

ENİS ÖGDÜM

BİLGİSAYAR BİLİMLERİNE

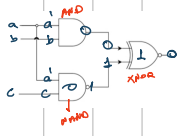
GİRİŞ

1.ÖDEV

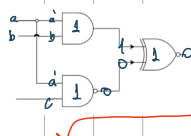
1.GRUP

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d-)



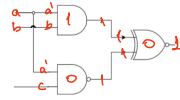
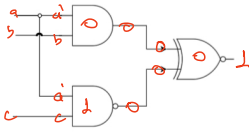
$a=0$	$a=1$	$a=0$
$b=0$	$b=0$	$b=1$
$c=1$	$c=0$	$c=0$
$c=0$		$c=1$



$a=1$   
 $b=1$   
 $c=1$

a	b	c	out
1	0	1	0
1	0	0	0
0	0	0	0
1	1	0	0
1	1	1	0
0	1	1	0

$a=0, b=1, c=1, out=0$



$a=1$   
 $b=1$   
 $c=0$

<del><math>a=0</math></del>	$a=1$	<del><math>a=0</math></del>
<del><math>b=0</math></del>	$b=0$	<del><math>b=1</math></del>
<del><math>c=1</math></del>	$c=1$	<del><math>c=0</math></del>

a	b	c	out
0	0	1	1
0	1	0	1

Tüm Gıvı Deęerleri

a	b	c	out
0	0	1	1
0	1	0	1
0	1	1	0
1	1	0	0
0	0	0	0
1	0	0	0
1	0	1	0
1	1	1	0

2a) 0 1 0 1 / 1 0 1 / 1 1 0 / 1 0 0 / 0 0 0

(0)<sub>8</sub> (5)<sub>8</sub> (5)<sub>8</sub> (6)<sub>8</sub> (4)<sub>8</sub> 0

(055640)<sub>8</sub>

0 1 0 1 / 1 0 1 1 / 1 0 1 0 / 0 0 0 0

(5)<sub>16</sub> (5)<sub>16</sub> (A)<sub>16</sub> (0)<sub>16</sub>

(5BAP)<sub>16</sub>

2b) 0 0 1 0 1 / 1 1 0 0 / 1 1 1 1 / 0 1 1 0 0 0 1 1

(0)<sub>8</sub> (2)<sub>8</sub> (3)<sub>8</sub> (6)<sub>8</sub> (1)<sub>8</sub> (7)<sub>8</sub> (6)<sub>8</sub> (7)<sub>8</sub> (0)<sub>8</sub> (3)<sub>8</sub>

(0236176703)<sub>8</sub>

0 0 1 0 1 / 1 1 0 0 / 1 1 1 1 / 0 1 1 0 0 0 1 1

(2)<sub>16</sub> (7)<sub>16</sub> (6)<sub>16</sub> (F)<sub>16</sub> (0)<sub>16</sub> (C)<sub>16</sub> (3)<sub>16</sub>

(278F0C3)<sub>16</sub>

2c) 1 1 0 0 1 1

(3)<sub>8</sub> (0)<sub>8</sub> (7)<sub>8</sub>

(307)<sub>8</sub>

1 1 0 0 1 1

(C)<sub>16</sub> (7)<sub>16</sub>

(C7)<sub>16</sub>

2d) 1 1 0 1 1

(3)<sub>8</sub> (3)<sub>8</sub>

(33)<sub>8</sub>

1 1 0 1 1

(4)<sub>16</sub> (B)<sub>16</sub>

(4B)<sub>16</sub>

2-) A028

↓	0	2	8
↓	↓	↓	↓
0110	0000	0010	0100

(0110 0000 0010 0100)<sub>2</sub>

(0110 0000 0010 0100)<sub>2</sub>

(06002)<sub>8</sub>

3-) 1010

1	0	1	0
↓	↓	↓	↓
(0001)	(0000)	(0001)	(0000)

(0001 0000 0001 0000)<sub>2</sub>

(010020)<sub>8</sub>

3-) 9876

9	8	7	6
↓	↓	↓	↓
(1001)	1000	0111	0110

(1001 1000 0111 0110)<sub>2</sub>

(114166)<sub>8</sub>

3-) 180B

1	8	0	B
↓	↓	↓	↓
(0001)	(1000)	(0000)	(1011)

(0001 1000 0000 1011)<sub>2</sub>

(01433)<sub>8</sub>

4)

1 byte = 8 bit

2<sup>10</sup> byte = 1kb

2<sup>10</sup> · 2<sup>6</sup> · 2<sup>3</sup> = 2<sup>19</sup>

2<sup>19</sup> = 2<sup>14</sup> · 2<sup>5</sup>

5-) a) 6.125

(110.001)<sub>2</sub>

0.125 · 2 = 0.25

0.25 · 2 = 0.5

0.5 · 2 = 1.0

$$\rightarrow 20.375 = (10100.011)_2$$

5718210

$$b_2) \quad \begin{array}{r} 20201 \\ 1010 \\ \hline 1011 \end{array} \rightarrow 2 \cdot 0 + 1 \cdot 1 + 2 \cdot 1 + 2 \cdot 1 = 2 + 1 + 2 + 2 = 7$$

7-)  $(0000000100000000)_2 \xrightarrow{2'ye\ k\u00fcmle} \text{Say\u0131\ pozitif\ oldu\u011fu\ i\u00e7in\ a\u011f\u0131r\ k\u00fcmle}$

7b-)  $(0000000010000001) \rightarrow (0000000010000001) \rightarrow$   

$$\begin{array}{r} 1111111011111110 \\ + \\ (1111111101111111)_2 \end{array} \} 2'ye\ k\u00fcmle$$

7c-)  $(0000000000001111) \rightarrow$   

$$\begin{array}{r} 1111111111110000 \\ + \\ (1111111111110001)_2 \end{array} \rightarrow 2'ye\ k\u00fcmle$$

7d-)  $(0000000000111111)_2 \rightarrow \text{pozitif\ say\u0131}$

8-) A\u015fa\u011fda fark\u0131 formatlarda verilen say\u0131lar\u0131 onluk tabana çevirip k\u00fc\u00e7\u00fckten b\u00fcy\u00fck\u00e7e sıralayınız.

- 1110 (İşaretsiz İkili Sayı - Binary Unsigned Number)  $\rightarrow 2^3 + 2^2 + 2^1 + 2^0 = 14$
- 7 (Onluk - Decimal)  $\rightarrow 7$
- F (Onaltılık - Hexadecimal)  $\rightarrow 15$
- 010 (Sekizlik - Octal)  $\rightarrow 0 \cdot 8^2 + 1 \cdot 8^1 + 0 \cdot 8^0 = 8$
- IX (Romen - Roman)  $\rightarrow 9$
- 1001 01 (İşaretsiz İkili Sayı - Binary Unsigned Number)  $\rightarrow 1 \cdot 2^5 + 0 \cdot 2^4 + 0 \cdot 2^3 + 1 \cdot 2^2 + 0 \cdot 2^1 + 1 \cdot 2^0 = 13$
- 1301 1010 (2'nin T\u00fcmleyeni ile İşaretsiz İkili Sayı - Signed number with Two's complement)  $\rightarrow -41$

110110101  

$$\begin{array}{r} 110110101 \\ - \\ 11011001 \\ \hline 00100100 \\ 2^4 + 2^5 = -41 \end{array}$$

F)  $(1110)_2 > (1001.01)_2 > (X) > (010)_8 > (7)_{10} > (101100)_2$

9a-)  $1.625 \rightarrow (1.101)_2 \rightarrow$   

$$\begin{array}{r} 0.615 \\ \times 2 \\ \hline 1.23 \\ \times 2 \\ \hline 2.46 \\ \times 2 \\ \hline 4.92 \\ \times 2 \\ \hline 9.84 \end{array}$$

$1 + \frac{5}{2} = 5 \} \text{exponent} \rightarrow (101)_2$   
 $1101 \} \text{mantissa}$

$\odot \mid 1 \ 0 \ 1 \mid 1 \ 1 \ 0 \ 1$

9b-)  $-(2.75) \} (10.11)$   

$$\begin{array}{r} 0.1011 \\ \times 2 \\ \hline 2.022 \\ \times 2 \\ \hline 4.044 \\ \times 2 \\ \hline 8.088 \end{array}$$

$\ominus \mid 1 \ 1 \ 0 \mid 1 \ 0 \ 1 \ 1$

10a-)  $10100 \} \text{excess 4} \} 20 - \frac{2^5}{2} = 4$   
 $2^4 + 2^5 = 20$

10b-)  $0101 \} \text{excess 6} \} 5 - \frac{2^4}{2} = -3$   
 $4 + 6 = 10$

10c-)  $1001 \} \text{excess 8} \} 9 - \frac{2^4}{2} = 1$   
 $2^3 + 1 = 9$