

# Cyclomatic Complexity

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Lecture #2 out of 24

80 minutes

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1. Some programmers mistakenly feel proud of higher complexity of their code.



THOMAS J. McCABE

“Cyclomatic Complexity (CC) is a count of the number of decisions in the source code. The higher the count, the more complex the code. The formula is simple:  $C = E - N + 2$ .”

— Thomas J. McCabe. A Complexity Measure. *IEEE Transactions on Software Engineering*, (4):308–320, 1976. doi:[10.1109/tse.1976.233837](https://doi.org/10.1109/tse.1976.233837)

What is the complexity of this program?



I found this picture [here](#).

2. In his presentation "*Software Quality Metrics to Identify Risk*", Tom McCabe introduces the following categorisation to interpret cyclomatic complexity: 1–10 little risk, 11–20 moderate risk, 21–50 high risk, 50+ very high risk.

3. Graylin JAY et al., *Cyclomatic Complexity and Lines of Code: Empirical Evidence of a Stable Linear Relationship*, Journal of Software Engineering & Applications, Vol. 2, 2009, pp. 137–143



4. What is a complexity of a class? How about a module?



5. Feature creep is one of the most common sources of cost and schedule overruns; it can even kill products and projects — Wikipedia.



6. Tom McCabe suggested to prohibit functions where CC is larger than ten. Modern static analyzers may help you control this automatically.

Read this:

The Better Architect You Are, The Simpler Your Diagrams (2015)

Are You a Hacker or a Designer? (2014)

# References

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Thomas J. McCabe. A Complexity Measure. *IEEE Transactions on Software Engineering*, (4):308–320,