

1 Lab 8 - Metrics

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5 Q1: The number of parameters (avg/max per method) is outside of optimal range. The  
6 constructor for the TwitterClient class is responsible for this with 7 total parameters.

7 Q2: The constructor can be refactored into methods that assign the given values to  
8 their respective variables. For example, this.credentials can be assigned in  
9 createCredentials(...) and authScope can be assigned in createAuthScope(...).

10 Q3: Yes, this code meets the cyclomatic complexity requirements with a mean of 2.478.  
11 Further, the maximum for McCabe Cyclomatic Complexity is 10, which is well below the  
12 heuristic 15.

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11 Q4: There are 3 independent paths. The first path occurs in the first if statement, and  
12 occurs when backOffMillis is equal to 0. The second path occurs in the else statement,  
13 if the backOffMillis is greater than capMillis. The third path also occurs in the else  
14 statement, but happens if backOffMillis is not greater than capMillis.

12

13 Q5: Afferent coupling describes the number of external packages that have dependencies  
14 with the current package. It indicates a package's responsibility.

14 Efferent coupling describes the number of external packages that the classes in the  
15 current package depend on. It indicates a package's independence.

15 In project analysis, both types of coupling outline the degree in which classes rely on  
16 other classes.

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17 Q6:  $(53+753)/(154+928) = 806/1082 * 100\% = 74.49\%$

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19 Q7:  $(3+65+693)/((1082-806)+948) = 761/1224 * 100\% = 62.17\%$

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21 Q8:  $1 - (126/3526) * 100\% = 96.43\%$