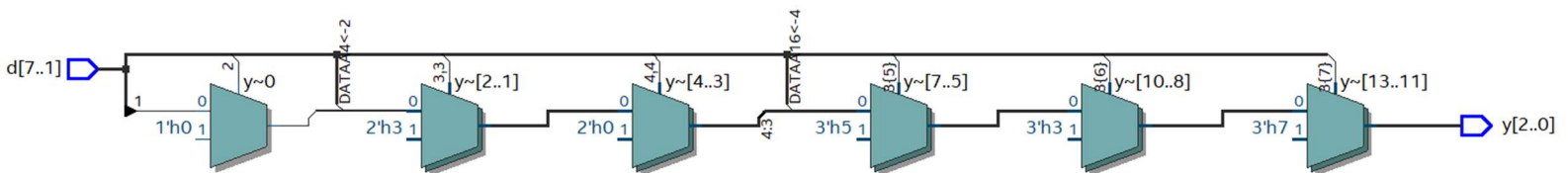


Program 1:

```

1  library IEEE;
2  use IEEE.std_logic_1164.ALL;
3
4  ENTITY priority_encoder IS
5  PORT( d: IN std_logic_vector(7 DOWNTO 1);
6        y:OUT std_logic_vector(2 DOWNTO 0) );
7  END;
8
9  ARCHITECTURE encoder_arch OF priority_encoder IS
10 BEGIN
11     y <= "111" WHEN d(7)='1';
12     else "110" WHEN d(6)='1';
13     else "101" WHEN d(5)='1';
14     else "100" WHEN d(4)='1';
15     else "011" WHEN d(3)='1';
16     else "010" WHEN d(2)='1';
17     else "001" WHEN d(1)='1';
18     else "000";
19 END;

```

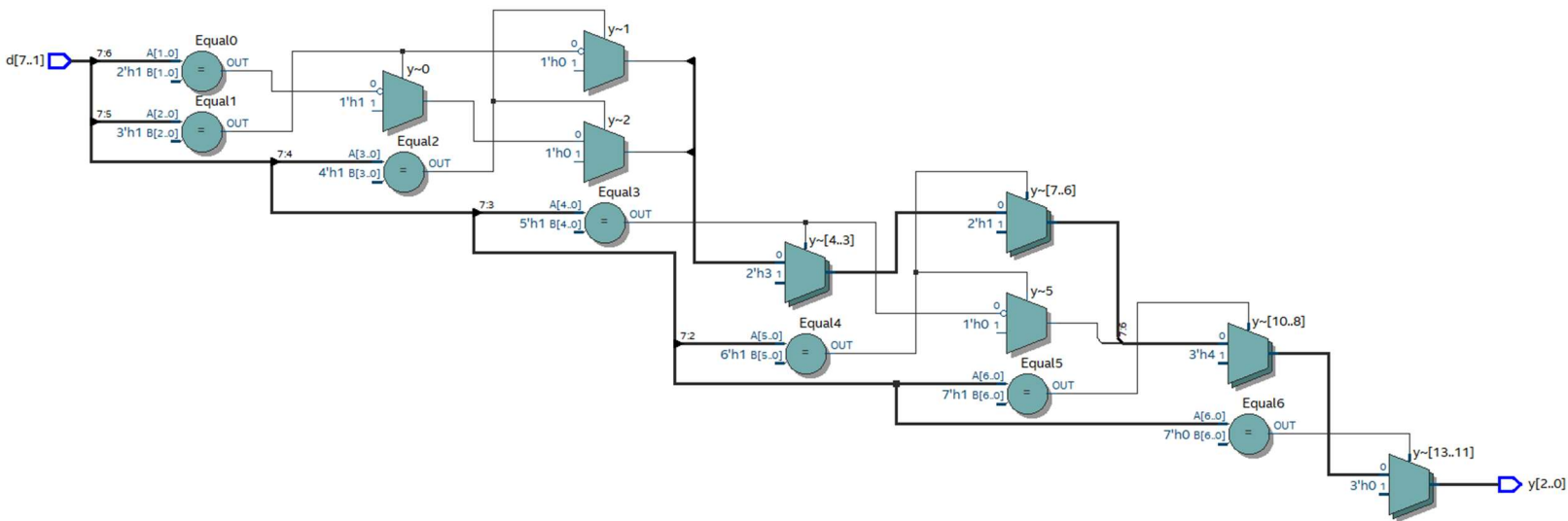


Program 2:

```

1  library IEEE;
2  use IEEE.std_logic_1164.ALL;
3
4  ENTITY priority_encoder IS
5  PORT( d: IN std_logic_vector(7 DOWNTO 1);
6        y:OUT integer range 0 TO 7);
7  END;
8
9  ARCHITECTURE encoder_arch OF priority_encoder IS
10 BEGIN
11     y <= 0 WHEN d = "0000000";
12     else 1 WHEN d = "0000001";
13     else 2 WHEN d(7 downto 2) = "000001";
14     else 3 WHEN d(7 downto 3) = "00001";
15     else 4 WHEN d(7 downto 4) = "0001";
16     else 5 WHEN d(7 downto 5) = "001";
17     else 6 WHEN d(7 downto 6) = "01";
18     else 7;
19 END;

```

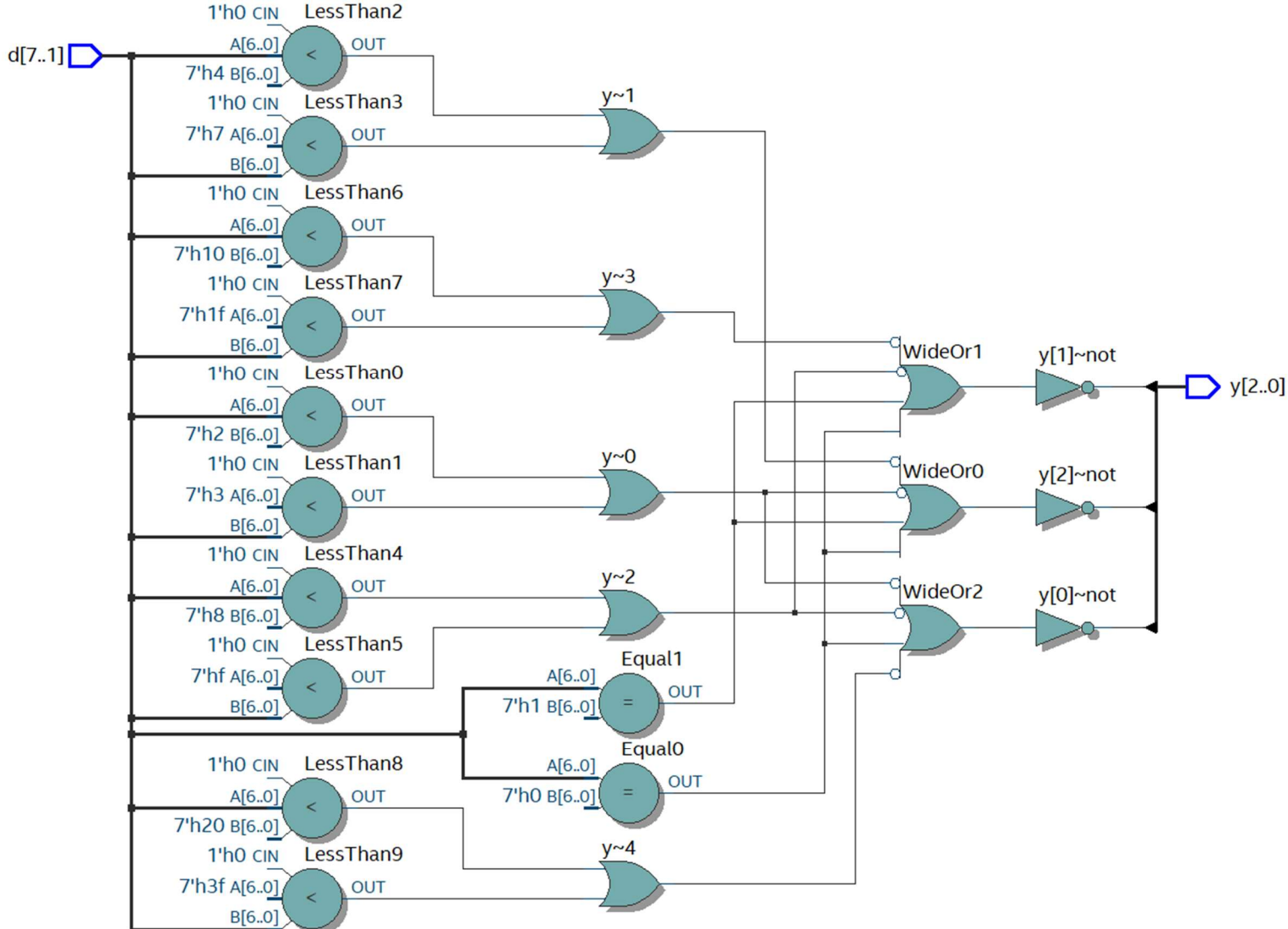


Program 3:

```

1  library IEEE;
2  use IEEE.std_logic_1164.ALL;
3
4  ENTITY priority_encoder IS
5  PORT( d: IN std_logic_vector(7 DOWNTO 1);
6        y:OUT integer range 0 TO 7);
7  END;
8
9  ARCHITECTURE encoder_arch OF priority_encoder IS
10 BEGIN
11   with d select
12     y <= 0 WHEN "0000000",
13          1 WHEN "0000001",
14          2 WHEN "0000010" to "0000011",
15          3 WHEN "0000100" to "0000111",
16          4 WHEN "0001000" to "0001111",
17          5 WHEN "0010000" to "0011111",
18          6 WHEN "0100000" to "0111111",
19          7 WHEN OTHERS;
20 END;

```



Program 4:

```

1  library IEEE;
2  use IEEE.std_logic_1164.ALL;
3
4  ENTITY priority_encoder IS
5  PORT( d: IN integer range 0 TO 127;
6        y:OUT std_logic_vector(2 DOWNTO 0));
7  END;
8
9  ARCHITECTURE encoder_arch OF priority_encoder IS
10 BEGIN
11     with d select
12         y <= "000" WHEN 0,
13              "001" WHEN 1,
14              "010" WHEN 2 to 3,
15              "011" WHEN 4 to 7,
16              "100" WHEN 8 to 15,
17              "101" WHEN 16 to 31,
18              "110" WHEN 32 to 63,
19              "111" WHEN OTHERS;
20 END;
```

