

# Memoria Practica 2

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## Conversor binari a BCD de 8 bits

Aquest component el farem amb vhdL i te l'objectiu de convertir la sortida del multiplicador de 8 bits a bcd per tal de mostrar a la placa. Te la següent forma

```
LIBRARY ieee; USE ieee.std_logic_1164.ALL;

ENTITY BIN_BCD_8B IS PORT (
    BIN : IN STD_LOGIC_VECTOR(7 downto 0);
    BCD : OUT STD_LOGIC_VECTOR(7 downto 0));
END BIN_BCD_8B;

ARCHITECTURE taula_veritat OF BIN_BCD_8B IS
    BEGIN
        with BIN SELECT BCD <=
            "10011001" WHEN "00111000", -- 81
            "01110010" WHEN "01001000", -- 72
            "01100100" WHEN "01000000", -- 64
            "01010110" WHEN "00111000", -- 56
            "01010100" WHEN "00111000", -- 54
            "01001001" WHEN "00110001", -- 49
            "01001000" WHEN "00110000", -- 48
            "01000101" WHEN "00101101", -- 45
            "01000010" WHEN "00101010", -- 42
            "01000000" WHEN "00101000", -- 40
            "00110110" WHEN "00100100", -- 36
            "00110101" WHEN "00100011", -- 35
            "00110010" WHEN "00100000", -- 32
            "00110000" WHEN "00011110", -- 30
            "00101000" WHEN "00011100", -- 28
            "00100110" WHEN "00011011", -- 27
            "00100101" WHEN "00011001", -- 25
            "00100100" WHEN "00011000", -- 24
            "00100001" WHEN "00010101", -- 21
            "00100000" WHEN "00010100", -- 20
            "00011000" WHEN "00010010", -- 18
            "00010110" WHEN "00010000", -- 16
            "00010101" WHEN "00001111", -- 15
            "00010100" WHEN "00001110", -- 14
            "00010010" WHEN "00001100", -- 12
            "00010000" WHEN "00001010", -- 10
            "00001001" WHEN "00001001", -- 9
            "00001000" WHEN "00001000", -- 8
            "00000111" WHEN "00000111", -- 7
            "00000110" WHEN "00000110", -- 6
            "00000101" WHEN "00000101", -- 5
            "00000100" WHEN "00000100", -- 4
            "00000011" WHEN "00000011", -- 3
            "00000010" WHEN "00000010", -- 2
            "00000001" WHEN "00000001", -- 1
            "00000000" WHEN "00000000", -- 0
            "-----" WHEN OTHERS;
END taula_veritat;
```

## Conversor de binari de 4 bits a 8 bits

Aquest component el connectarem abans de la entrada del multiplicador per a transformar la entrada de 4 bits a la que necessita el multiplicador que es de 8 bits. Aquest l'únic que farà es omplir de 0 les primeres 4 entrades.

