Explanation Of Code

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The entity four_to_seven in the code refers to the combinational circuit which converts the four input bits into seven output bits which are input into the seven segment display.There are four input signals each one for one bit since 0-9 are all 4-bit integers.The seven outputs correspond to A,B,C,D,E,F,G of the seven segment display.

The entity eight_to_two_fours in the code refers to the combinational circuit which ensures that the eight bits corresponding to the number displayed on hours display is converted into two four bits so that they go as inputs to a four_to_seven component which finally displays the two digits separately.

The entitiy mod_ten corresponds to the modulo 10 counter used to count digits upto 10 which is used to display the digits S0,M0.The entitiy mod_six corresponds to the modulo 6 counter used to count digits upto 6 which is used to display the digits S1,M1.10.The entitiy hours corresponds to modulo 24 counter which is used to count the number of hours passed.The entity blink corresponds to the dot flashing in Mode-1 which flashes at a frequency of 2Hz and is triggered by a clock of suitable frequency.The input bit w is related to the mode of the display.It can be obtained by 01&k where k is the mode of display.