

# Assignment 1

## *Recommendations for next version?*

The first thing that caught my eye was how NOC, RFC, LCOM, and CBO all took a decent jump up when version 9 came out and then, with the exception of LCOM, too a gradual decrease back down with the next 2 versions, 10 & 10.1. LCOM took an increase down then went back up to where they were in version 9. This is a little concerning to me as for I cannot tell what direction they are aiming to go with as a company. With WMC and DIT there was a steady decrease down, why was there that one spike increase for version 9? My recommendation is to ensure that they are heading in the correct direction and to stay there.

## *How it was calculated?*

### **Weighted Methods per Class (WMC)**

Choice: Public Interface `async.Stockticker.Stock`

Directory: `apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async`

Apache-tomcat version: 8.5.82

Excel line number: 2412

How it was calculated: There are 14 instances of method in the class. Methods include for example, public static void, but not limited to that.

The methods in this class are as follows: `stock`, `setCnt`, `getCnt`, `getSymbol`, `getValue`, `setValue`, `getValueAsString`, `getLastChange`, `setLastChange`, `getLastChangeAsString`, `hashCode`, `equals`, `toString`, `clone`

### **Depth of Inheritance Tree (DIT)**

Choice: public class `async.AsyncStockServlet`

Directory: `apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async`

Apache-tomcat version: 8.5.82

Excel line number: 2410

How it was calculated: the total length from node to root is 3. `HttpServlet` -> `TickListener` -> `AsyncListener`

### **Number of Children (NOC)**

Choice: Public Interface `async.Stockticker.TickListener`

Jessica Bender  
9/29/2022  
SE 433- Software Testing

Directory: apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async

Apache-tomcat version: 8.5.82

Excel line number: 2413

How it was calculated: gets the total number of children in this case it was 1, tick.

### **Response For a Class (RFC)**

Choice: Public Interface async.Stockticker

Directory: apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async

Apache-tomcat version: 8.5.82

Excel line number: 2411

How it was calculated: this is calculated by adding the number of methods in the class and the distinct method calls. For this example, we have 6 in total: start, stop, shutdown, addTickListener, removeTickListener, run

### **Coupling Between Objects (CBO)**

Choice: Public Interface async.Stockticker

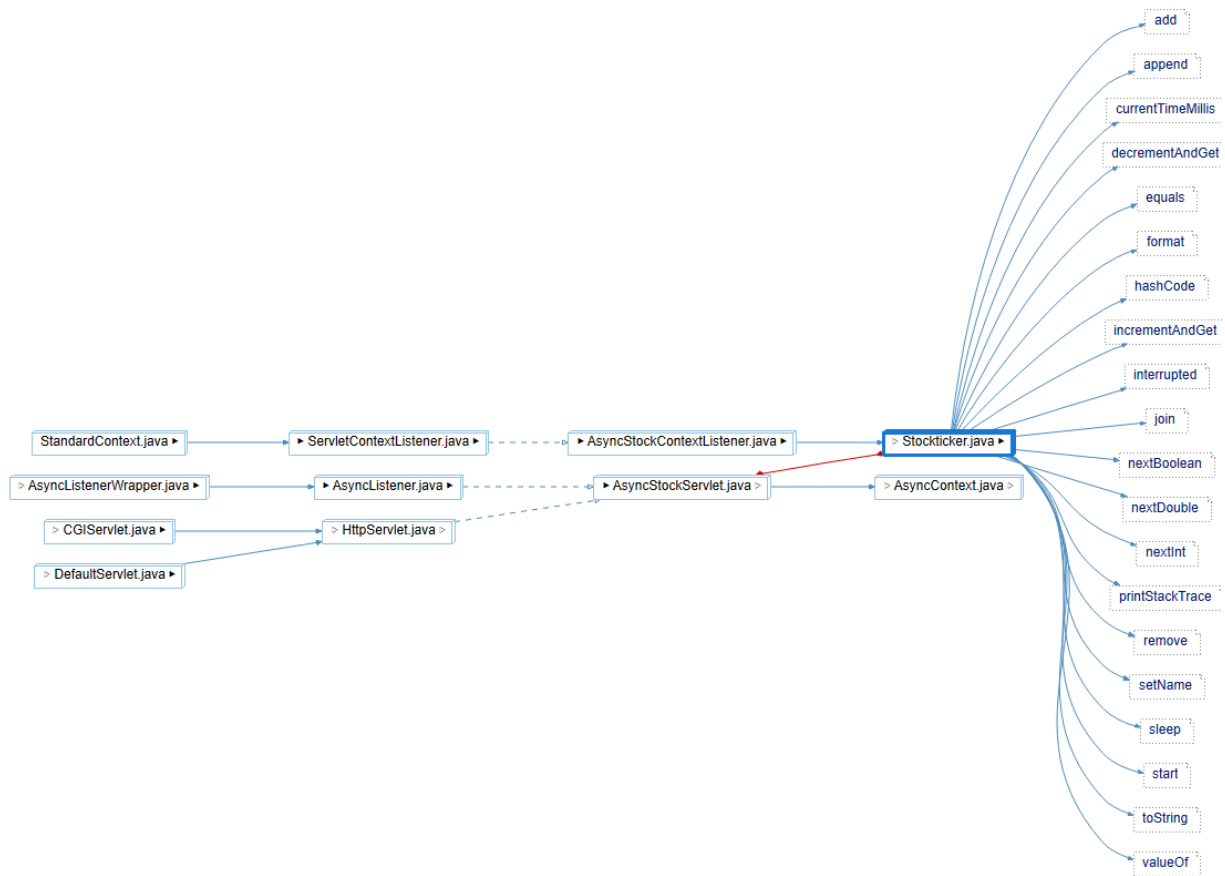
Directory: apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async

Apache-tomcat version: 8.5.82

Excel line number: 2411

Jessica Bender  
9/29/2022  
SE 433- Software Testing

How it was calculated: this is the number of classes that are coupled to a particular class. There are 10 other classes that use `async.Stockticker` as shown in the photo below



### Lack of Cohesion of Methods (LCOM)

Choice: Public Interface `async.Stockticker`

Directory: `apache-tomcat-8.5.82-src\apache-tomcat-8.5.82-src\webapps\examples\WEB-INF\classes\async`

Apache-tomcat version: 8.5.82

Excel line number: 2411

How it was calculated: for this one you must count the methods that reference it, and add all of those up across all fields. in this case there are 60