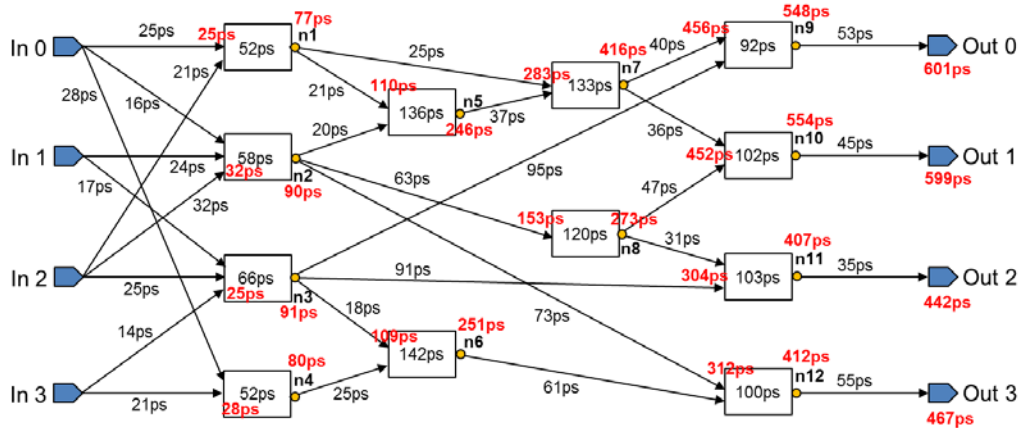


## Homework Assignment 17

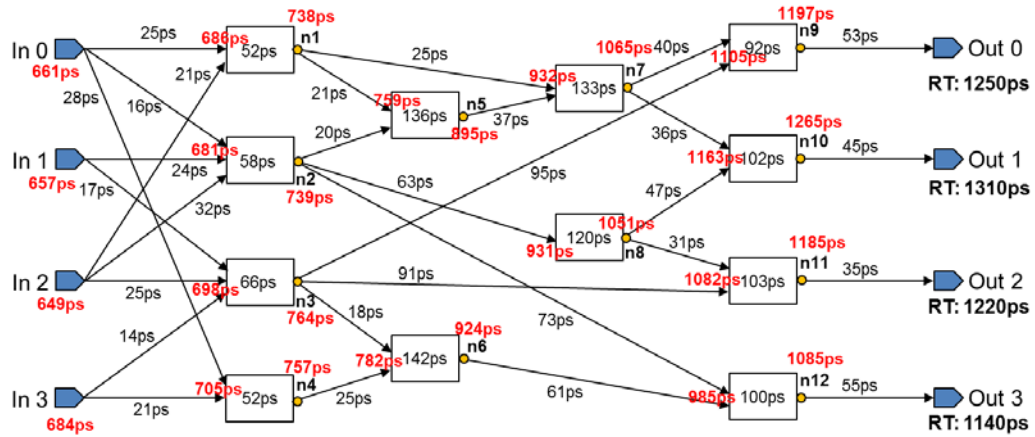
(Due 4:10pm, Apr. 23, email to [daehyun@eecs.wsu.edu](mailto:daehyun@eecs.wsu.edu))

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	77ps	n9	548ps
n2	90ps	n10	554ps
n3	91ps	n11	407ps
n4	80ps	n12	412ps
n5	246ps	Out 0	601ps
n6	251ps	Out 1	599ps
n7	416ps	Out 2	442ps
n8	273ps	Out 3	467ps

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	738ps	n9	1197ps
n2	739ps	n10	1265ps
n3	764ps	n11	1185ps
n4	757ps	n12	1085ps
n5	895ps	In 0	661ps
n6	924ps	In 1	657ps
n7	1065ps	In 2	649ps
n8	1051ps	In 3	684ps