

LABORATORIO DE DISEÑO DE SISTEMAS DIGITALES
PRÁCTICA 4

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PROBLEMA.

Diseñe un comparador que compare dos entradas (a y b) e indique cuando $a > b$, cuando $a < b$ y cuando $a = b$.

Este problema se resuelve así:

use IEEE.NUMERIC_STD.ALL;

```
entity practica4 is port(  
  a, b: in std_logic_vector(3 downto 0),  
  x, y, z: out std_logic);  
end practica4;
```

architecture Behavioral of practica4 is
begin

process (a, b)
begin

if (a = b) then

x <= '1';

y <= '0';

z <= '0';

elsif (a > b) then

x <= '0';

y <= '1';

z <= '0';

else

z <= '1';

end if;

end process;

end Behavioral;

```
help
23 -- Uncomment the following library declaration if using
24 -- arithmetic functions with Signed or Unsigned values
25 use IEEE.NUMERIC_STD.ALL;
26
27 -- Uncomment the following library declaration if instantiating
28 -- any Xilinx primitives in this code.
29 --library UNISIM;
30 --use UNISIM.VComponents.all;
31
32 entity pract45 is port(
33   a,b: in std_logic_vector( 3 downto 0);
34   x,y,z: out std_logic);
35 end pract45;
36
37 architecture Behavioral of pract45 is
38 begin
39   process (a,b)
40   begin
41     if (a = b) then
42       x <= '1';
43       y <= '0';
44       z <= '0';
45     elsif (a > b) then
46       x <= '0';
47       y <= '1';
48       z <= '0';
49     else
50       x <= '0';
51       y <= '0';
52       z <= '1';
53     end if;
54   end process;
55
56 end Behavioral;
```

pract45.vhd Design Summary (Programming File Generated) pract45.ucf