## SED Lectures 19
### Path Testing

#### Objectives

To be able to design unit test cases using the structure of the code to be tested. To be able to generate test cases for basic path testing and its variants.

#### Key Points

1. When the code of a program unit is available, test cases can be selected to exercise all parts of the code’s control structure
2. Different degrees of code coverage can be obtained by different selection criteria:
   - Statement coverage
   - Branch coverage
   - Path coverage
3. Cyclomatic Complexity can be calculated from source code’s control structure, and gives an approximation of the complexity of the function.
4. The Cyclomatic Complexity is equal to the number of independent paths through the code.
5. Black box (eg. equivalence classes) and white box (eg. path testing) methods have different strengths for discovering faults in code. In general, it is useful to employ both techniques.

#### Core reading

Bruegge & Dutuoit, 11.4.3 unit testing

Sommerville (7th ed) 23.3.3 structural testing, 23.3.4 path testing

Pressman (5th ed) 17.4 basis path testing

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