Name: Richard Raymond J. Canda

C.Y.S.: BSCpE – 3A

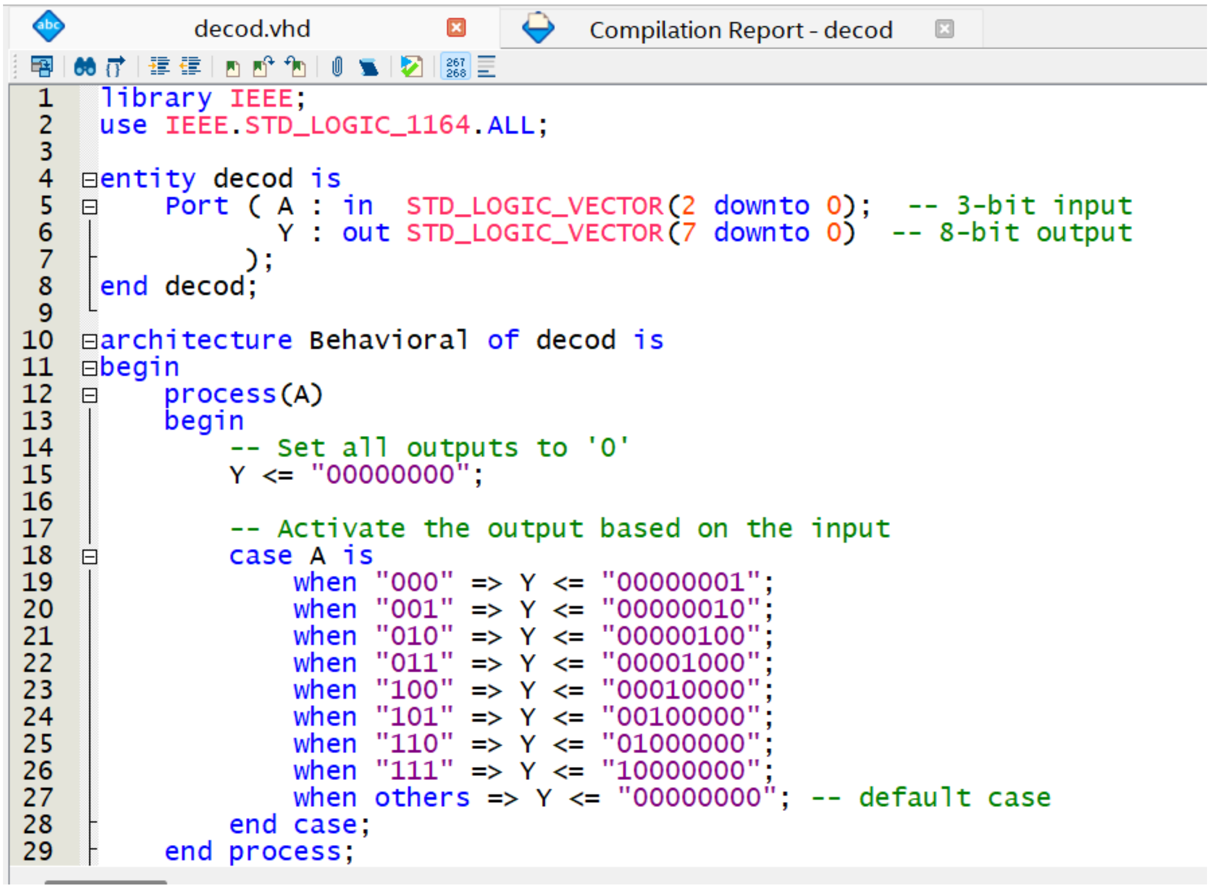
The CODE:

```
library IEEE;
use IEEE.STD_LOGIC_1164.ALL;

entity decod is
    Port ( A : in  STD_LOGIC_VECTOR(2 downto 0);  -- 3-bit input
           Y : out STD_LOGIC_VECTOR(7 downto 0)  -- 8-bit output
         );
end decod;

architecture Behavioral of decod is
begin
    process(A)
    begin
        -- Set all outputs to '0'
        Y <= "00000000";

        -- Activate the output based on the input
        case A is
            when "000" => Y <= "00000001";
            when "001" => Y <= "00000010";
            when "010" => Y <= "00000100";
            when "011" => Y <= "00001000";
            when "100" => Y <= "00010000";
            when "101" => Y <= "00100000";
            when "110" => Y <= "01000000";
            when "111" => Y <= "10000000";
            when others => Y <= "00000000"; -- default case
        end case;
    end process;
end Behavioral;
```



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    end process;
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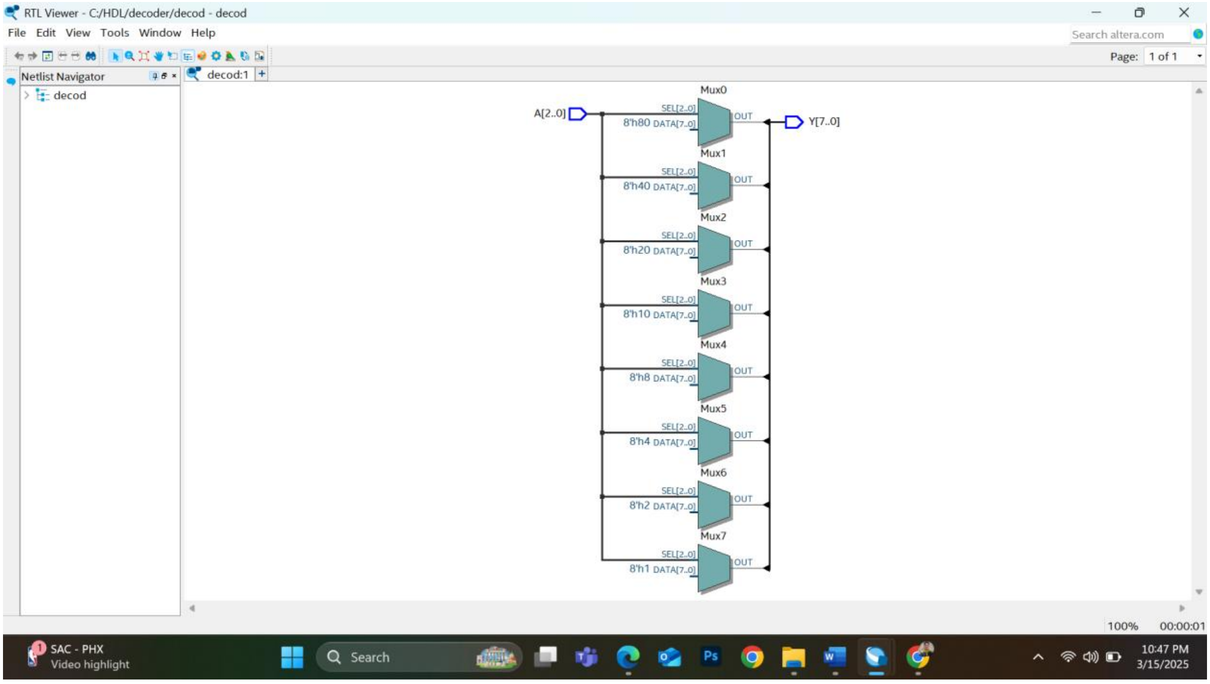
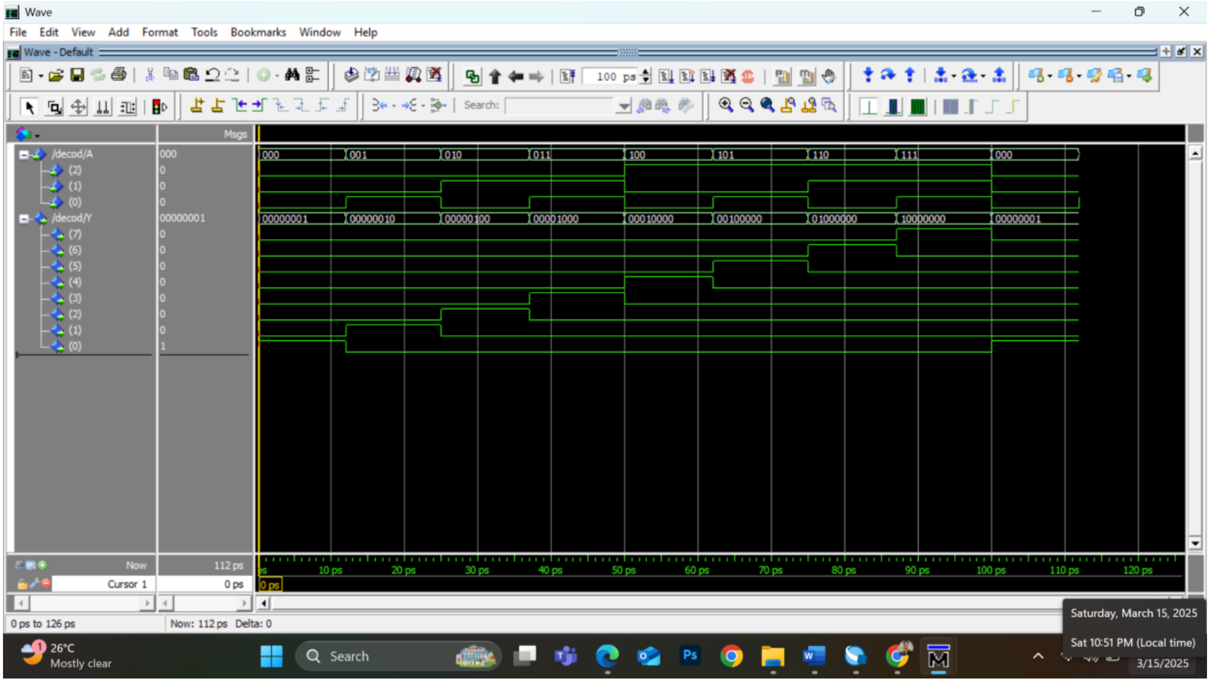
The LOGIC GATE:



The WAVEFORM:


Wave
File Edit View Add Format Tools Bookmarks Window Help
Wave - Default
Search:
Msgs
/decod/A 000
(2) 0
(1) 0
(0) 0
/decod/Y 00000001
(7) 0
(6) 0
(5) 0
(4) 0
(3) 0
(2) 0
(1) 0
(0) 1
000
001
010
011
100
101
110
111
000
00000001
00000010
00000100
00001000
00010000
00100000
01000000
10000000
00000001
Now 112 ps
Cursor 1 0 ps
0 ps
10 ps
20 ps
30 ps
40 ps
50 ps
60 ps
70 ps
80 ps
90 ps
100 ps
110 ps
120 ps
0 ps to 126 ps
Now: 112 ps Delta: 0
26°C
Mostly clear
Search
Saturday, March 15, 2025
Sat 10:51 PM (Local time)
3/15/2025