```
1   -- 8x1 Mux Using If-Else Statement
2   ----------------------------------------------------------------------------------
3   library IEEE;                                                 --Importing Library
4   use IEEE.STD_LOGIC_1164.ALL;
5
6   entity mux8x1_if is                                           -- Entity Declaration
7       Port ( a0,a1,a2,a3,a4,a5,a6,a7 : in std_logic;            --Defining inputs and outputs
8              x,y,z: in std_logic;
9             b : out  STD_LOGIC);
10  end mux8x1_if;                                                --End of Entity
11
12  architecture Behavioral of mux8x1_if is                       --Architecture Declaration
13
14  begin
15     process(a0,a1,a2,a3,a4,a5,a6,a7,x,y,z)                     --Process Intialization
16     variable s: STD_LOGIC_vector(2 downto 0);                  --Variable Declaration
17     begin
18     s(0):= x;
19     s(1):= y;
20     s(2):= z;
21     if s = "000" then                                          --Start of If-else statement
22        b <= a0;
23     elsif s = "001" then
24        b <= a1;
25     elsif s = "010" then
26        b <= a2;
27     elsif s = "011" then
28        b <= a3;
29     elsif s= "100" then
30        b <= a4;
31     elsif s="101" then
32        b <= a5;
33     elsif s= "110" then
34        b <= a6;
35     elsif s = "111" then
36        b <= a7;
37     end if;                                                    --End of If-else Statement
38
39  end process;                                                  --End of Process
40  end Behavioral;                                               --End of Architecture
41
```