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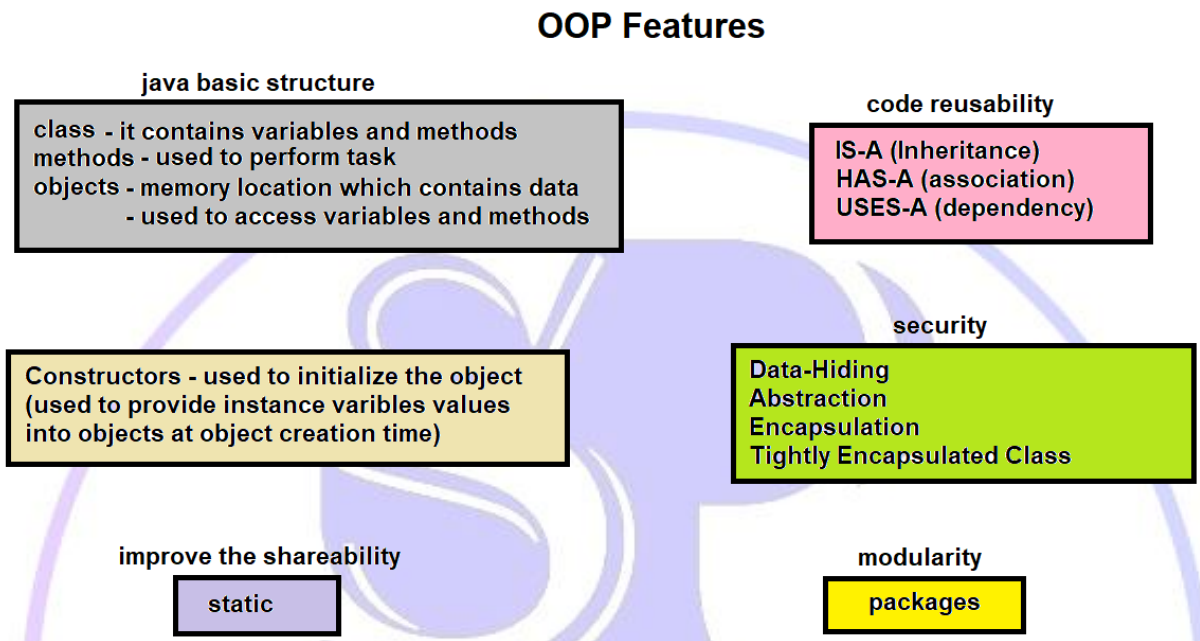
Abstraction in Java



=> Data-Hiding :-

-> Data-Hiding is the process of hiding the data from outside users

-> It is achieved by private access-modifier

-> Example :

```
class Account
{
```

```
        private int balance;        //data hiding
        //code---
    }
```

-> 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

{
    //concrete methods
    void sum()
    {
        //coding
```

```
        }
        //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

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

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

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

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