Programming Assignment 1

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Problem 1

1.(b)

The results after step 3, 5, and 7 are shown below:

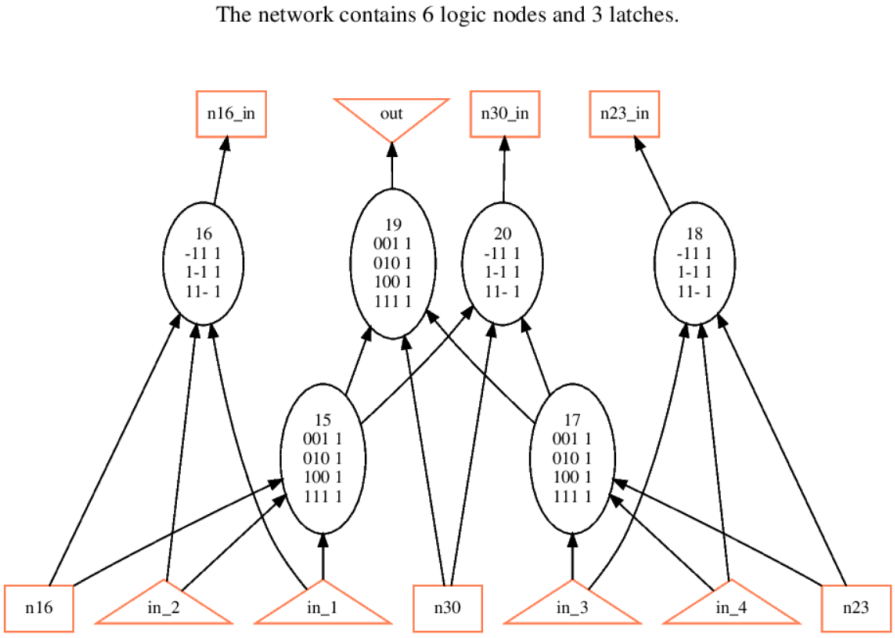

Figure 1: Step 3

Problem 2

2.(a)

1. Logic network in AIG preserve the structure of the input Boolean network, and represents the network as (possibly) multiple layers of logic nodes, with the Boolean function of each node represented in AIG. On the other hand, the structurally hashed AIG represents the entire Boolean network as a sing AIG circuit, thus the original structure is broken down.

2. Similarly as above, logic network in BDD preserve the structure of the input network, but represents each Boolean function as BDD. On the other hand, the command `collapse` turns the entire network into a Boolean function and represent it in BDD.

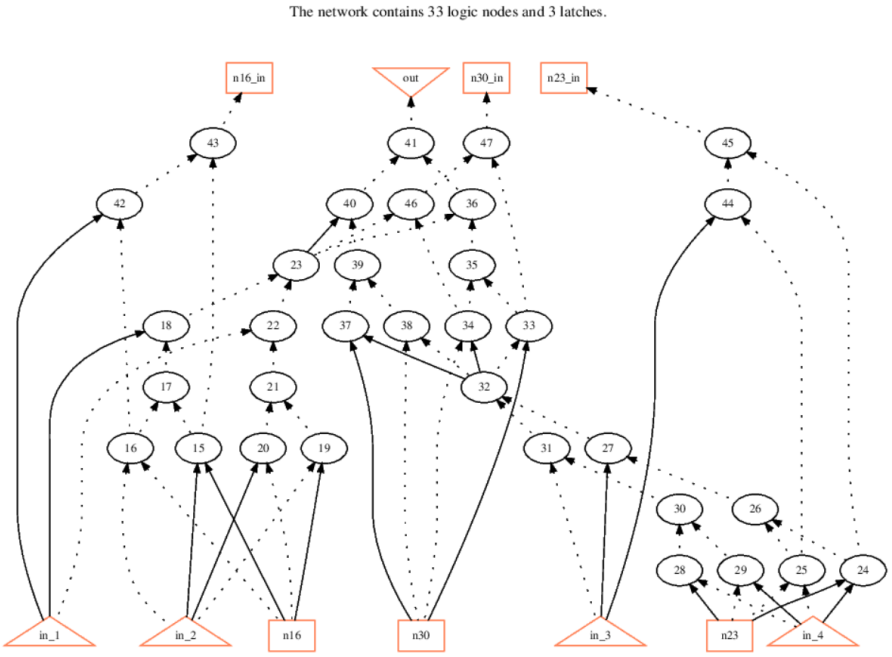

Figure 2: Step 5

2.(b)

One single command `logic` suffices.

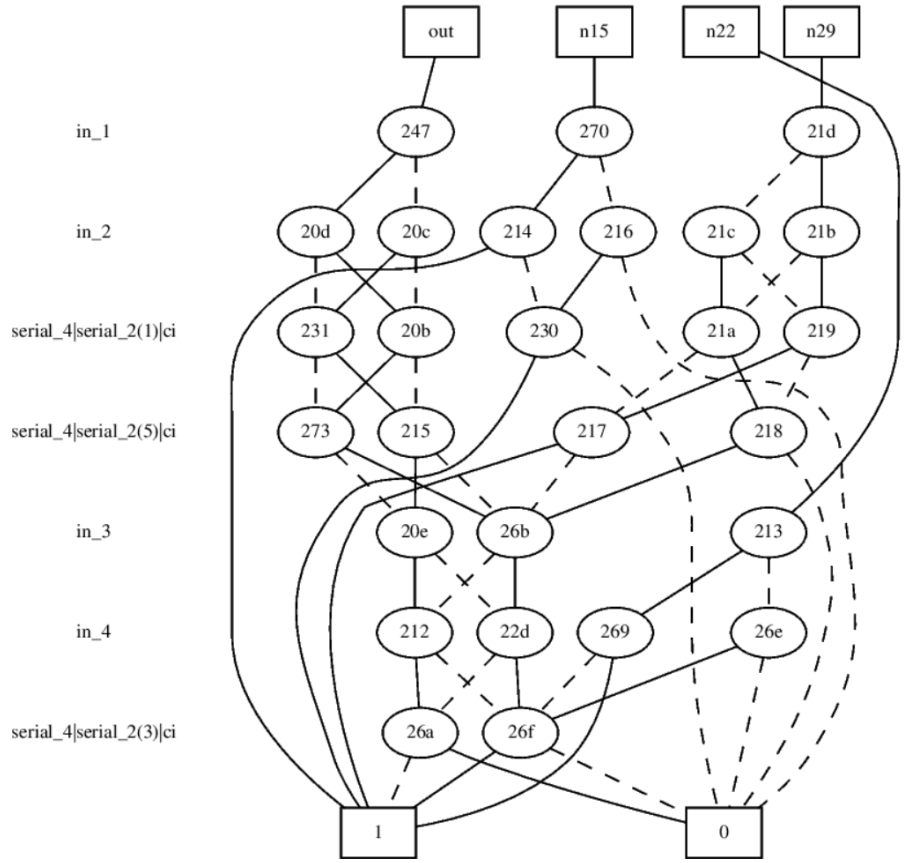

Figure 3: Step 7