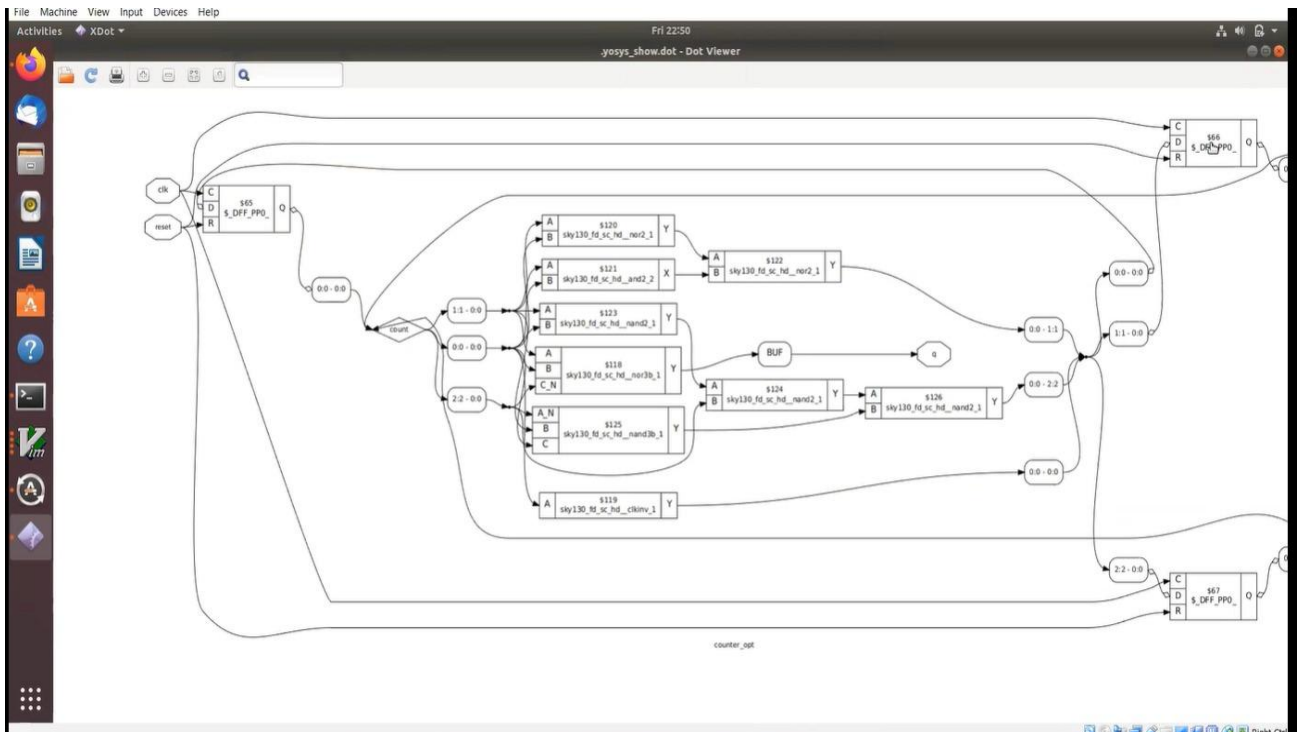
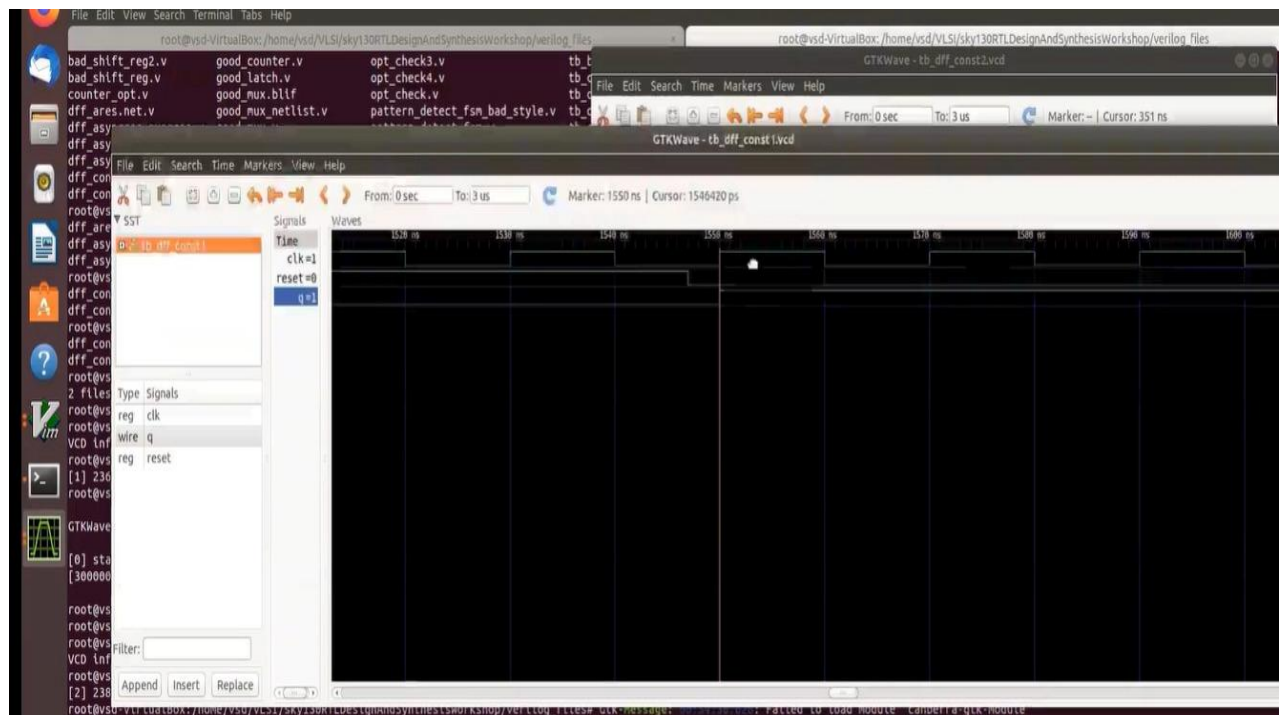
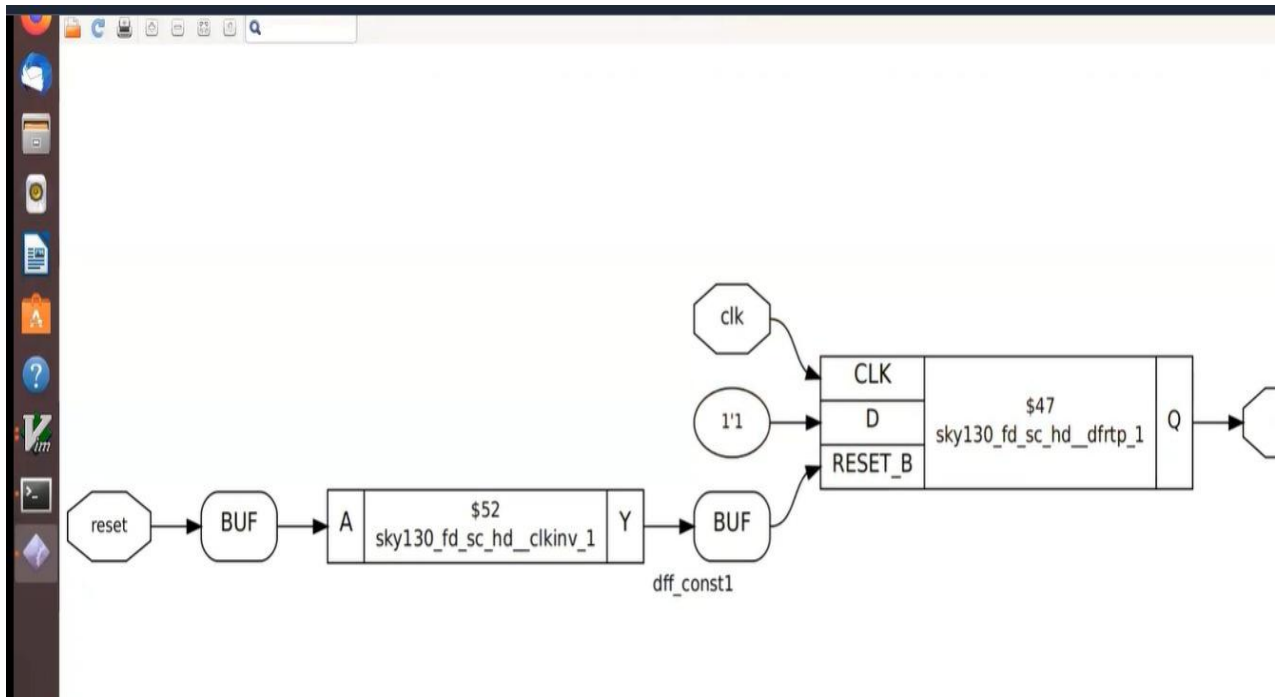


## COMBINATIONAL AND SEQUENTIAL OPTIMIZATION

### Combinational Logic Optimisation

- Squeezing the logic to get the most optimised design
  - Area and Power savings
- Constant Propagation
  - Direct Optimisation
- Boolean Logic Optimisation

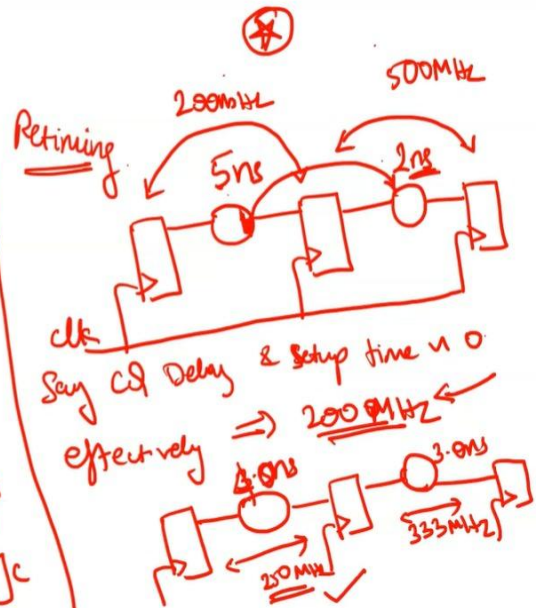
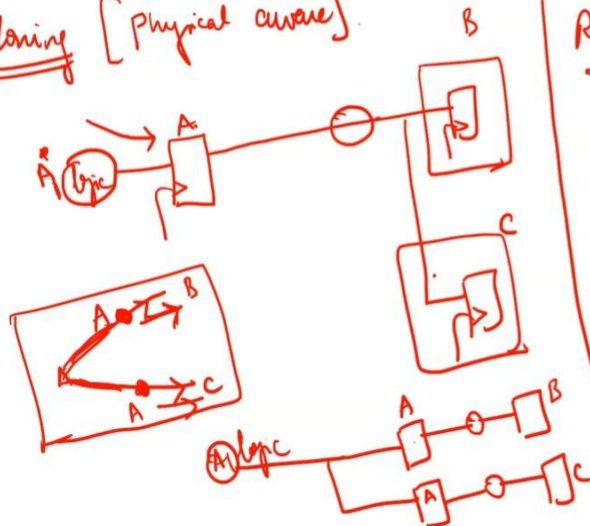






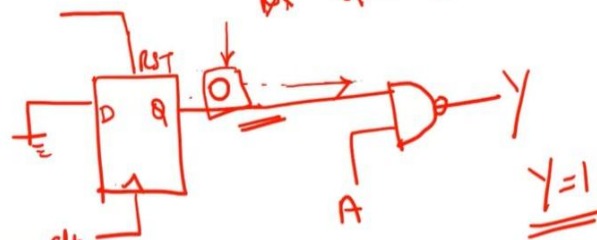
State opt  $\rightarrow$  Optimisation of Unused States

Cloning [Physical aware]



Sequential Constant

$RST: Q=0$   
 $Q=0 (\because D=0)$   $\xrightarrow{\text{clock}}$

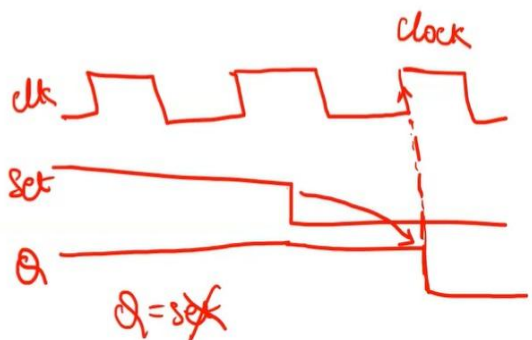
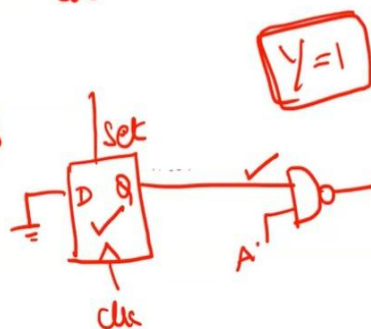


$$\overline{A \cdot 0} = \overline{A} + \overline{0} = \overline{A} + 1 = 1 //$$

$Q = \text{set?}$  No

Set  $Q=1$   
 $Q=0$

$Q = \text{set?}$   
 No!!



# Boolean Logic Optimisation

assign  $y = a?(b?c:(c?a:0)):(!c)$

