

# Report Complexity Summary






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Report Name

Lines Of Code    Cyclomatic Complexity    Structural FanIn    Structural FanOut    Informational Fan In    Informational FanOut    Informational Complexity

## Sample Reports

### Sales Reports

 CrossTab.rpt	1	2	0	0	1	1	2
 Discount Report.rpt	2	2	0	0	3	3	29
 Product Details (Subreport)	3	2	0	0	3	3	74
 Employee Performance Report.rpt	1	2	0	0	2	2	4
 SalesRunningTotal.rpt	1	1	0	0	0	0	0

### Cyclomatic complexity

Provides a measure of the structural complexity of a formula. The structural complexity is calculated by the following:

**Cyclomatic complexity = Number of branches + 1**

Branches are the number of conditional statements in the code eg: If, Then, Else, For etc. The number of test cases required to test a procedure can be directly related to the cyclomatic complexity.

1-10 A simple formula without much risk

11-20 More complex with moderate risk

21-50 Complex formula with high risk

>50 Untestable, very high risk formula

### Structural fan-in/fan-out and informational complexity

**Structural fan-in = number of formulas that reference this formula**

**Structural fan-out = number of formulas this formula calls**

A high structural fan-in means good design for code re-use in the crystal report

A high structural fan-out means strongly coupled code, or code that has lots of dependencies on other formulas.

**Information fan-in = formulas called + report fields referenced + global variables referenced**

**Information fan-out = formulas that call this formula + report fields referenced + global variables referenced**

Information fan-in and fan-out indicate the coupling extent of the code combined with the amount of information each formula is required to process.

**Informational complexity = lines of code x (informational fan-in x informational fan-out)**

Informational complexity indicates which formulas have excessive functional complexity and may be candidates for extensive testing or redesign.