

# A New Metric based on the Weighted Class Complexity (WCC) metric and measure of complexity for Object-Oriented Systems

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## Abstract

Class-level complexity is a significant component of software complexity, and measuring software complexity is essential for software development and maintenance. Although the Weighted Class Complexity (WCC) metric has a long history of use, it has some drawbacks, including the equal weighting of complexity components and the exclusion of some complexity elements. In this paper, we present a novel metric, the Enhanced Weighted Class Complexity (EWCC) metric, which extends the WCC metric by adding more complexity variables and weighting them according to their relative relevance. Data access patterns, method call chains, and control structure complexity are among the other variables. In order to compare the EWCC metric's output to the WCC metric's output, we apply it to a number of software systems. We assess the EWCC metric's performance in locating potential error and bug sources. The findings indicate that, compared to the WCC metric, the EWCC metric offers a more thorough and precise evaluation of class-level complexity. According to the results, software developers and maintainers may find the EWCC measure to be a useful tool for controlling software complexity.

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