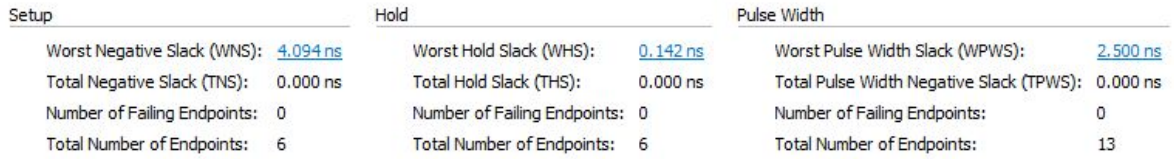
Lab5

Submitted By:
Snehal Gupta
2016201

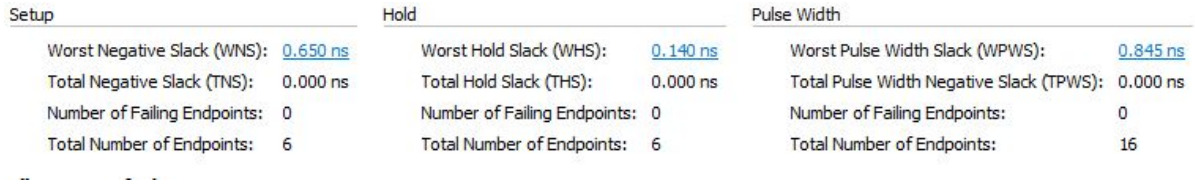
Q2

Without pipelining :
https://drive.google.com/open?id=0B9_UGp17Zsg0ZXFpRklyWXdTcEE
With pipelining :
https://drive.google.com/open?id=0B9_UGp17Zsg0LVlrZTFkbktVdmc

Without pipelining:



With pipelining :



We observe that the setup , hold and negative slack gets decreased due to pipelining . Also, the clock frequency increases on applying pipelining.

Q4:

https://drive.google.com/open?id=0B9_UGp17Zsg0eXNCQkkyNl9fMHc
Function performed : Shift Register

Q3:

https://drive.google.com/open?id=0B9_UGp17Zsg0Y254SS1talFrb1E

https://drive.google.com/open?id=0B9_UGp17Zsg0U1RhcVk0bkVCV1E
https://drive.google.com/open?id=0B9_UGp17Zsg0Z253S3Blc05TTEE

Data flow:

Resource	Estimation	Available	Utilization %
LUT	12	53200	0.02
IO	38	200	19.00

Gate flow:

Resource	Estimation	Available	Utilization %
LUT	8	53200	0.02
IO	38	200	19.00

Behavioural:

Resource	Estimation	Available	Utilization %
LUT	8	53200	0.02
IO	38	200	19.00

We observe that the maximum resource utilization is in dataflow modelling . While gate-flow and behavioural uses nearly same number of look-up tables.