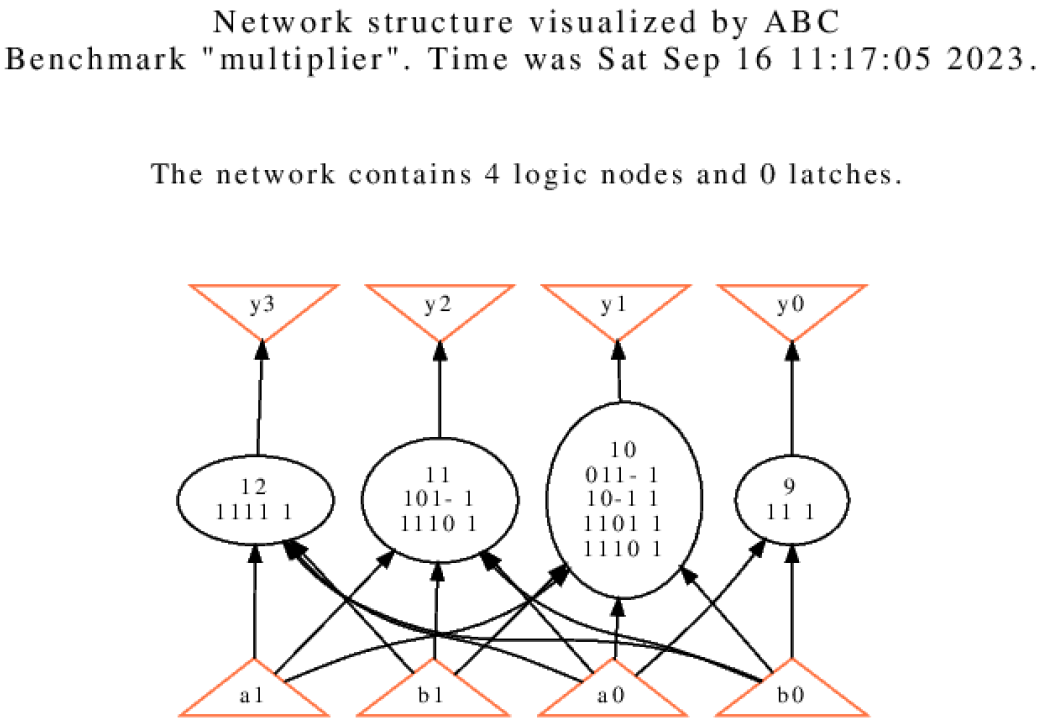
Ex 2-b:

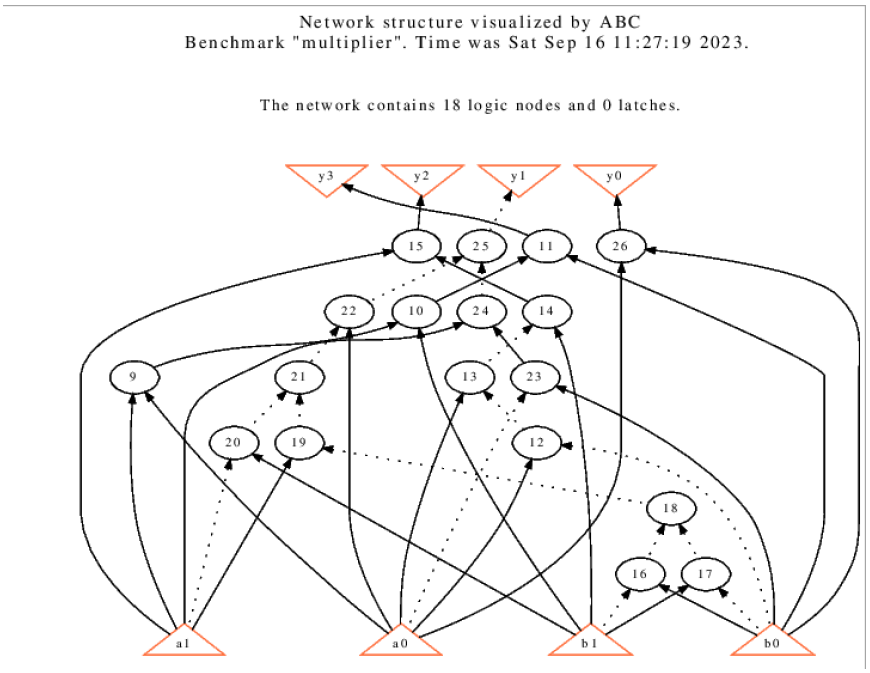
ABC commands :

```
[abc 01> read lsv/pa1/mul.blif
[abc 02> print_stats
 multiplier                : i/o =    4/    4  lat =    0  nd =     4  edge =     14  cube =     8  lev = 1
[abc 02> show
[abc 02> strash
[abc 03> show
[abc 03> collapse
[abc 04> show_bdd -g
 abc 04>
```

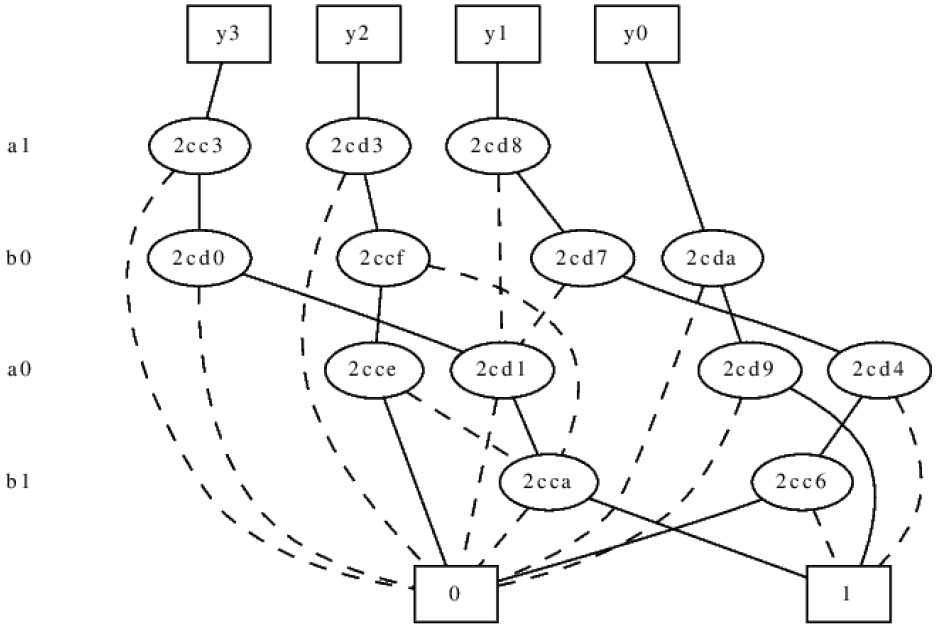
(3) : network structure



(5) : AIG



(7) : BDD



Ex 3 : (ref: ABC-Berkeley)

(a)-1:

According to ABC official website introduction, command ***aig*** only transforms local functions of the nodes to AIGs, while command ***strash*** transforms it into an AIG by one-level structural hashing. The screenshots of the result are as follows.

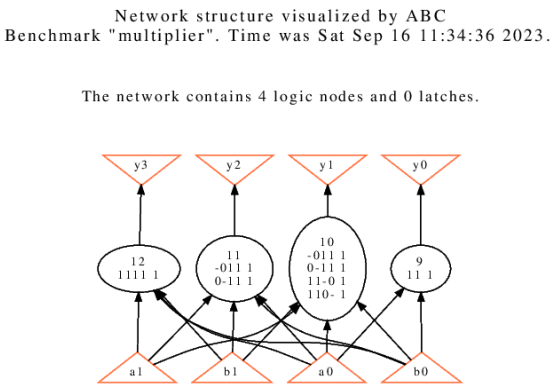


Fig: Result of command ***aig***

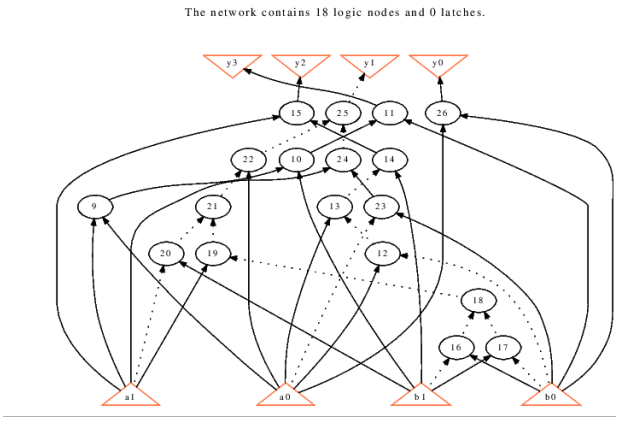


Fig: Result of command ***strash***

(a)-2 :

Command ***bdd*** straightly converts local functions of the nodes to BDDs while command ***collapse*** recursively composes the fanin nodes into the fanout nodes resulting in a network. And that's the reason why ***collapse*** is only workable on small networks. The screenshots of the result are as follows.

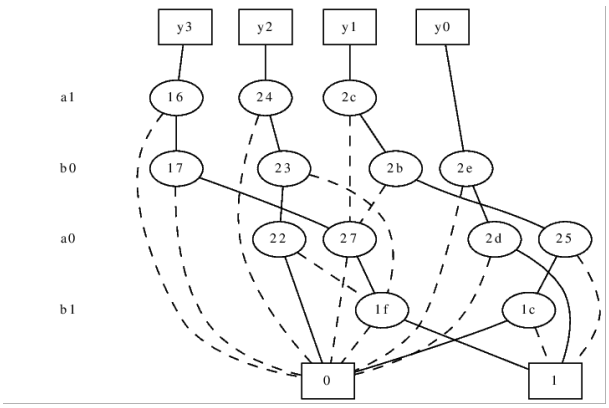


Fig: Result of command ***bdd***

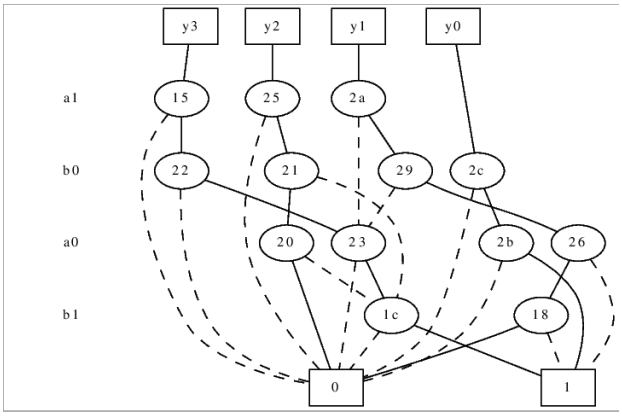


Fig: Result of command ***collapse***

(b) :

According to ABC official website, command ***logic*** can transform AIGs into a logic network with the SOP representation of the two-input AND gates.

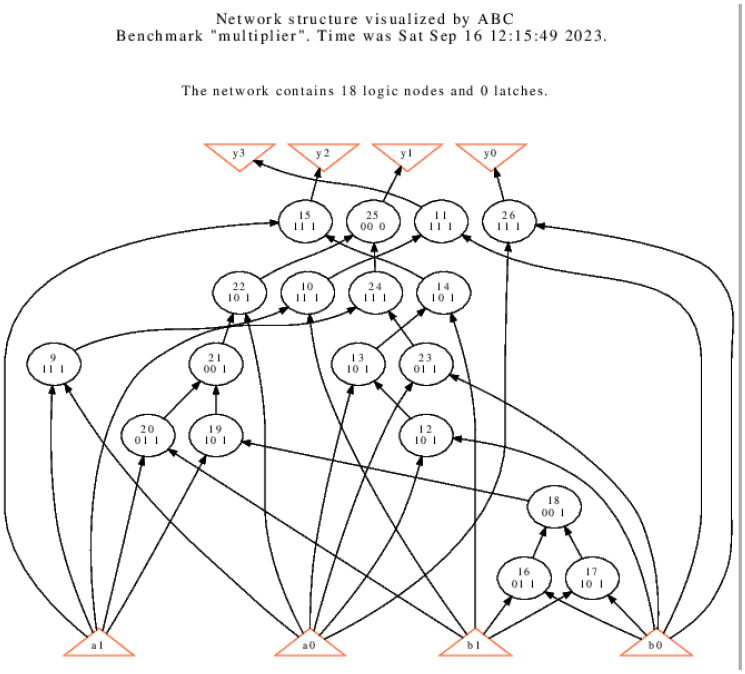


Fig: Result of command ***logic***

followed by ***strash.***