

# Using Methods

## Writing your own methods

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# Topics list

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1. Quick Recap of method **terminology**:

- Return type
- Method names
- Parameter list

2. **Writing your own methods**:

- With no parameters
- With parameters
- That return data

# Recap: Methods in Processing

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- A method is comprised of  
**a set of instructions that performs some task.**
- When we invoke (**call**) the method, it performs the task.
- Some methods we have used are:
  - **main** – (we write the code for main)
  - **print()**, **println()** – we call these methods

# Recap: Method terminology

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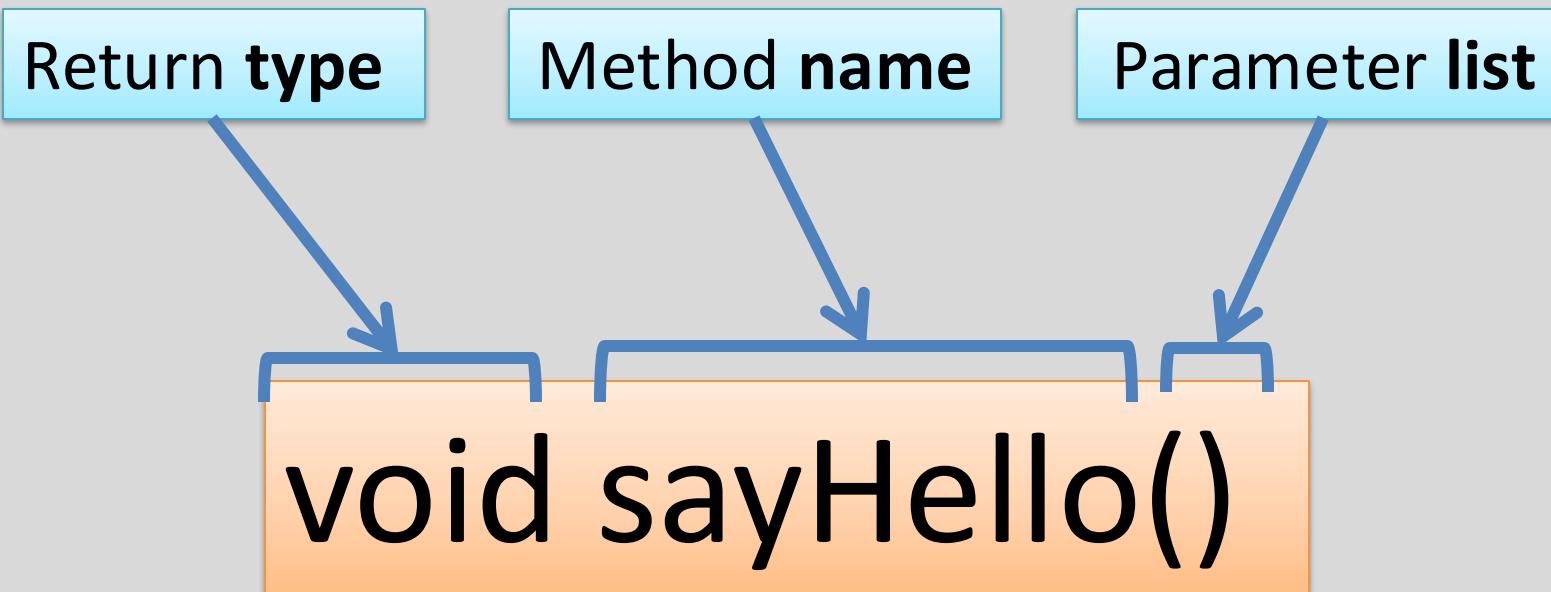
Method **signature / header**

Method **body**

```
void sayHello()  
{  
    System.out.println("hello");  
}
```

# Recap: Method signature

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# Topics list

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## 1. Recap of method **terminology**:

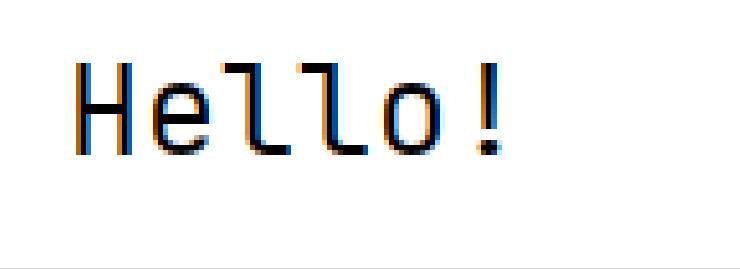
- Return type
- Method names
- Parameter list

## 2. Writing your own methods:

- 
- I. With no parameters
  - II. With parameters
  - III. That return data

# Writing methods with NO parameters

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Hello!

- Write a method that prints a hello message,
  - every time it is called (invoked) it will print the message.

# Example 1

Hello!

Method definition

```
1 public class MethodExamples
2 {
3     // 1. Method with NO parameter and NO return
4     public void sayHello(){
5         System.out.println("Hello!");
6     }
7 }
```

Create an instance of  
the class

Method call

```
1 public class Driver
2 {
3     // main method to test all methods
4     public static void main(String[] args){
5         MethodExamples me = new MethodExamples(); // create an object
6         // call method with no parameters, no return
7         me.sayHello();
8     }
9 }
```



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# Writing methods with parameters

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- Now update the code so that you can:

**pass in** a String to hold a name – this method will print a message using that name

```
Driver.main({ });
Hello!
Hello, Rory McIlroy, your age is 36 years old
```

## Example 2

Driver.main({ });

Hello!

Hello, Rory McIlroy, your age is 36 years old

MethodExamples X

Compile

Undo

Cut

Copy

Paste

Find...

Close

```
1 public class MethodExamples
2 {
3     // 1. Method with NO parameter and NO return
4     public void sayHello(){
5         System.out.println("Hello!");
6     }
7     // 2. Method with PARAMETERS and NO return
8     public void greet(String name, int age){
9         System.out.println("Hello, " + name + ", your age is "
10            + age + " years old");
11    }
```

Driver X

Compile

Undo

Cut

Copy

Paste

Find...

Close

Source

```
1 public class Driver
2 {
3     // main method to test all methods
4     public static void main(String[] args){
5         MethodExamples me = new MethodExamples(); // create an object
6         // 1.call method with no parameters, no return
7         me.sayHello();
8         // 2.call method with parameter / no return
9         me.greet("Rory McIlroy", 36);
10    }
11 }
```



# Using Scanner

## Example 3

```
Driver.main({ });

Hello!
Hello, Rory McIlroy, your age is 36 years old
Enter your name:
Calean Doris
Enter your age:
27
Hello, Calean Doris, your age is 27 years old
```

MethodExamples X

Compile Undo Cut Copy Paste Find... Close

```
1 public class MethodExamples
2 {
3     // 1. Method with NO parameter and NO return
4     public void sayHello(){
5         System.out.println("Hello!");
6     }
7     // 2. Method with PARAMETERS and NO return
8     public void greet(String name, int age){
```

Driver X

Compile Undo Cut Copy Paste Find... Close Source Code

```
1 import java.util.Scanner;
2
3 public class Driver
4 {
5     // main method to test all methods
6     public static void main(String[] args){
7         Scanner input = new Scanner(System.in); // create the scanner object
8         MethodExamples me = new MethodExamples(); // create the 'me' object.
9         // 1.call method with no parameters, no return
10        me.sayHello();
11        // 2.call method with parameter / no return
12        me.greet("Rory McIlroy", 36);
13        //3. call method using input data
14        System.out.println("Enter your name: ");
15        String name = input.nextLine();
16
17        System.out.println("Enter your age: ");
18        int age = input.nextInt();
19
20        me.greet(name, age);
21 }
```

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## 1. Recap of method **terminology**:

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# Writing methods that return data

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- Write a method called **timesTwo**.
- This method should
  - take in one **int** parameter.
  - multiply this **int** by 2 and
  - return it back to where the **timesTwo** method was called from.
  - The returned value should be **printed to the console**.

# Example 3.4

Alternative implementations of **timesTwo**:

```
int timesTwo(int val){  
    val = 2 * val;  
    return val;  
}
```

```
int timesTwo(int val){  
    val *= 2;  
    return val;  
}
```

```
int timesTwo(int val){  
    return val *= 2;  
}
```

```
public class MethodExamples { 2 usages  
    // 1 Method with NO parameters and NO return  
    public void sayHello() { 1 usage  
        System.out.println("Hello!");  
    }  
    // 2 Method with PARAMETERS and NO return  
    public void greet(String name, int age) { 1 usage  
        System.out.println("Hello, " + name + ", you are "  
            + age + " years old.");  
    }  
    // 3 Method with PARAMETERS and WITH return  
    public int timesTwo(int a) { 1 usage  
        return a * 2;  
    }
```

```
} public class Driver {  
    // Main method to test them all  
    public static void main(String[] args) {  
        MethodExamples me = new MethodExamples(); //create an object  
        // 1 Call method with no parameters / no return  
        me.sayHello();  
        // 2 Call method with parameter / no return  
        me.greet( name: "Mairead", age: 21);  
        // 3 Call method with parameters / with return  
        int sum = me.timesTwo( a: 5);  
        System.out.println("5 * 2 = " + sum);  
    }  
}
```

# Questions?

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