```
1   -- 3x8 Encoder using If-else Statement
2   ----------------------------------------------------------------------------------
3   library IEEE;                  --Importing library
4   use IEEE.STD_LOGIC_1164.ALL;
5
6
7   entity encoder8x3_if is        --Entity Declaration
8       Port ( a,b,c,d,e,f,g,h : in  bit;
9              p : out  bit_vector(2 downto 0));
10  end encoder8x3_if;
11
12  architecture Behavioral of encoder8x3_if is     --Architecture Declaration
13
14  begin
15  process(a,b,c,d,e,f,g,h)
16  variable s:bit_vector(7 downto 0);              --defining variables
17  variable n: bit_vector(2 downto 0);
18  begin
19  s(0):=a;s(1):=b;s(2):=c;s(3):=d;s(4):=e;s(5):=f;s(6):=g;s(7):=h;
20  if s = "00000001" then                          --Assigning value to output variable
    based on the input as per Truth table.
21     n:= "000";
22  elsif s = "00000010" then
23     n:= "001";
24  elsif s = "00000010" then
25     n:= "010";
26  elsif s = "00000010" then
27     n:= "011";
28  elsif s = "00000010" then
29     n:= "100";
30  elsif s = "00000010" then
31     n:= "101";
32  elsif s = "00000010" then
33     n:= "110";
34  elsif s = "00000010" then
35     n:= "111";
36  end if;                                    -- End of if
37  p <= n;                                    -- Assigning output variable value to
    Output Signal
38  end process;                               -- End of proces
39  end Behavioral;                            -- End of architecture
40
41
```