```
1   -- 3x8 Encoder Using Case Statement
2   ----------------------------------------------------------------------------------
3   library IEEE;
4   use IEEE.STD_LOGIC_1164.ALL;
5
6   entity encoder8x3_case is                                   -- Entity declaration
7       Port ( a,b,c,d,e,f,g,h : in  bit;                       -- Defining inputs and outputs
8              u : out  bit_vector(2 downto 0));
9   end encoder8x3_case;
10
11  architecture Behavioral of encoder8x3_case is               --Architecture Declaration
12
13  begin
14  process(a,b,c,d,e,f,g,h)
15  variable s: bit_vector(7 downto 0);
16  begin
17  s(0) := a;
18  s(1) := b;
19  s(2) := c;
20  s(3) := d;
21  s(4) := e;
22  s(5) := f;
23  s(6) := g;
24  s(7) := h;
25
26  case s is                                       --Initialization of case statement
27
28     when "00000001" => u <= "000";
29
30     when "00000010" => u <= "001";
31
32     when "00000100" => u <= "010";
33
34     when "00001000" => u <= "011";
35
36     when "00010000" => u <= "100";
37
38     when "00100000" => u <= "101";
39
40     when "01000000" => u <= "110";
41
42     when "10000000" => u <= "111";
43
44     when others => NULL;
45
46  end case ;                                  -- End of case
47  end process;                                -- End of process
48  end Behavioral;                             -- end of architecture
49
50
```