

1. Please identify the metrics whose values are outside the optimal range. Also identify the methods that are responsible for this.
Metric -> Number of Parameters (avg/max per method)
Method -> Twitter Client
2. Please provide a strategy or solution (without writing code) that will bring the value of the given metrics into an optimal range
If it is possible that all of the parameters are not needed or are duplicated, you could weed out all the unnecessary / duplicate ones. You could also find another way to store everything. Perhaps they aren't all something that need to be stored in the twitter client.
3. A good heuristic for cyclomatic complexity is to keep it below 15. Does this code meet that heuristic?

Yes, the maximum is 10.

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. (These conditions establish test cases for the method.)

There are 3 independent paths in the method backOff in the inner class BackOff.

If backOffMillis == 0

If backOffMillis != 0

If backOffMillis > capMillis

5. Explain, in your own words the "afferent coupling" and "efferent coupling" methods. Describe how they can be used in project analysis.
Afferent Coupling measures the total number of external classes coupled to classes of a package due to incoming coupling. Each class counts only once.
Efferent Coupling measures the total number of external classes coupled to classes of a package due to outgoing coupling. Each class counts only once.

6. According to the defect matrix, compute the effectiveness of Top Level Design inspection activities.

$$effectiveness = \frac{53 + 753}{154 + 928} = 0.745 = 74.5\%$$

7. According to the defect matrix, compute the effectiveness of Low Level Design inspection activities.

$$effectiveness = \frac{3 + 65 + 693}{(154 + 928 + 948) - 806} = 0.622 = 62.2\%$$

8. According to the defect matrix, compute the overall defect removal effectiveness of the development process.

$$effectiveness = \frac{3526 - 126}{3526} = 0.964 = 96.4\%$$