

3. Methods

Java uses methods to accomplish predefined tasks. A method is code that runs when it is called. When you write a program, and realize that you are writing the same code over and over, it's time to put that code into a method. Another definition of a Java Method is that it is a collection of statements that are written together, and executed together to perform a task.

What is a method declaration?

```
modifier returnType methodName (datatype1 par1, datatype2 par2) {  
    BodyOfMethod  
}
```

Here, these parts of the method declaration are explained below:

- **modifier** – modifier -- *public, protected, default* and *private*
- **returnDatatype** – the return datatype (Can be a Java primitive datatype, an Object, or a Collection of a datatype or an Object, or can be **void**).
- **methodName** – name of the method
- **datatype1, datatype2** – datatypes of the parameters
- **par1, par2** – formal parameters
- **datatype1 par1, datatype2 par2** – list of parameters (Can be as many as you need, separated by commas)
- **BodyofMethod** → this is where you put your code... anything that you want to accomplish in that particular method. All Java code, and will include variable declarations, method calls, etc.

Let's define a method here:

```
public static void sumTwoNumsPrintResult (int number1, int number2) {  
  
    int sum = 0;  
  
    sum = number1 + number2;  
  
    System.out.println("The sum is: " + sum);  
  
    // No return statement, because the returnType is void!  
  
}
```

What if we want to return the result?

```
public static int sumTwoNumsReturnResult (int number1, int number2) {  
  
    int sum = 0;  
  
    sum = number1 + number2;  
  
    return sum;  
  
}
```

Let's call these two functions:

```
public class ExampleJavaMethodClass {  
  
    public static void main(String[] arg) {  
  
        //Variable Declarations – visible in Main ONLY!  
  
    }  
}
```

```
int firstNumber = 3;

int secondNumber = 7;

//Call to first Method – passing variables into this Method as Parameters!

sumTwoNumsPrintResult(firstNumber,secondNumber)

//Additional Variable Declarations – visible in Main ONLY!

int result = 0;

//Call to second Method

result = sumTwoNumsReturnResult(firstNumber,secondNumber);

System.out.println("The sum is: " + result);

} // End of main()

}
```