

Laboratorio 1

1	Carácter	Decimal	Binario
P		80	10010000
a		97	11000001
b		98	11000010
r		108	1101100
o		111	1101111
A		32	1000000
n		65	10000001
d		170	1101110
r		100	1100100
e		114	1110010
s		101	1100101
N		115	1110011
i		32	100000
n		78	1001110
o		103	1101001
B		110	1101110
a		111	1101111
r		32	100000
c		66	1000010
r		97	1100001
e		114	1110010
t		114	1110010
o		101	1100101
		116	1110100
		111	1101111

2

843	12	Decimal	Binario
04	421	843	1101001011
03	001	12	
1	1	12	
0	0	105	
0	0	12	
0	0	52	
1			

(52 | 2
 42 | 26 12
 0 | 06 1 | 13 12
 0 | 06 1 | 13 0 | 3 12
 0 | 06 1 | 13 0 | 3 1 | 1)

3

a) $\begin{array}{r} 2_{13} \\ 1 \\ 2_{12} \\ 1 \\ 2_{11} \\ 1 \\ 0 \\ 2_{10} \\ 0 \\ 2_9 \\ 0 \\ 2_8 \\ 1 \\ 2_7 \\ 0 \\ 2_6 \\ 1 \\ 0 \\ 2_5 \\ 1 \\ 0 \\ 2_4 \\ 1 \\ 1 \\ 2_3 \\ 1 \\ 1 \\ 2_2 \\ 1 \\ 1 \\ 2_1 \\ 1 \\ 2_0 \\ 0 \end{array}$

$$8192 + 4096 + 2048 + 0 + 0 + 256 + 0 + 64 + 0 + 16 + 8 + 4 + 2 + 0$$

$$\text{Decimal} = 14686$$

$$\begin{array}{r} 14686 \\ \times 16 \\ \hline 8917 \\ 126 \\ \hline 14 \end{array} \quad \begin{array}{r} 144 \\ \times 16 \\ \hline 13 \end{array}$$

Hexadecimal: 395E

b) $\begin{array}{r} 2_{12} \\ 1 \\ 2_{11} \\ 0 \\ 2_9 \\ 1 \\ 2_7 \\ 1 \\ 2_6 \\ 1 \\ 2_5 \\ 1 \\ 2_4 \\ 1 \\ 2_3 \\ 1 \\ 2_2 \\ 1 \\ 2_1 \\ 1 \\ 2_0 \\ 1 \end{array}$

$$4096 + 2048 + 1024 + 512 + 256 + 128 + 64 + 32 + 16 + 8 + 4 + 2 + 1$$

$$\text{Decimal} = 8191$$

$$\begin{array}{r} 8191 \\ \times 16 \\ \hline 15 \\ 31 \\ \hline 15 \end{array} \quad \begin{array}{r} 511 \\ \times 16 \\ \hline 15 \\ 31 \\ \hline 15 \end{array} \quad \begin{array}{r} 31 \\ \times 16 \\ \hline 1 \end{array}$$

Hexadecimal: 1FFF

c) $\begin{array}{r} 2_{11} \\ 1 \\ 2_0 \\ 0 \\ 2_9 \\ 0 \\ 2_8 \\ 0 \\ 2_7 \\ 0 \\ 2_6 \\ 0 \\ 2_5 \\ 0 \\ 2_4 \\ 0 \\ 2_3 \\ 0 \\ 2_2 \\ 0 \\ 2_1 \\ 1 \end{array}$

$$2048 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 1$$

$$\text{Decimal} = 2049$$

$$\begin{array}{r} 2049 \\ \times 16 \\ \hline 128 \\ 0 \\ \hline 8 \end{array}$$

Hexadecimal: 801

d) $2_{13}, 2_2, 2_{11}, 2_0, 2_9, 2_8, 2_7, 2_6, 2_5, 2_4, 2_3, 2_2, 2_1, 2_0$

$4096 + 0 + 2048 + 0 + 512 + 0 + 128 + 64 + 32 + 16 + 0 + 0 + 0$

Decimal: 6896

$$\begin{array}{r} 6896 \\ 49 \\ 16 \end{array} \quad \begin{array}{r} 16 \\ 431 \\ 111 \\ 15 \end{array} \quad \begin{array}{r} 16 \\ 26 \\ 10 \\ 10 \end{array} \quad \begin{array}{r} 16 \\ 1 \end{array}$$

0

Hexadecimal 8 1 AF0

4

Decimal	Binario	Hexadecimal
0	0	0
1	1	1
2	10	2
3	11	3
4	100	4
5	101	5
6	110	6
7	111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	10000	F
16	100000	10
17	10001	11
18	10010	12
19	10011	13
20	10100	14
21	10101	15
22	10110	16
23	10111	17
24	11000	18
25	11001	19
26	11010	1A
27	11011	1B
28	11100	1C
29	11101	1D
30	11110	1E
31	11111	1F

5) $16^2, 16^1, 16^0$
 $19F = 15 + 444 + 256$
 $= 415$

$$\begin{array}{r} 416 \\ 96 \) \underline{26} \\ 10 \) 1 \end{array} = 1A0$$

Rta: El siguiente número Hexadecimal
a 19F es 1A0