

```
1  library ieee;
2  use ieee.numeric_std.all;
3  use ieee.std_logic_1164.all;
4
5  entity Mux is
6      port(
7          DataIn: in std_logic_vector(7 downto 0);
8          Sel: in std_logic_vector(2 downto 0);
9          En: in std_logic;
10         DataOut: out std_logic
11     );
12 end entity;
13
14 architecture behavior of Mux is
15
16     signal DataBuffer: std_logic;
17
18     begin
19
20         with Sel select
21             DataBuffer <= DataIn(0) when "000",
22                          DataIn(1) when "001",
23                          DataIn(2) when "010",
24                          DataIn(3) when "011",
25                          DataIn(4) when "100",
26                          DataIn(5) when "101",
27                          DataIn(6) when "110",
28                          DataIn(7) when "111",
29                          '0' when OTHERS;
30
31         DataOut <= DataBuffer when En = '0' else '0';
32
33     end architecture;
34
```