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CM 907

Lab 8 Questions

Question 1) Please identity the metrics whose values are outside the optimal range. Also identify the methods that are responsible for this.

Number of Parameters (avg/max per method)

TwitterClient is the method/constructor that is responsible.

Question 2) Please provide a strategy or solution that will bring the value of the given metrics into an optimal range.

It may be best to refactor the code so the constructor will not have to handle having many parameters to initialize. You could write additional methods that assign the variables like the maxTrackKeywordsPerCredentials, and processForMillis in the class to reduce the number of parameters in the constructor.

Question 3) A good heuristic for cyclomatic complexity is to keep it below 15. Does this code meet that heuristic?

Yes, the maximum value for this metric is 10.

Question 4) Cyclomatic complexity can be used to identify the number of independent paths that need to be tested in a method. Please identify the number of independent paths in the method backOff in the inner class BackOff in TwitterClient.java. Identify conditions that would lead to each of these paths.

3 paths.

Path 1) If the backOffMillis equals 0, then the backOffMillis gets the initialMillis.

Path 2) If it doesn’t equal 0, thread sleep based on the backOffMillis and multiply it by two.

Path 3) If it doesn’t equal 0, do path 2. Then if the backOffMillis is greater than the capMillis, then the backOffMillis gets the capMillis.

Question 5) Explain, in your own words, the “afferent coupling” and “efferent coupling” methods. Describe how they can be used in project analysis.

Afferent coupling is the amount of other packages that depend on classes from a package. The example class has imported a class from the com.gist.twitter package, so the coupling shows any dependencies that the example class needs from the twitter class.

Efferent coupling is the amount of other packages that classes in a package depend on. Both the TwitterClient and Example class depend on classes from the com.gist.twitter package, so this couple should overall dependency between packages in a project.

Question 6) Compute the effectiveness of Top Level Design inspection activities.

[830 / (154 + 928)] * 100% = 76.7%

Question 7) Compute the effectiveness of Low Level Design inspection activities.

[761 / (154 + 928 – 806) + 948] * 100% = 62.2%