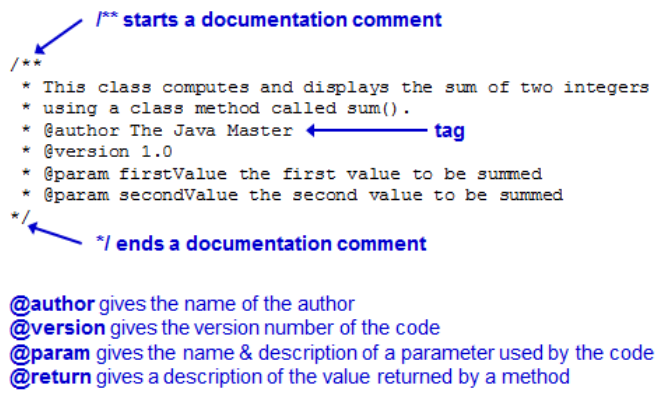
Introduction to Programming Using Java
605.201

Creating Documentation With `javadoc`

By now you already know how to include source code comments in your Java programs using `/* … */` and `//`. There is a third way that can be used to produce formal documentation for your programs. This involves using something called *documentation comments* in conjunction with a tool called `javadoc` that comes with the JDK.

To use the `javadoc` tool you must add special comments, called documentation comments (also called `javadoc` comments) into the source code using a specific syntax, as illustrated below.



A `/**` starts a documentation comment and a `*/` ends a documentation comment. Documentation comments may also include things called *tags*. Each tag starts with an @ symbol followed by a tag name. Each tag must appear on a separate line, and includes special information such as author name, version number, parameters used by a method, and the value returned by a method. There are other tags, but these four are the ones most commonly used.

When a source code file containing documentation comments is processed by the `javadoc` utility, an HTML document is produced that formats the information in a standard way and which can be viewed in any web browser. If you've ever looked up any information about Java classes on Sun's website, you've probably recognized the standard format that is used. That's exactly the format that can be generated for your own classes.

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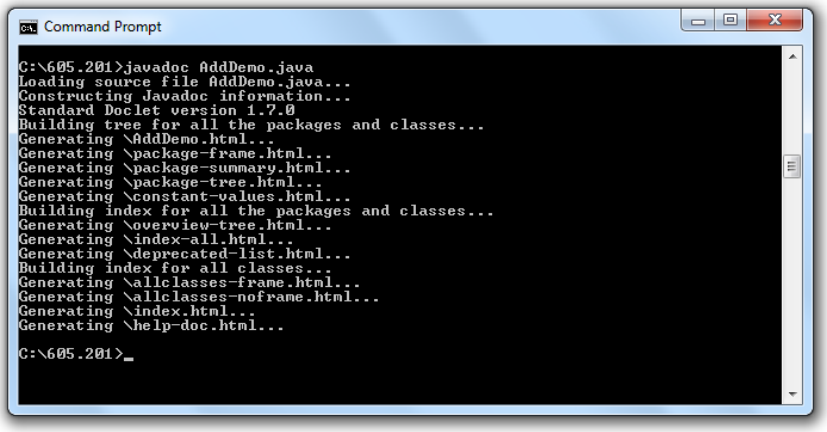
Let's take an example to see how the `javadoc` utility works. Consider the following Java source code:

```
/**
 *  This class computes and displays the sum of two integers
 *  using a static method called sum().
 *  @author Dr. Jerry Java
 *  @version 1.0
*/
 public class AddDemo
 {
   public static void main( String [] args )
   {
    int firstValue = 10;
    int secondValue = 20;
    System.out.println( "The sum is " + sum( firstValue, secondValue ) );
   }

  /**
    *  @param first  the first value
    *  @param second the second value
    *  @return the sum of first and second is returned
  */
   public static int sum( int first, int second )
   {
     return first + second;
   }
 }
```

As you can see, the code contains a number of documentation comments, highlighted here in light blue. To generate the `javadoc` documentation, we simply run the `javadoc` utility that comes with the JDK. In the example below, I ran the `javadoc` utility from a command line window, giving it the name of my source code file.



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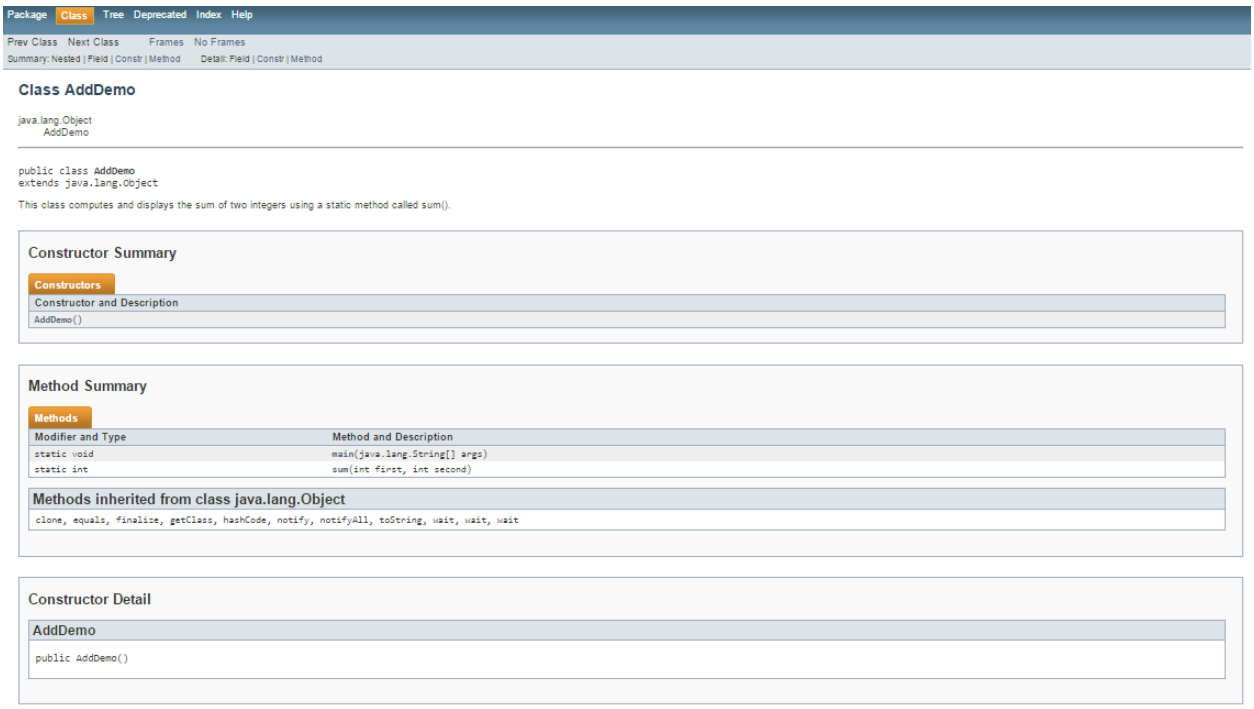
As you can see from the above image, the utility generates quite a few files. Most of the files are HTML files, the most important one being `index.html`. When `index.html` is loaded into a web browser, the following page is displayed:



Package Class Tree Deprecated Index Help

Prev Class Next Class Frames No Frames

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

Class AddDemo

java.lang.Object
AddDemo

```
public class AddDemo
extends java.lang.Object
```

This class computes and displays the sum of two integers using a static method called sum().

Constructor Summary

Constructors

Constructor and Description
AddDemo()

Method Summary

Methods

Modifier and Type	Method and Description
static void	main(java.lang.String[] args)
static int	sum(int first, int second)

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

AddDemo

```
public AddDemo()
```

The above is just a partial page for my `AddDemo` class. It contains the description of the class I supplied in the source code documentation comments, and it lists the two methods associated with the class, namely `main()` and `sum()`. It also indicates that `AddDemo` is a subclass of `Object`, and lists the methods it inherits from the `Object` superclass.

If I scroll down further on the web page, it will list detailed information about each of the methods in `AddDemo` as illustrated below.

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Creating Documentation With `javadoc`

Constructor Detail

AddDemo

```
public AddDemo()
```

Method Detail

main

```
public static void main(java.lang.String[] args)
```

sum

```
public static int sum(int first,
      int second)
```

Parameters:

`first` - the first value

`second` - the second value

Returns:

the sum of first and second is returned

Using the navigation bar at the top of the web page, I can get additional views of the information associated with my class. For example, clicking on the Index link provides an alphabetical listing of the key class elements, as illustrated below.

Package Class Tree Deprecated Index Help

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A M S

A

AddDemo - Class in <Unnamed>
This class computes and displays the sum of two integers using a static method called sum().
AddDemo() - Constructor for class AddDemo

M

main(String[]) - Static method in class AddDemo

S

sum(int, int) - Static method in class AddDemo

A M S

Clicking on the Tree link produces an inheritance tree view, which, in this simple class, is not all that interesting, but it's a nice feature to be able to view an inheritance structure in a graphical way.

Package Class Tree Deprecated Index Help

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Hierarchy For All Packages

Class Hierarchy

- java.lang.Object
  - **AddDemo**

Here's a link to more detailed information on using `javadoc`:
http://www.oracle.com/technetwork/articles/java/index-137868.html