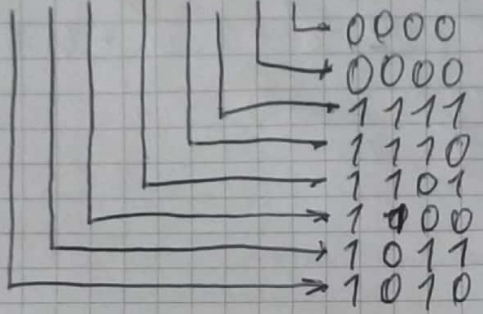
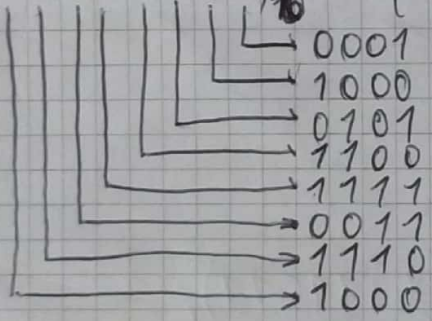
Org Comp Ejercicios ~~Práctico~~

1) a) $(ABCDEF00)_{16}$ =



$= (10101011110011011110111100000000)_2$

c) $(8E3FC581)_{16} = (10001110001111111100010110000001)_2$



2) a) $(1110011111000011)_2$ =

$= 2^{15} + 2^{14} + 2^{13} + 2^{10} + 2^9 + 2^8 + 2^7 + 2^1 + 2^0$

$= 32.768 + 16.384 + 8192 + 1024 + 512 + 256 + 128 + 2 + 1$

$= (59.267)_{10}$

$= (E783)_{16}$

c) $(10110011011011.1100001000)_2 =$

$= (0010,1100,1101,1011,1100,0010,0000)_2$

$= 2CDB,C20$

$= 2.16^3 + 12.16^2 + 13.16^1 + 11.16^0 + 12.16^{-1} + 2.16^{-2} + 0.16^{-3}$

$= 2.4096 + 12.256 + 208 + 11 + \frac{12}{16} + \frac{2}{256} + 0$

$= 8.192 + 3072 + 219 + \frac{3}{4} + \frac{1}{128}$

$= 11.483,75781$

3) a) 59 | 2 → $(59)_{10} = (00110111)_2$

59 | 2
-4 | 29 | 2
1 | -28 | 14 | 2
1 | -14 | 7 | 2
0 | -6 | 3 | 2
1 | -2 | 1
1

b) 59 | 2 → $(59)_{10} = (00111011)_2$

59 | 2
-58 | 29 | 2
1 | -28 | 14 | 2
1 | -14 | 7 | 2
0 | -6 | 3 | 2
1 | -2 | 1
1

c) $(255,46)_{10}$ a =

$255 \mid 2$ → $(255)_{10} = (11111111)_2$

$255 \mid 2$ — 24 — 15 — 14 — 1

$127 \mid 2$ — 07 — 6 — 1

$63 \mid 2$ — 03 — 2 — 1

$31 \mid 2$ — 30 — 1

$15 \mid 2$ — 14 — 1

$7 \mid 2$ — 6 — 1

$3 \mid 2$ — 2 — 1

1

Como ya no quedan mas bits en el registro no vale la pena calcular la parte ~~de~~ la ~~a~~ derecha de la coma.

2) Primero pasemos el número a binario.

$76 \mid 2$ — 6 — 16 — 16 — 0 → 38

$38 \mid 2$ — 18 — 18 — 0 → 19

$19 \mid 2$ — 18 — 1 → 9

$9 \mid 2$ — 8 — 1 → 4

$4 \mid 2$ — 4 — 0 → 2

$2 \mid 2$ — 2 — 0 → 1

$\therefore (76)_{10} = (\cancel{00101100})_2$ $(01001100)_2$

Ahora sacamos su complemento 2

$01001100 \rightarrow 10110011 \rightarrow 10110011 + 01 = 10110100$

El contenido del registro del microprocesador serie 10110100