

# Static vs. Instance Methods

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## Static vs. Instance Methods

# Static Methods

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Static methods are declared using a static modifier.

Static methods can't access instance methods and instance variables directly.

They're usually used for operations that don't require any data from an instance of the class (from '**this**').

If you remember, the `this` keyword is the current instance of a class.

# Static Methods

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Inside a static method, we can't use the **this** keyword.

Whenever you see a method that doesn't use instance variables, that method should probably be declared as a static method.

For example, main is a static method and it's called by the Java virtual machine when it starts the Java application.

# Static Methods Example


```
class Calculator {  
  
    public static void printSum(int a, int b) {  
        System.out.println("sum= " + (a + b));  
    }  
}
```

```
public class Main {
```

```
    public static void main(String[] args) {  
        Calculator.printSum(5, 10);  
        printHello();    // shorter from of Main.printHello();  
    }  
  
    public static void printHello() {  
        System.out.println("Hello");  
    }  
}
```

**static methods** are called as  
**ClassName.methodName();** or  
**methodName();** only if in the same class

In this example  
Calculator.printSum(5,10);  
printHello();



# Instance Methods

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Instance methods belong to an instance of a class.

To use an instance method, we have to instantiate the class first, usually by using the **new** keyword.



# Instance Methods

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Instance methods can access instance methods and instance variables directly.

Instance methods can also access static methods and static variables directly.

# Instance Method Example

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```
class Dog {  
  
    public void bark() {  
        System.out.println("woof");  
    }  
}  
  
public class Main {  
  
    public static void main(String[] args) {  
  
        Dog rex = new Dog();  
        rex.bark();  
    }  
}
```

*// create instance*  
*// call instance method*

# Static or Instance Method

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