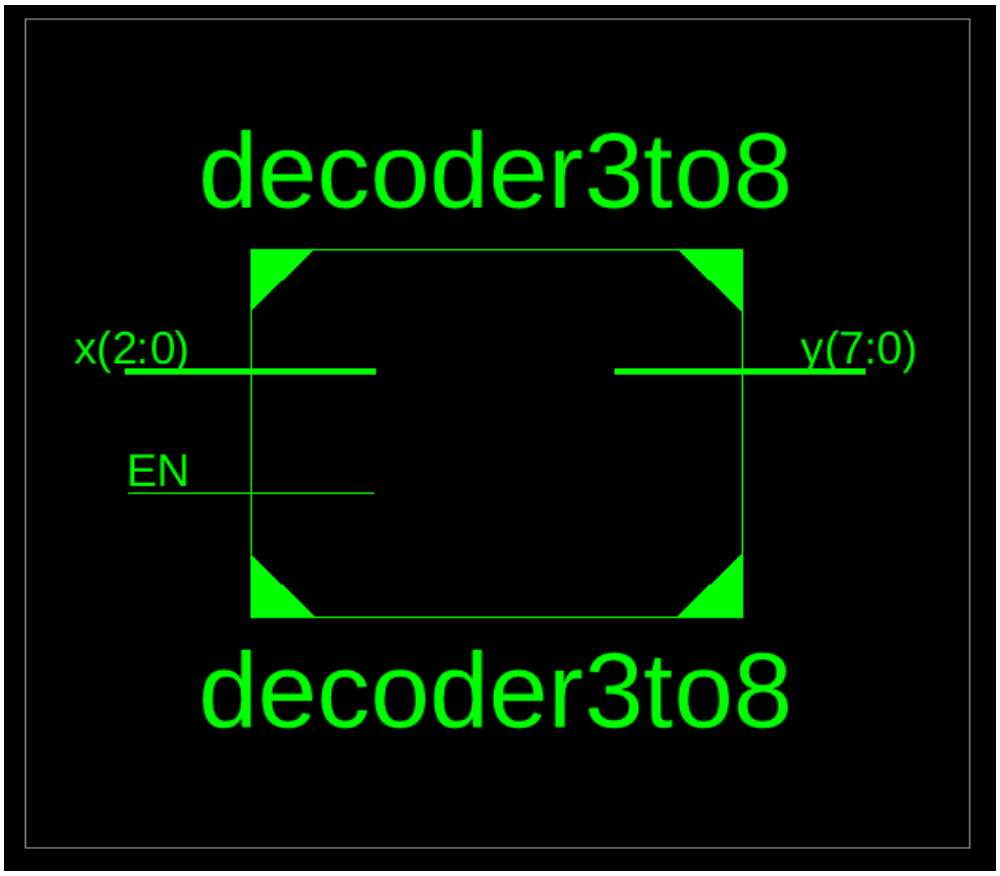
İSTANBUL ÜNİVERSİTESİ
BİLGİSAYAR MÜHENDİSLİĞİ

Bilgisayar Organizasyonu ve Tasarımı Laboratuvarı

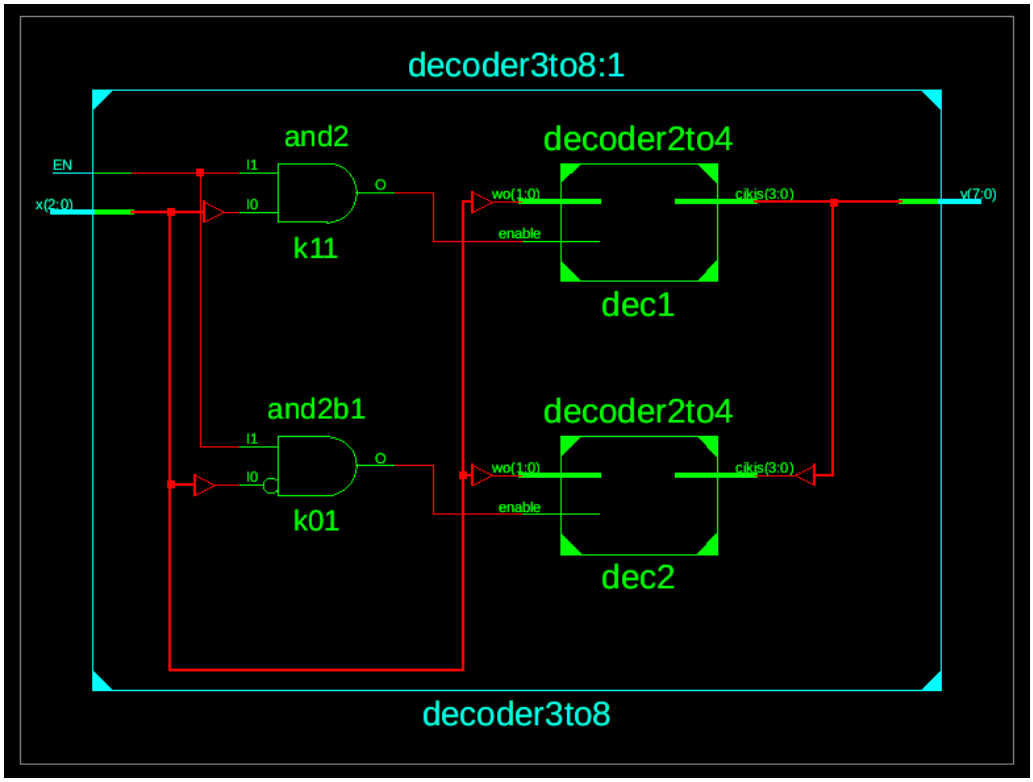
Uygulama 2 :

2 adet 2-4 Kod Çözücü Kullanılarak 3-8 Kod Çözücü Oluşturulması

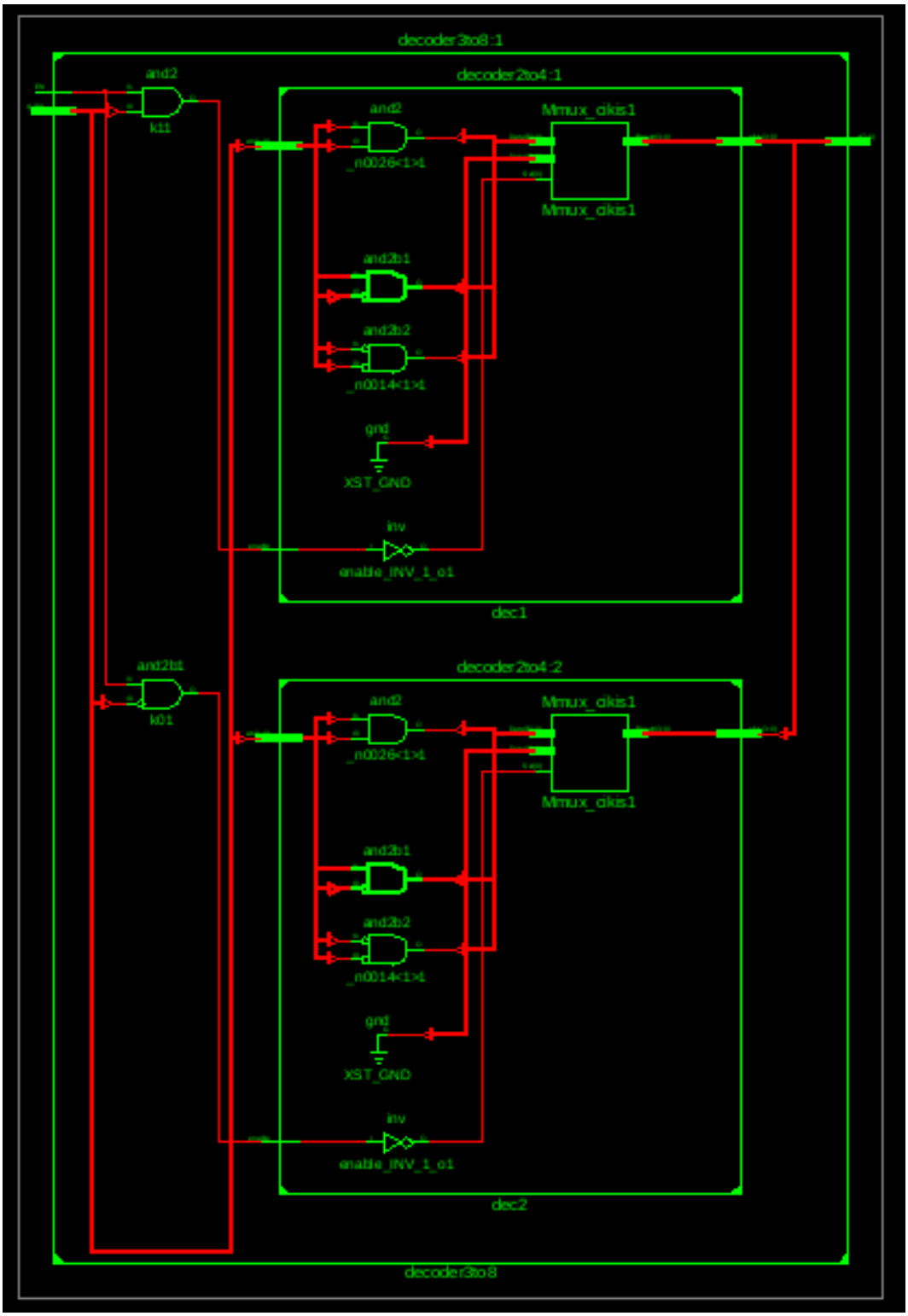
1- Devre:



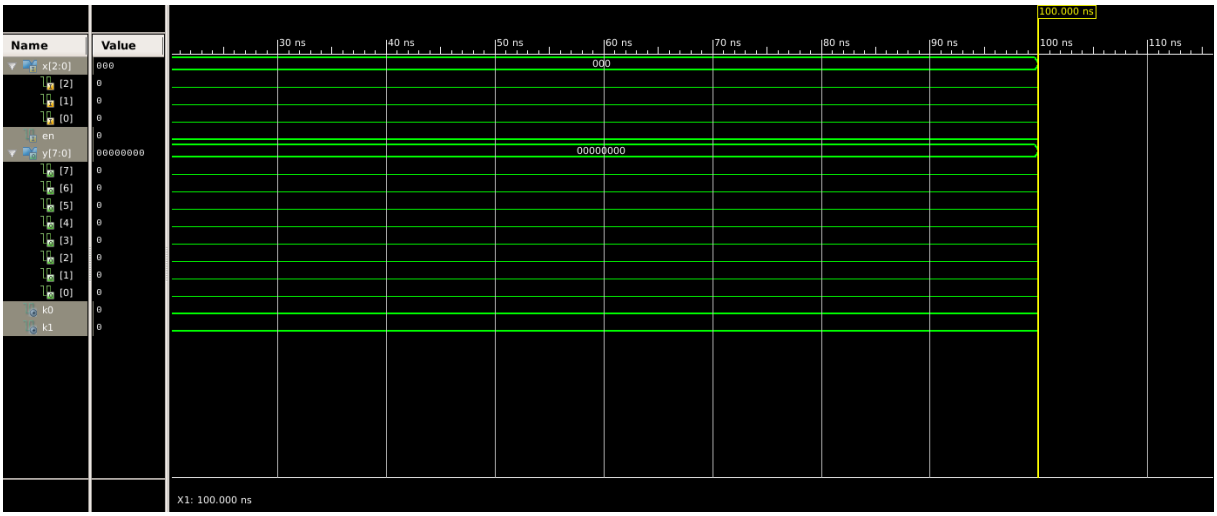
2.1- Şematik:

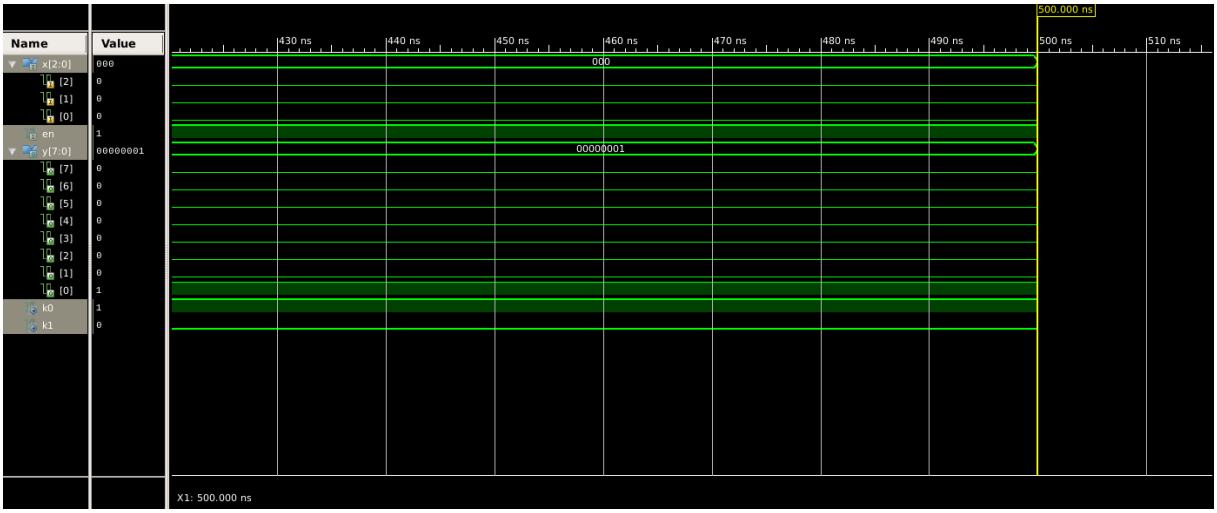


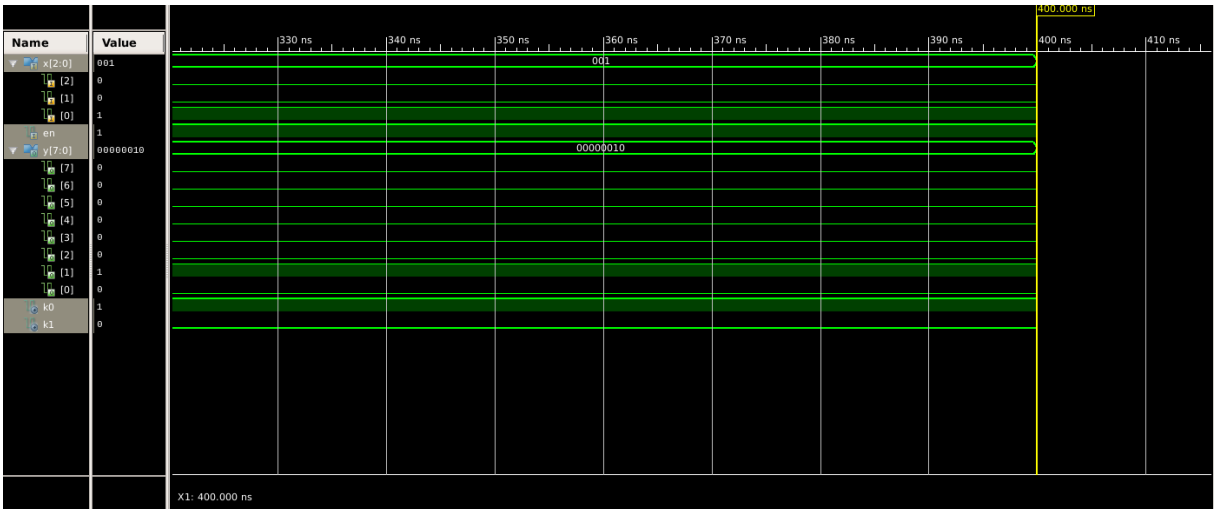
2.2- Detaylı Şematik:

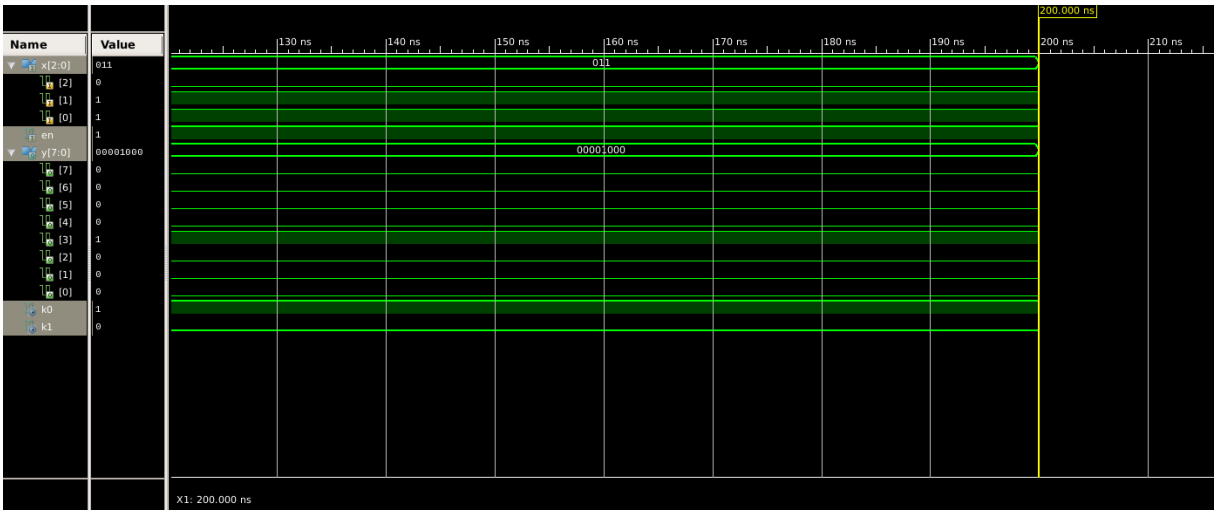


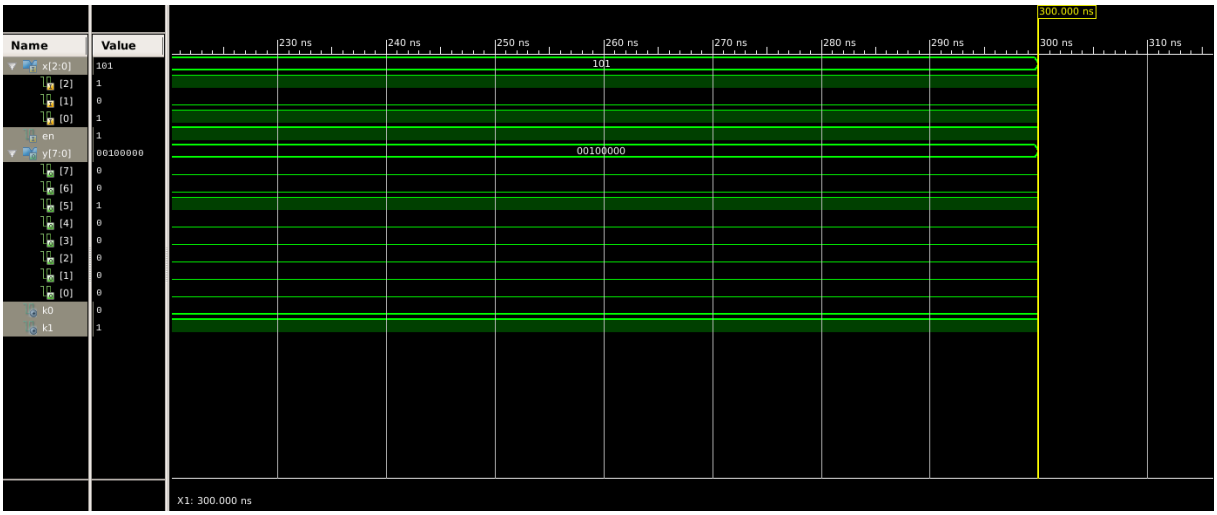
3- Simülasyonlar:











4- Kodlar:

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--3to8 decoder kodumuz

library IEEE;
use IEEE.STD_LOGIC_1164.ALL;

entity decoder3to8 is
port (          x    : in STD_LOGIC_VECTOR (2 downto 0);          --giris bitleri
                EN   : in STD_LOGIC;                              --enable biti
                y    : out STD_LOGIC_VECTOR (7 downto 0));        --cikis bitleri
end decoder3to8;

architecture Behavioral of decoder3to8 is
```

```
component decoder2to4 is
port (              enable : in STD_LOGIC;
                    wo     : in STD_LOGIC_VECTOR (1 downto 0);
                    cikis  : out STD_LOGIC_VECTOR(3 downto 0));
end component;

signal k0: STD_LOGIC;
signal k1: STD_LOGIC;

begin
  dec1: decoder2to4 port map(k1,x(1 downto 0),y(7 downto 4));
  dec2: decoder2to4 port map(k0,x(1 downto 0),y(3 downto 0));
  k0 <= NOT x(2) AND EN;
  k1 <= x(2) AND EN;

end Behavioral;

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--2to4 decoder kodumuz

library IEEE;
use IEEE.STD_LOGIC_1164.ALL;


entity decoder2to4 is
port (              enable : in STD_LOGIC;
                    wo     : in STD_LOGIC_VECTOR (1 downto 0);
                    cikis  : out STD_LOGIC_VECTOR (3 downto 0));
end decoder2to4;

architecture Behavioral of decoder2to4 is

begin
cikis <=   "0000" when enable='0' else
           "0001" when wo="00" else
           "0010" when wo="01" else
           "0100" when wo="10" else
           "1000";

end Behavioral;
```