







Behavioral:

 Given using a hardware description language, such as Verilog or VHDL.

• Functional:

- Given at the register-transfer level (RTL).

• Registers, adders, multipliers, etc.

• Interconnect structures like MUX and bus.

Structural:

- Given at the logic level.
 - Gates, flip-flops, and interconnection between them.







- The 'for' clause of the language could fail such that the body of the loop is always executed or never executed, irrespective of the condition.
- The 'switch' clause can fail like:
 - All the specified cases are selected.
 - A wrong case is selected.
 - None of the specified cases are selected.
- The 'if-then-else' structure can fail similarly.
- Experimental results show that this approach can detect about 85% of faults corresponding to lower-level models (say, stuck-at fault).





- A multiplexer.
- The fault model:
 - A '0' and a '1' cannot be selected on each output line.
 - When an input is being selected, another input gets selected instead of *or* in addition to the correct input.
 Wired AND/OR operation is implicitly performed if
 - more than one line gets selected.
- Example 2:
 - Truth table of a functional block can change in an arbitrary way.
 - Exhaustive testing
 - Pseudo-exhaustive testing



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