

SENG 301 - Software Analysis and Design

Lab 8 – Test Coverage
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Test Coverage

- The term **test coverage** refers to measuring how much a software program has been exercised by tests.
- There are many kinds of test coverage:
 - Code coverage is a measure used to describe the degree to which the source code of a program is executed when a particular test suite runs

Basic Coverage Criteria

- **Function coverage** - Has each function (or subroutine) in the program been called?
- **Statement coverage** - Has each statement in the program been executed?
- **Branch coverage** - Has each branch of each control structure (such as in if and case statements) been executed? For example, given an if statement, have both the true and false branches been executed? Another way of saying this is, has every edge in the program been executed?
- **Condition coverage** - Has each Boolean sub-expression evaluated both to true and false?

Other Criteria

- **Path coverage** - Has every possible route through a given part of the code been executed?
- **Loop coverage** - Has every possible loop been executed zero times, once, and more than once?
- **State coverage** - Has each state in a finite-state machine been reached and explored?

Start Lab