

```

1  library IEEE;
2  use IEEE.STD_LOGIC_1164.ALL;
3
4  entity t_ff_en is
5      Port ( t : in STD_LOGIC;
6             en : in STD_LOGIC;
7             rst : in STD_LOGIC;
8             clk : in STD_LOGIC;
9             q : out STD_LOGIC);
10 end t_ff_en;
11
12 -- two segment architecture
13 architecture two_seg_arch of t_ff_en is
14
15     signal q_pres, q_next : std_logic;
16
17     begin
18
19         -- next state logic
20         q_next <= (t xor q_pres) when en='1' else
21             (q_pres and (not en));
22
23         d_ff_process: process (clk, rst) -- en is not in list
24         begin
25             if (rst = '1') then
26                 q_pres <= '0';
27             elsif (clk'event and clk='1') then
28                 q_pres <= q_next;
29             end if;
30         end process;
31
32         -- output logic
33         q <= q_pres;
34
35     end two_seg_arch;

```