Logic Synthesis & Verification, Fall 2018

National Taiwan University

Programming Assignment 2

Due on 2018/12/9 23:59

1 [Programming ABC]

Programming task:

Implement a procedure in ABC using MiniSAT to find k prioritized satisfying assignments.

1. Name the command as `priosat` with function `Abc_CommandPrioSAT`.
2. Input: A combinational circuit C in the BLIF format and a number $k \geq 1$ are given.
3. Output: For each primary output of C, return a) k smallest and largest onset minterms, and b) all prime implicants that contain these minterms.
4. Requirement: Apply incremental SAT solving using MiniSAT and its unit assumption interface. For C with inputs $x_1, x_2, \ldots, x_n$ given in order in the BLIF format, interpret the bit vector $(x_1, \ldots, x_n)$ as a binary code for a decimal value with x_1 and x_n being the least and most significant bits, respectively.

Items to turn in:

(1) Your (source) code.
(2) A readme file describing your algorithm and enhancements made. (A 10% bonus credit will be given to those with good algorithms.)

Please submit your zipped file on CEIBA.