100%)
 - Interface (100%)



Abstract class



- A class which is declared as abstract is known as an **abstract class**
- An abstract class must be declared with an abstract keyword



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Abstract class
 abstract class Classname
 { }

• Abstract Methods

abstract return-type method-name();







```
abstract class Bike
```

```
abstract void run();
```

```
class Honda extends Bike
```

```
void run()
```

```
System.out.println("running safely..");}
public static void main(String args[]){
Bike obj = new Honda();
obj.run();
```



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Topic: Final method & classes

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Introduction





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Final keyword

- The final keyword in java is used to restrict the user
- Final can be:
 - variable
 - method
 - class



final variable



 If you make any variable as final, you cannot change the value of final variable(It will be constant)

```
• Example
   class Bike
    final int speedlimit=90;//final variable
    void run()
    speedlimit=400;
    public static void main(String args[])
    Bike obj=new Bike();
    obj.run();
```



•

final method



• If you make any method as final, you cannot override it

```
Example
  class Bike{
  final void run() // final method
  System.out.println("running");
  class Honda extends Bike
    void run()
                 System.out.println("running safely with 100kmph");
    public static void main(String args[])
    Honda honda= new Honda();
    honda.run();
```



final class



- If you make any class as final, you cannot extend it.
- Example

```
final class Bike{}
class Honda1 extends Bike
void run()
    System.out.println("running safely with 100kmph");
public static void main(String args[])
Honda1 honda= new Honda1();
honda.run();
```



Scenario



- Final Variable: Imagine you have a student ID that remains the same throughout your academic journey
- Final Method: A grading system that must not be modified by students.
- Final Class: A university degree that cannot be changed once obtained.







• Java : the complete Reference (Eleventh Edition), Herbert Schildt, 2018.







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