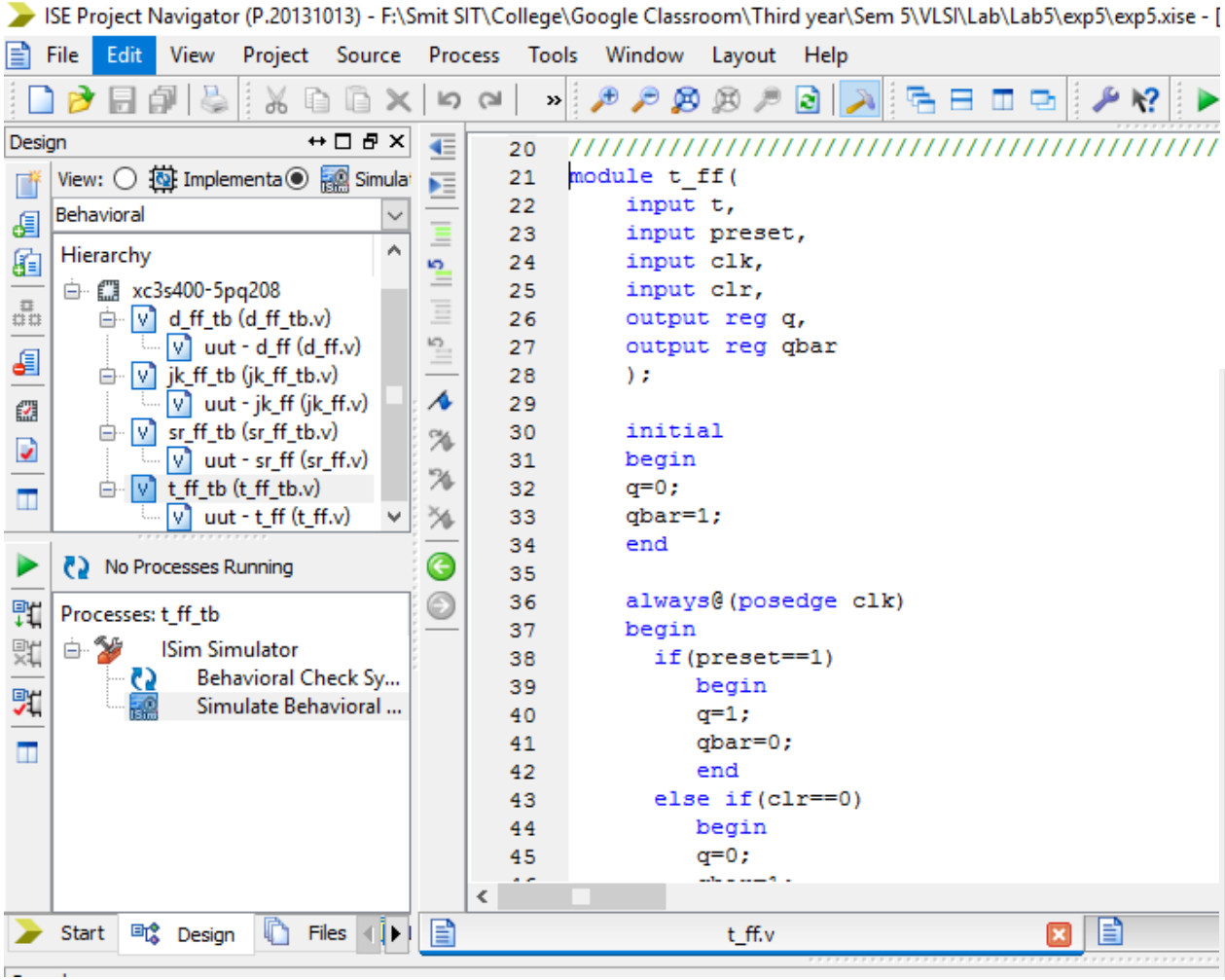
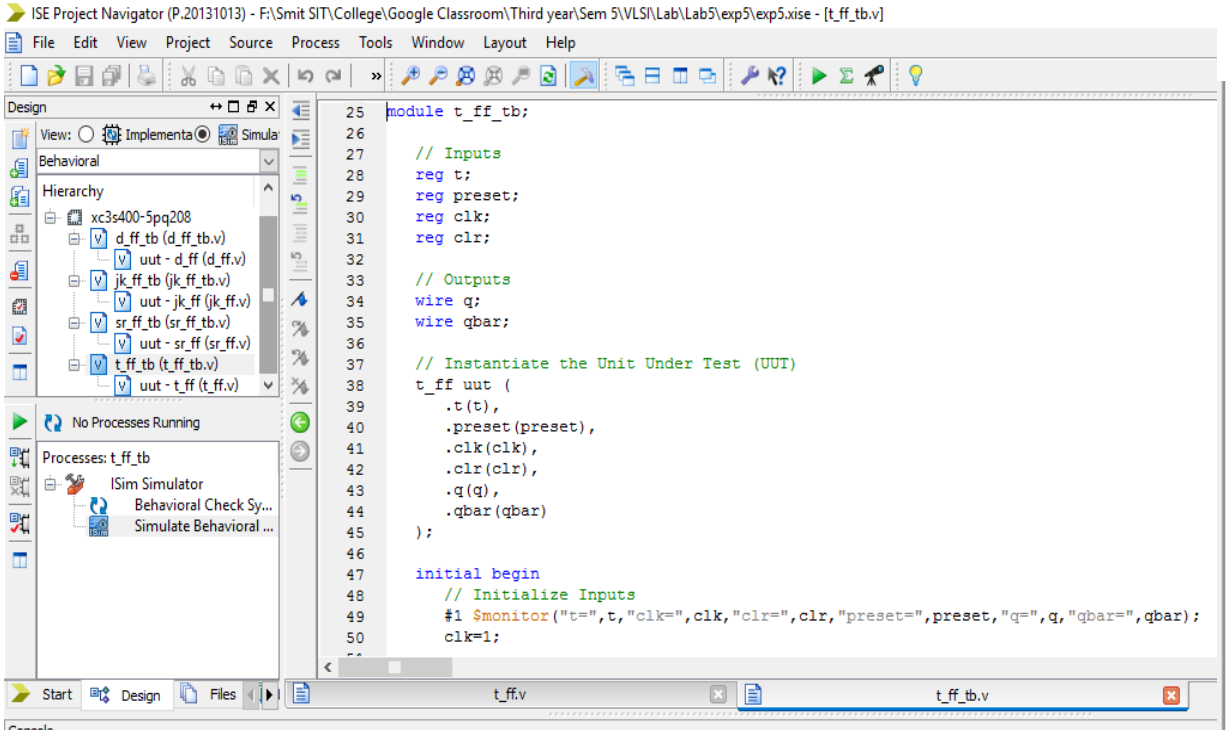
T Flip Flop

Source Code, Test Bench And Output

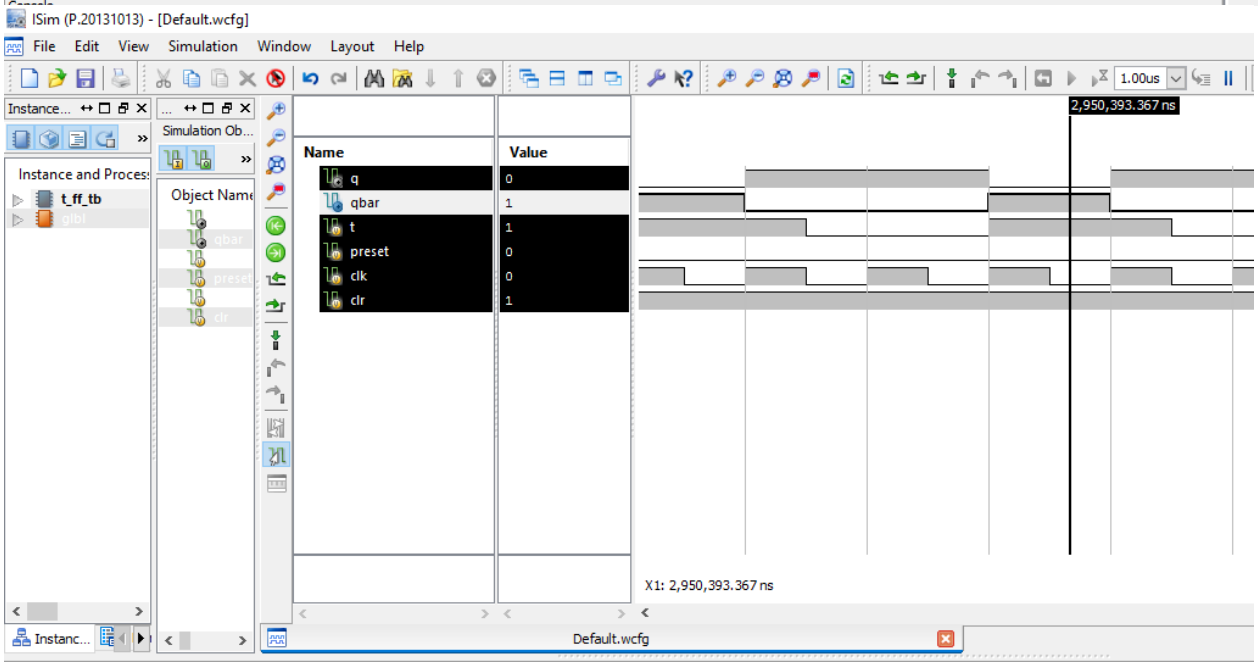



```
20  //////////////////////////////////////////////////////////////////
21  module t_ff(
22      input t,
23      input preset,
24      input clk,
25      input clr,
26      output reg q,
27      output reg qbar
28      );
29
30      initial
31      begin
32      q=0;
33      qbar=1;
34      end
35
36      always@(posedge clk)
37      begin
38        if(preset==1)
39           begin
40           q=1;
41           qbar=0;
42           end
43        else if(clr==0)
44           begin
45           q=0;
```

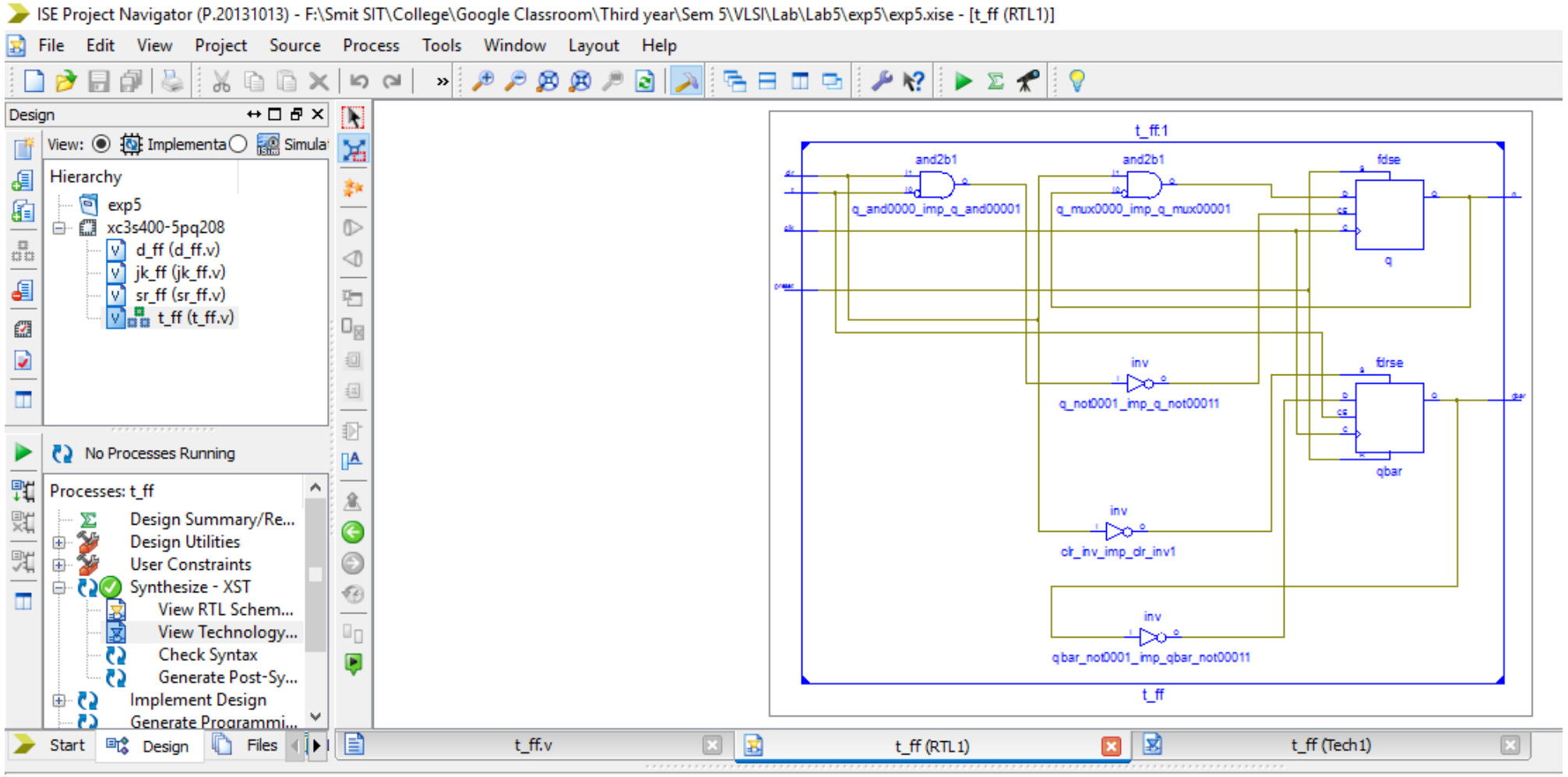
```
42           end
43        else if(clr==0)
44           begin
45           q=0;
46           qbar=1;
47           end
48        else if(t==0)
49           begin
50           q=q;
51           qbar=qbar;
52           end
53        else
54           begin
55           q=~q;
56           qbar=~qbar;
57           end
58     end
59  endmodule
60
```




```
51
52          // For preset
53          clr=1;
54          preset=1; #100;
55
56          // For Clear
57          clr=0;
58          preset=0; #100;
59
60          // For T=0
61          clr=1;
62          t=0; #100;
63
64          // For T=1
65          t=1; #100;
66      end
67          always #10 clk=~clk;
68          always #30 t=~t;
69  endmodule
70
```



RTL Schematic of T Flip Flop



Technology Schematic of T Flip Flop