Methods and Method Declaration in Java

A method in Java is a block of statements that has a name and can be executed by calling (also called invoking) it from some other place in your program. Along with fields, methods are one of the two elements that are considered members of a class. (Constructors and initializers are not considered class members.)

Every program must have at least one method for the program to accomplish any work. And every program must have a method named main, which is the method first invoked when the program is run.

All methods — including the main method — must begin with a method declaration. Here’s the basic form of a method declaration:

visibility [static] return-type method-name (parameter-list)

{

statements...

}

The following list describes the method declaration piece by piece:

visibility: The visibility of a method determines whether the method is available to other classes. The options are

public: Allows any other class to access the method

private: Hides the method from other classes

protected: Lets subclasses use the method but hides the method from other classes

static: This optional keyword declares that the method is a static method, which means that you can call it without first creating an instance of the class in which it’s defined. The main method must always be static, and any other methods in the class that contains the main method usually should be static as well.

return-type: After the word static comes the return type, which indicates whether the method returns a value when it is called — and if so, what type the value is. If the method doesn’t return a value, specify void.

If you specify a return type other than void, the method must end with a return statement that returns a value of the correct type.

method-name: Now comes the name of your method. The rules for making up method names are the same: Use any combination of letters and numbers, but start with a letter.

parameter list: You can pass one or more values to a method by listing the values in parentheses following the method name. The parameter list in the method declaration lets Java know what types of parameters a method should expect to receive and provides names so that the statements in the method’s body can access the parameters as local variables.