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2  --
3  -- Title       : xs3_to_BCD_if_vect
4  -- Design      : xs3_to_BCD_if_vect
5  -- Author      : Dongyun Lee
6  -- Company     : Stony Brook University
7  --
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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
18 --               corresponding Binary-Coded Decimal (BCD) output (d, c, b, a) using if
19 --               statement.
20 --               using vectors instead of scalars.
21 -----
22 library IEEE;
23 use IEEE.STD_LOGIC_1164.ALL;
24 use ieee.numeric_std.all;
25
26 entity converter_xs3_bcd is
27     port ( pqr : in  std_logic_vector(3 downto 0);
28           dcba : out std_logic_vector(3 downto 0)
29     );
30 end entity converter_xs3_bcd;
31
32 architecture xs3_bcd_case_if_vect of converter_xs3_bcd is
33 begin
34     casey : process (pqr)
35     begin
36         dcba <= "----";
37
38         if pqr = "0011" then
39             dcba <= "0000";
40         elsif pqr = "0100" then
41             dcba <= "0001";
42         elsif pqr = "0101" then
43             dcba <= "0010";
44         elsif pqr = "0110" then
45             dcba <= "0011";
46         elsif pqr = "0111" then
47             dcba <= "0100";
48         elsif pqr = "1000" then
49             dcba <= "0101";
50         elsif pqr = "1001" then
51             dcba <= "0110";
52         elsif pqr = "1010" then
53             dcba <= "0111";
54         --
55     end if;
56 end process;
57
58 end architecture xs3_bcd_case_if_vect;

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52         elsif pqrs = "1011" then
53             dcba <= "1000";
54         elsif pqrs = "1100" then
55             dcba <= "1001";
56         end if;
57     end process;
58
59 end architecture xs3_bcd_case_if_vect;
```