## Smart Programming: You Tube Channel

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**Abstraction in Java** 

### **Smart Programming (Mohali, Chandigarh India)**

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#### **OOP Features**

#### java basic structure

class - it contains variables and methods methods - used to perform task

objects - memory location which contains data

- used to access variables and methods

#### code reusability

IS-A (Inheritance) HAS-A (association) USES-A (dependency)

### security

Data-Hiding Abstraction Encapsulation

Tightly Encapsulated Class

improve the shareability

Constructors - used to initialize the object

(used to provide instance varibles values

into objects at object creation time)

static

modularity

packages

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## => Data-Hiding :-

- -> Data-Hiding is the process of hiding the data from outside users
  - -> It is achieved by private access-modifier
  - -> Example :

class Account

{

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```
private int balance; //data hiding
```

- -> To access or modify or update private variables java provide some special methods i.e. getter and setter methods
- -> It is highly recomended to declare variables (data members) as private

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## => Abstraction :-

- -> Abstraction is hiding the details (hiding the implementation part) and just highlight the main services
- -> Real world example: Car (internal working of breaks, gears etc are hidden from user), Bank (internal working of credit/debit is hided form user

and only main component i.e. textfield and button is shown) etc

-> It is achieved by abstract class & interfaces

### => Abstract class :-

- -> Abstract class are those which can contain both concrete methods and abstract methods
  - -> Syntax:

abstract class Test

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//concrete methods void sum()

//coding

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```
}
//abstract methods
abstract void show();
}
```

### => Abstract method :-

- -> For example : Devils
- -> 1. Abstract methods are those whose implementation part is hided
- 2. Abstract methods are those which does not have body or implementation part
- 3. Abstract methods are those which have only declaration part, not implementation
  - -> Syntax :
     abstract void sum();
- -> To declare abstract methods we have to use "abstract" keyword

### => Points to remember :-

- 1. If any class contains abstract methods then that class should be declared as abstract class
- 2. If we declare any abstract class, then it can contain both concrete methods as well as abstract methods and it can contain only concrete methods
- 3. We cannot create an object of abstract class or we cannot instantiate an abstract class but we can declare reference for an abstract class
- 4. If any class inherits abstract class then it should implement all the abstract methods or that class should also be declared as abstract
- 5. Whenever we use abstraction concept we are using method overriding concept also
  - 6. Abstract class can have constructors
  - 7. Abstract class can inherit concrete class
  - 8. We can overload abstract methods

### **Interview Questions:-**

- 1. What is difference between concrete methods and abstract methods?
- -> Concrete Methods: which have both declaration and implementation part

Abstract Methods: which have only declaration part

-> Concrete Methods : we dont need to use any keyword

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Abstract Methods: we have to use "abstract" keyword

- -> Concrete Methods : provides less shareability Abstract Methods : provides more shareability
- -> Concrete Methods : can be provided in concrete class and abstract class

Abstract Methods : can be provided only in abstract class

- 2. What is difference between concrete class and abstract class?
- -> Concrete Class: which can contain only concrete methods

Abstract Class: which can contain both concrete methods as well as abstract methods

-> Concrete Class: we can create an object of concrete class

Abstract Class: we cannot create an object of abstract class

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-> Concrete Class: it does not require any specified keyword

Abstract Class: it can be declared only by using "abstract" keyword

## **Company Links & Contacts**

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