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library IEEE;
use IEEE.STD_LOGIC_1164.ALL;

entity Traffic_light is
    Port ( clk : in STD_LOGIC;
          clr : in STD_LOGIC;
          light : out STD_LOGIC_VECTOR (5 downto 0));
end Traffic_light;

architecture Behavioral of Traffic_light is
    type state is (s0,s1,s2,s3,s4,s5);
    signal st : state;
    signal count : integer ;
    begin
        process(clr,clk,count,st)
        begin
            if (clr = '1') then
                st <= s0;
                count <= 0;
            elsif (rising_edge(clk)) then
                case st is
                    when s0 =>
                        if count = 15 then
                            st <= s1;
                            count <= 1 ;
                            light <= "010100";
                        else
                            st <= s0;
                            count <= count + 1;
                            light <= "001100";
                        end if;
                    when s1 =>
                        if count = 3 then
                            st <= s2;
                            count <= 1 ;
                            light <= "100100";
                        else
                            st <= s1;
                            count <= count + 1;
                            light <= "010100";
                        end if;
                    when s2 =>
                        if count = 3 then
                            st <= s3;

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count <= 1 ;
light <= "100001";
else
st <= s2;
count <= count + 1;
light <= "100100";
end if;
when s3 =>
if count = 15 then
st <= s4;
count <= 1 ;
light <= "100010";
else
st <= s3;
count <= count + 1;
light <= "100001";
end if;
when s4 =>
if count = 3 then
st <= s5;
count <= 1 ;
light <= "100100";
else
st <= s4;
count <= count + 1;
light <= "100010";
end if;
when s5 =>
if count = 3 then
st <= s0;
count <= 1 ;
light <= "001100";
else
st <= s5;
count <= count + 1;
light <= "100100";
end if;
end case;
end if ;
end process;
end Behavioral;

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