```
1
2   --1x8 Demux using If-else
3   ----------------------------------------------------------------------------------
4   library IEEE;                                       --Importing Library
5   use IEEE.STD_LOGIC_1164.ALL;
6
7
8   entity demux1x8_if is                               -- Entity Declaration
9       Port ( a,s1,s2,s3 : in  bit;                    --Defining inputs and outputs
10            x : out  bit_vector(7 downto 0));
11  end demux1x8_if;                                    --End of Entity
12
13  architecture Behavioral of demux1x8_if is           --Architecture Declaration
14
15  begin
16  process(a,s1,s2,s3)                                 --Process Intialization
17  variable sel: bit_vector(2 downto 0);               --Variable Declaration
18  variable b: bit_vector(7 downto 0);                 --Variable Declaration
19  begin
20     sel(0):= s1;sel(1):= s2;sel(2):= s3;
21     if sel="000" then                                --Start of If-else statement
22        b(0):= a;
23     elsif sel="001" then
24        b(1):= a;
25     elsif sel="010" then
26        b(2):= a;
27     elsif sel="011" then
28        b(3):= a;
29     elsif sel="100" then
30        b(4):= a;
31     elsif sel="101" then
32        b(5):= a;
33     elsif sel="110" then
34        b(6):= a;
35     elsif sel="111" then
36        b(7):= a;
37     end if;                                          --End of If-else Statement
38     x<=b;
39     end process;                                     --End of Process
40  end Behavioral;                                     --End of Architecture
41
42
43
```