



Structural Based Testing Strategies

Static Analysis

Objective



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Identify static
analysis
techniques

Data Flow Analysis



| Model the flow of data in a program

- Where are variables defined
- Where are variables used

| Perform analysis without executing the program

| Look for data flow anomalies

Example Data Flow Anomalies



- | Variable defined and then redefined without being referenced

- | Referencing an undefined variable

- | Defining a variable but never using it

- | Numerous tools available to perform anomaly detection

Huang's Theorem



Let A, B, C be nonempty sets of character sequences whose smallest string is at least 1 character long. Let T be a 2-character string. Then if T is a substring of Ab^nC , then T will appear in AB^2C .

Summary

