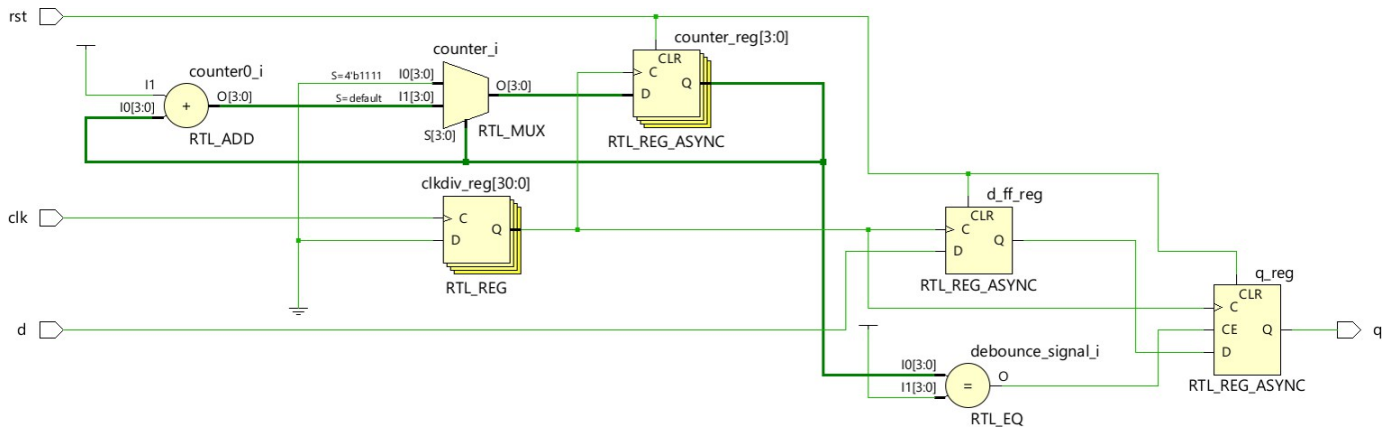
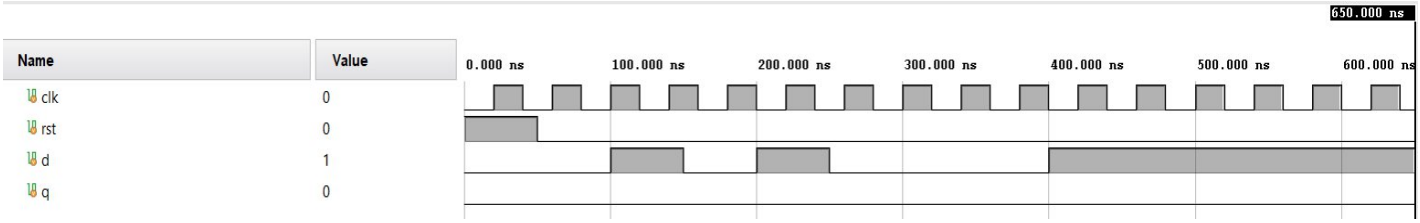
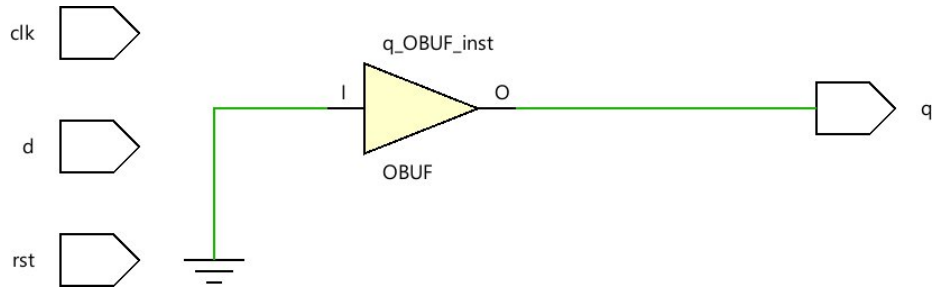
4. SCHEMATIC



5.**SIMULATION** GRAPH



6. **IMPLEMENTATION** SCHEMATIC



7. CONSTRAINTS

```
set_property PACKAGE_PIN W5 [get_ports a]
set_property PACKAGE_PIN R2 [get_ports clk]
set_property PACKAGE_PIN T1 [get_ports rst]
set_property PACKAGE_PIN L1 [get_ports y]
set_property IOSTANDARD LVCMOS33 [get_ports a]
set_property IOSTANDARD LVCMOS33 [get_ports clk]
set_property IOSTANDARD LVCMOS33 [get_ports rst]
set_property IOSTANDARD LVCMOS33 [get_ports y]
```

8. REPORT UTILIZATION

Name	Bonded IOB (106)
N debouncing_cir	1

9. CONCLUSION

- The primary function of a debouncing circuit is to filter out the noise caused by mechanical switch bounce.
- Debouncing ensures a stable and reliable input signal.
- By eliminating switch bounce, debouncing circuits contribute to the overall performance of the electronic system.
- Switch bounce can lead to glitches in the digital signal, which may cause unintended consequences in a circuit. Debouncing helps prevent these glitches, ensuring smooth and predictable operation.
- In addition to its impact on electronic performance, debouncing can contribute to the longevity of mechanical switches.