```
1   -- 1x8 Demux Using Case Statement
2   ----------------------------------------------------------------------------------
3   library IEEE;                                          --Importing Library
4   use IEEE.STD_LOGIC_1164.ALL;
5   entity demux1x8_case is                              -- Entity Declaration
6       Port ( a,s1,s2,s3 : in  bit;                     --Defining inputs and outputs
7              x : out  bit_vector(7 downto 0));
8   end demux1x8_case;                                     --End of Entity
9
10  architecture Behavioral of demux1x8_case is          --Architecture Declaration
11
12  begin
13  process(a,s1,s2,s3)                                  --Process Intialization
14  variable sel: bit_vector(2 downto 0);                --Variable Declaration
15  variable b: bit_vector(7 downto 0);                  --Variable Declaration
16  begin
17     sel(0):= s1;sel(1):= s2;sel(2):= s3;
18     case sel is
19        when "000" =>
20           b(0):=a;b(1):='0';b(2):='0';b(3):='0';b(4):='0';b(5):='0';b(6):='0';b(7):='0';
21
22        when "001" =>
23           b(0):='0';b(1):= a;b(2):='0';b(3):='0';b(4):='0';b(5):='0';b(6):='0';b(7):=
    '0';
24
25        when "010" =>
26           b(0):='0';b(1):='0';b(2):= a;b(3):='0';b(4):='0';b(5):='0';b(6):='0';b(7):=
    '0';
27
28        when "011" =>
29           b(0):='0';b(1):= '0';b(2):='0';b(3):=a;b(4):='0';b(5):='0';b(6):='0';b(7):=
    '0';
30
31        when "100" =>
32           b(0):='0';b(1):= '0';b(2):='0';b(3):= '0';b(4):=a;b(5):='0';b(6):='0';b(7):=
    '0';
33
34        when "101" =>
35           b(0):='0';b(1):= '0';b(2):='0';b(3):= '0';b(4):='0';b(5):=a;b(6):='0';b(7):=
    '0';
36
37        when "110" =>
38           b(0):='0';b(1):= '0';b(2):='0';b(3):= '0';b(4):='0';b(5):='0';b(6):=a;b(7):=
    '0';
39
40        when others =>
41           b(0):='0';b(1):= '0';b(2):='0';b(3):= '0';b(4):='0';b(5):='0';b(6):='0';b(7
    ):=a;
42
43     end case;                                       --End of case
44     x<=b;                                           --Assigning value back to original signal
45  end process;                                      --End of Process
46  end Behavioral;                                   --End of Architecture
47
48
```