Lab 08: BCD-to-7 segment display converter

- Sample code for HEX-to-7 segment display converter
- Please use negative logic for the seven segment LED display, i.e., use expression such as
- *when "0000" =>leds<="0000001"*, as the DE1 board uses such logic for the LEDs.

Converter

- This is a sample code for HEX-to-7 segment LED display

```
LIBRARY ieee ;
USE ieee.std_logic_1164.all ;
ENTITY seg7 IS
        PORT (     bcd: IN STD_LOGIC_VECTOR(3 DOWNTO 0) ;
                   leds: OUT STD_LOGIC_VECTOR(0 TO 6) ) ;
END seg7 ;
ARCHITECTURE Behavior OF seg7 IS
BEGIN
        PROCESS ( bcd )
        BEGIN
                CASE bcd IS                                    --          abcdefg
                    WHEN "0000" => leds <= "0000001";
                    WHEN "0001" => leds <= "1001111";
                    WHEN "0010" => leds <= "0010010";
                    WHEN "0011" => leds <= "0000110";
                    WHEN "0100" => leds <= "1001100";
                    WHEN "0101" => leds <= "0100100";
                    WHEN "0110" => leds <= "0100000";
                    WHEN "0111" => leds <= "0001111";
                    WHEN "1000" => leds <= "0000000";
                    WHEN "1001" => leds <= "0001100";
                    WHEN "1010" => leds <= "0001000";
                    WHEN "1011" => leds <= "1100000";
                    WHEN "1100" => leds <= "0110001";
                    WHEN "1101" => leds <= "1000010";
                    WHEN "1110" => leds <= "0110000";
                    WHEN "1111" => leds <= "0111000";
                    WHEN OTHERS    => leds   <= "-------" ;
                END CASE ;
        END PROCESS ;
END Behavior ;
```

Figure 6.47. HEX-to-7-segment converter via case statement.