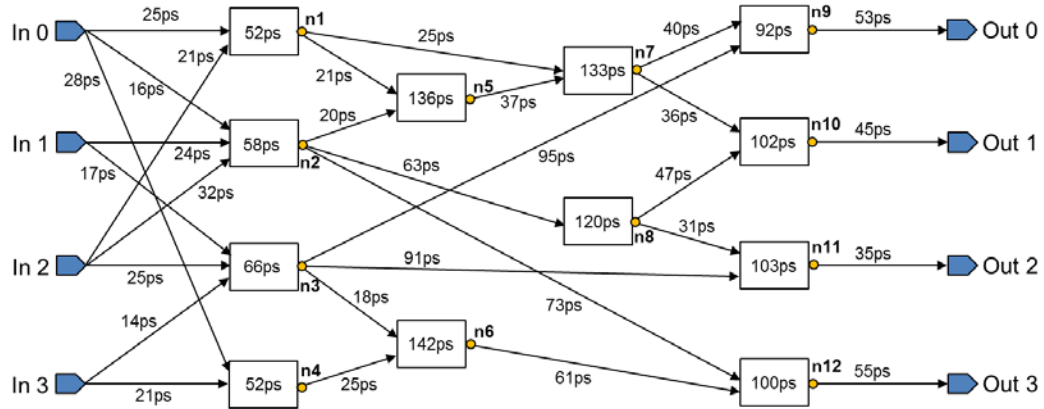


Homework Assignment 17

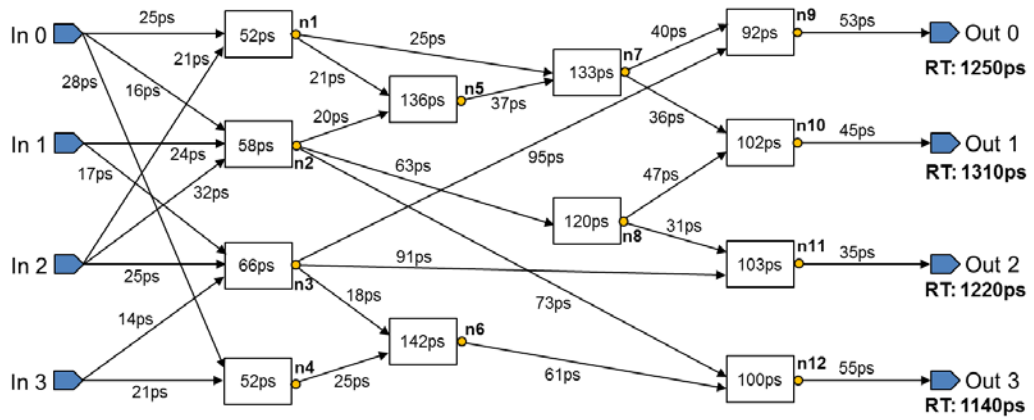
(Due 4:10pm, Apr. 23, email to daehyun@eecs.wsu.edu)

1. [Timing Analysis, **15 points**] The following shows the delay of each net and cell. Compute arrival time at each node (n1 ~ n12, Out 0 ~ Out 3) shown below. Arrival time at each input pin is zero.



| | Arrival time | | Arrival time |
|----|--------------|-------|--------------|
| n1 | | n9 | |
| n2 | | n10 | |
| n3 | | n11 | |
| n4 | | n12 | |
| n5 | | Out 0 | |
| n6 | | Out 1 | |
| n7 | | Out 2 | |
| n8 | | Out 3 | |

2. [Timing Analysis, **15 points**] The following shows the delay of each net and cell and the required time at each output. Compute required time at each node (n1 ~ n12, In 0 ~ In 3).



| | Required time | | Required time |
|----|---------------|------|---------------|
| n1 | | n9 | |
| n2 | | n10 | |
| n3 | | n11 | |
| n4 | | n12 | |
| n5 | | In 0 | |
| n6 | | In 1 | |
| n7 | | In 2 | |
| n8 | | In 3 | |