

```
1  library ieee;
2  use ieee.numeric_std.all;
3  use IEEE.STD_LOGIC_1164.ALL;
4  use IEEE.STD_LOGIC_ARITH.ALL;
5  use IEEE.STD_LOGIC_UNSIGNED.ALL;
6
7  entity Mod8Counter is
8      port
9      (
10         CLK: in std_logic;
11         RegisterClock: out std_logic;
12         SelOut: out std_logic_vector(2 downto 0)
13     );
14 end entity;
15
16 architecture behavior of Mod8Counter is
17
18 begin
19
20     process(CLK)
21
22         variable CountBuffer: std_logic_vector(2 downto 0);
23
24     begin
25
26         if(CLK'event and CLK='1') then
27             CountBuffer := CountBuffer + 1;
28         end if;
29
30         if(CountBuffer >= 7) then
31             RegisterClock <= '1';
32         else
33             RegisterClock <= '0';
34         end if;
35
36         SelOut <= CountBuffer;
37
38     end process;
39
40 end architecture;
```