

ABSTRACTION

Abstraction in Java || what is abstract class and abstract methods in Java (Hindi)

Dont get confused between Abstraction & Encapsulation

Abstraction	Encapsulation
1. Abstraction is detail hiding (implementation hiding)	1. Encapsulation is data hiding (information hiding)
2. Data abstraction deals with exposing the interface to the user and hiding the details of implementation.	2. Encapsulation groups together data and methods that act upon the data

Abstraction is hiding internal implementation & just highlighting the setup services that we are offering.

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Abstraction

- 1) Abstract class (0-100%)
- 2) Interfaces (100%)

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Vehicle

↳ no.-of.-types; x
start(); x

Car

↳ no.-of.-types=4
↳ start()
 2 sop("starts with key");
 3

Scooter

↳ no.-of.-types=2
↳ start()
 2 sop("starts with kick");
 3

```

class Vehicle
{
    int no.-of.-types;
    abstract void start();
}
  
```

1. A method without body (no implementation) is known as abstract method.

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Vehicle

↳ no.-of.-types; x
start(); x

Car

↳ no.-of.-types=4
↳ start()
 2 sop("starts with key");
 3

Scooter

↳ no.-of.-types=2
↳ start()
 2 sop("starts with kick");
 3

```

abstract class Vehicle
{
    int no.-of.-types;
    ① abstract void start();
}
  
```

2. A method must always be declared in an abstract class, or we can say that if a class has an abstract method, it should be declared abstract as well.

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Abstraction in Java || what is abstract class and abstract methods in Java (Hindi)

Vehicle

```

no-of-types: x
start(); x

```

Car

```

no-of-types = 4
start()
  2 sop("starts with key");
  3

```

Scooter

```

no-of-types = 2
start()
  2 sop("starts with kick");
  3

```

* class Car extends Vehicle

```

{
  void start()
  {
    sop("starts with key");
  }
}

```

3. If a regular class extends an abstract class, then the class must have to implement all the abstract methods of abstract parent class or it has to be declared abstract as well.

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Vehicle

```

no-of-types: x
start();

```

Car

```

no-of-types = 4
start()
  2 sop("starts with key");
  3

```

Scooter

```

no-of-types = 2
start()
  2 sop("starts with kick");
  3

```

* class Car extends Vehicle

```

{
  void start()
  {
    sop("starts with key");
  }
}

```

* class Scooter extends Vehicle

```

{
  void start()
  {
    sop("starts with kick");
  }
}

```

4. Abstract methods in an abstract class are meant to be overridden in derived concrete classes otherwise compile-time error will be thrown.

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Vehicle

no.-of.-types; x
start(); x

Car

no.-of.-types = 4
start()
2 sop("starts with key");
3

Scooter

no.-of.-types = 2
start()
2 sop("starts with kick");
3

abstract class Vehicle → object creat X

```

{
  ✓ int no.-of.-types;
  abstract void start();
}
  
```

①

* class Car extends Vehicle

```

{
  void start()
  {
    sop("starts with key");
  }
}
  
```

* class Scooter extends Vehicle

```

{
  void start()
  {
    sop("starts with kick");
  }
}
  
```

5. Abstract classes cannot be instantiated, means we can't create an object of Abstract class.

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if We able to create an object , then we are also able to call the method , but the method doesn't have body then what's the use of that.

But we can make reference of that.