ELEC 5970/6970 BIST

Assignment #2 Random Test Pattern Bridging Fault Simulation

Use the ASL for the circuit assigned to you and the 2000 random test patterns you generated for the first assignment.

Generate a set of dominant bridging faults for your circuit. Repeat this process for dominant-AND and dominant-OR bridging faults. Note that you can separately generate and then combine the dominant-AND and dominant-OR bridging fault lists to obtain a single fault list for dominant-AND/OR bridging fault simulation ***OR*** you can run the simulations separately and then combine the results for data reporting.

Example for serial fault simulation of dominant bridging faults with audit:

```
default s#
proc
audit
simul8
bftgen dom          (use dand and dor to generate dominant-AND and dominant-OR bridging faults)
bftsim
```

Record the following data for your circuit (this info will be in s#.aud):

Total number of nets in circuit

Record (or calculate) the following data for serial bridging fault simulation of your circuit for (a) dominant bridging faults and for (b) combined dominant-AND/OR bridging faults:

1. Fault Generation: Total number of bridging faults generated for your circuit (these faults will be in *s#.flt*). Calculate the total number of possible (N-choose-2) bridging faults that would be generated based on the number of nets (#nets can be found in audit file).
2. Fault Simulation: Number of faults detected (these faults will be in *s#.det*), undetected (these faults will be in *s#.udt*), potentially detected (these faults will be in *s#.pdt*), and oscillation (these faults will be in *s#.osc*) faults. Determine whether any (and how many) potentially detected faults also were determined to be oscillation faults.
3. Fault Simulation: Record fault simulation time for serial bridging fault simulation (given at end of fault simulation).
4. Fault Coverage: Calculate fault coverage considering potentially detected and/or oscillation faults with 0.5 and 1.0 probabilities. Do not count faults twice if they are potentially detected and an oscillation fault.

Turn in your results on paper at the beginning of class on or before the due date (be sure to include your ***s#*** next to your name on the sheet(s) of paper).

Happy BISTing!!!