File: X:/ESE382-Lab/Lab5/converter_xs3_to_BCD/xs3_to_BCD_case/src/xs3_bcd_case.vhd

```vhdl
1   ----------------------------------------------------------------------------
2   --
3   -- Title       : xs3_to_BCD_case
4   -- Design      : xe3_to_BCD_case
5   -- Author      : Dongyun Lee
6   -- Company     : Stony Brook University
7   --
8   ----------------------------------------------------------------------------
9   --
10  -- File        : \\Mac\Home\Documents\Aldec_Codes\test\test\src\test.vhd
11  -- Generated   : Sun Feb 25 18:09:46 2024
12  -- From        : interface description file
13  -- By          : Itf2Vhdl ver. 1.22
14  --
15  ----------------------------------------------------------------------------
16  --
17  -- Description : converts a 4-bit Excess-3 (XS-3) input (p, q, r, s) to its corresponding Binary-Coded Decimal (BCD) output (d, c, b, a) using a case statement for the mapping.
18  --
19  ----------------------------------------------------------------------------
20  library IEEE;
21  use IEEE.STD_LOGIC_1164.ALL;
22
23  entity converter_xs3_bcd is
24      port ( p,q,r,s : in  std_logic;
25             d,c,b,a : out  std_logic
26      );
27  end entity converter_xs3_bcd;
28
29  architecture xs3_bcd_case of converter_xs3_bcd is
30      signal temp : std_logic_vector(3 downto 0);
31
32  begin
33      (d,c,b,a) <= temp;
34      casey : process (p,q,r,s)
35      begin
36          case std_logic_vector'(p,q,r,s) is
37              when "0011" => temp <= "0000";
38              when "0100" => temp <= "0001";
39              when "0101" => temp <= "0010";
40              when "0110" => temp <= "0011";
41              when "0111" => temp <= "0100";
42              when "1000" => temp <= "0101";
43              when "1001" => temp <= "0110";
44              when "1010" => temp <= "0111";
45              when "1011" => temp <= "1000";
46              when "1100" => temp <= "1001";
47              when others => temp <= "----";
48
49          end case;
50      end process;
51
```

```
52  end architecture xs3_bcd_case;
```