Cyclomatic complexity is a metric that specifies the complexity of a system. Systems engineers often utilize software such as Systems Modeling Language (SysML), a software of Unified Modeling Language, that offers different diagrams for complex systems/projects. However, there prove to be many ways to model the same system through SysML. This can become incredibly tricky and therefore become easily miscommunicated or misdirected in execution. With systems that are being created and tested for missile defense, government agencies, or in industry, there are time, resources, money, and often human lives at stake. Being able to break down such systems is crucial to engineers and stakeholders, so being able to calculate the cyclomatic complexity of a system in universal terms facilitates understanding, communicating, and executing of complex projects.

McCabe’s development of calculating software complexity noted the unique entry and exit points:

\[ V(G) = E - N - 2P \]

or

\[ V(G) = P + 1 \]

where:

- \( E \) = # edges
- \( N \) = # nodes
- \( P \) = Exit points (in general, there’s one exit point but in SysML there can be multiple ending/exit points)

The concept of cyclomatic complexity was developed further by Thomas McCabe in 1976. His observation was based on complexity rather than size. His method was applied to strongly connected graphs and indicated the maximum number of linearly independent circuits.

This block definition diagram yielded a negative complexity value which could signify that they are perhaps not significant or just that the nodal analysis performed on the graphs do not apply here but apply to other diagrams within SysML.

**Former Key Development**

The concept of cyclomatic complexity was developed further by Thomas McCabe in 1976. His observation was based on complexity rather than size. His method was applied to strongly connected graphs and indicated the maximum number of linearly independent circuits.

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