PROBLEMES AC

3.B)

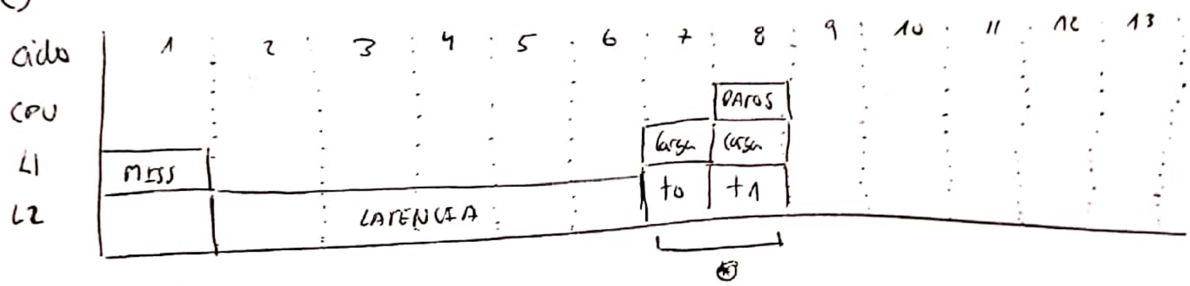
a) $t_c = \frac{1}{F} = 1/_{2\cdot10^9} = \boxed{5\cdot10^{-10}\,s}$ $\quad t_{exe} = \frac{ciclos}{F} = ciclos = 2\cdot2\cdot10^9 = \boxed{4\cdot10^9\ ciclos}$

b) ciclos penalización = 5 (latencia) + 4 (bus) + 1 (Lec L1 + transf datos) = $\boxed{10\ ciclos}$

$t_{exe} = t_c \cdot ciclos = t_c$ (ciclos ideal + mr · tasa mis · ciclos penalización) =

$= 5\cdot10^{-10}\,(4\cdot10^9 + 10^9\cdot0{,}2\cdot10) = \boxed{3s}$

c)

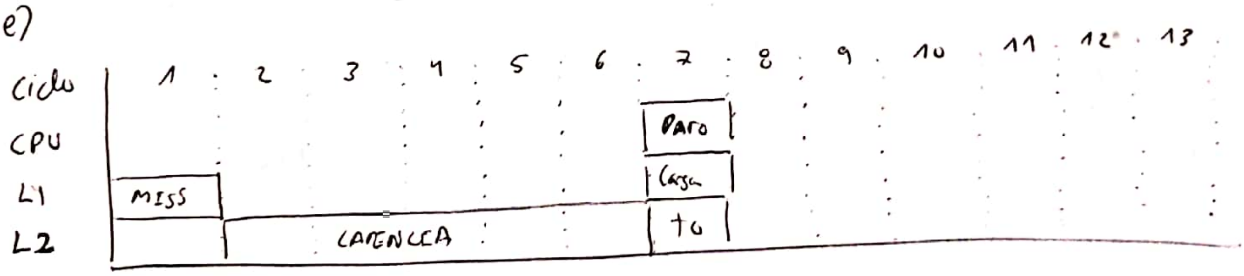


⊛ 2 ciclos ⇒ bus 8B y queremos el 12 B del bloque.

d) Ciclos de penalización = $5 + 0{,}7\cdot1 + 0{,}1\cdot2 + 0{,}1\cdot3 + 0{,}1\cdot4 = \boxed{6.6\ ciclos}$

$t_{exe} = t_c \times ciclos = 5\cdot10^{-10}\,(4\cdot10^9 + 10^9\cdot0{,}2\cdot6{,}6) = \boxed{2{,}66\ s}$

e)



f) Ciclos penalización = 5 (latencia) + 1 (lect+transf. carga) = $\boxed{6\ ciclos}$

$t_{exe} = 5\cdot10^{-10}\,(4\cdot10^9 + 10^9\cdot0{,}2\cdot6) = \boxed{2.6s}$

g) Speed up (continuación anticipada) $= \frac{3}{2.66} = 1'1278 =$ ([illegible]) (12,78%)

Speed up (transferencia en desorden) $= \frac{3}{2.6} = 1'1538 =$ ([illegible]) (15,38%)

Escaneado con CamScanner

7.14) @ 16 bits, 2 [illegible], LRU, 16 bloq, 64 B/bloque, CP + WA

12 bloques / 2 bloq/conj = 4 conj = 2^2 [illegible] MC 64B = 2^6 = 1 Byte

TAG	conj	Byte
8	2	6

a)

Tipo	@ Lec	BM	TAG	conj MC	H/M	Bloque reemplazado	B/W MP	B/L MP
L	B12B	264	BA	0	M	180 (AC)	0	64
L	B14F	265	BA	1	M	281 (AC)	0	64
L	B1AF	266	BA	2	M	282 (AC)	64	64
L	B1C4	267	BA	3	M	283 (AC)	64	64
W	4387	10E	43	2	H	—	0	0
L	1108	044	11	0	M	10C (43)	64	64
W	1199	046	11	2	M	10E (43)	0	64
L	11AA	046	11	2	H	—	0	0

b)

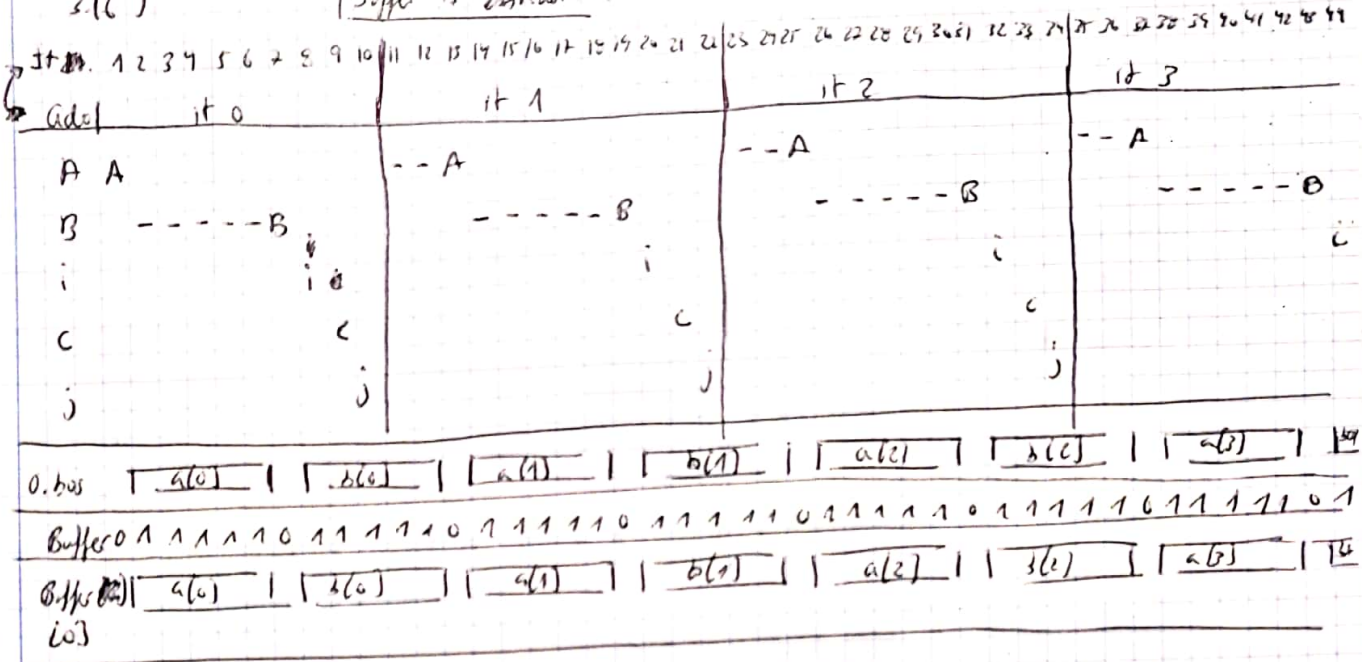
Tipo	@	BM	TAG	Conj MC	H/M	B/W MP	B/L MP	B en Buffer	B H H/M?	Bloq prefetch Buff
L	B12B	264	BA	0	M	0	128	—	M	265
L	B145	265	BA	1	M	0	64	265	H	266
L	B1AF	266	BA	2	M	64	64	266	H	267
L	B1C4	267	BA	3	M	64	64	267	H	268
W	4387	10E	43	2	H	0	0	268	-	—
L	1108	044	11	0	M	64	128	268	M	045
W	1199	046	11	2	M	0	128	045	M	047
L	11AA	046	11	2	H	0	0	047	—	·

Escaneado con CamScanner

Problemas AC:

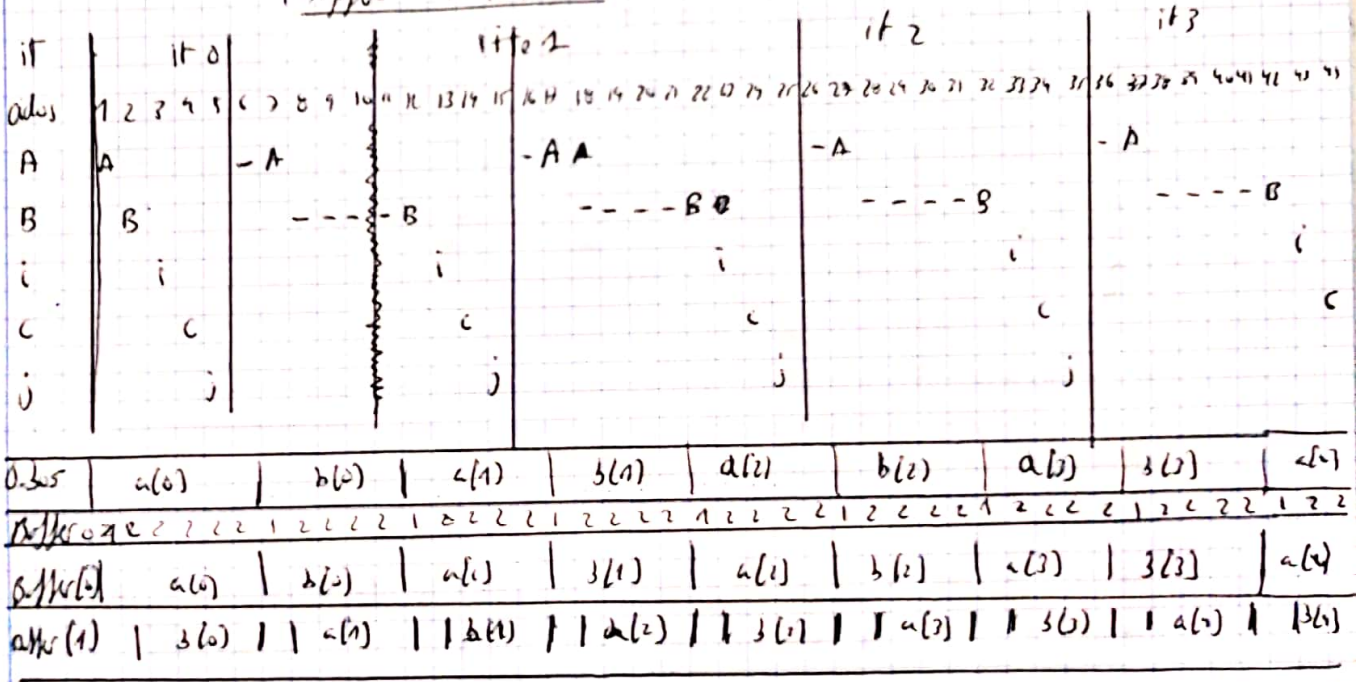
3.1 c)

Buffer 1 entrada



CPI = 2'4 c/i Ancho Banda = 0'66 B/c

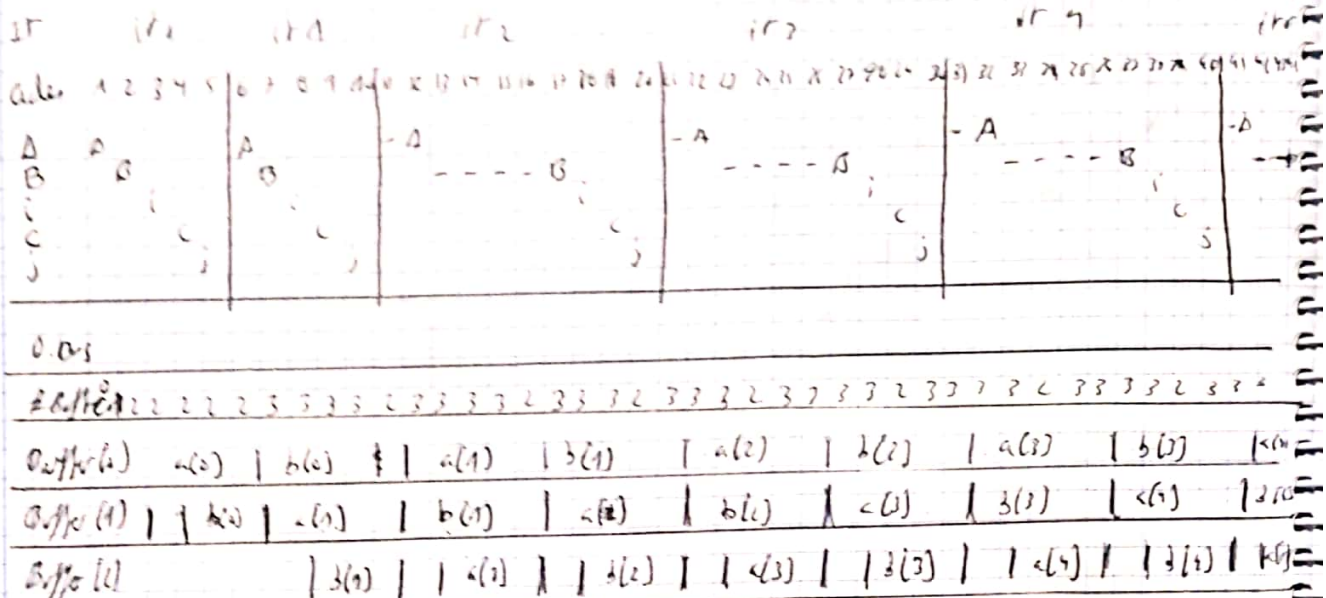
Buffers 2 entradas



CPI = 2 c/i Ancho Banda = 0'8 B/c

Escaneado con CamScanner

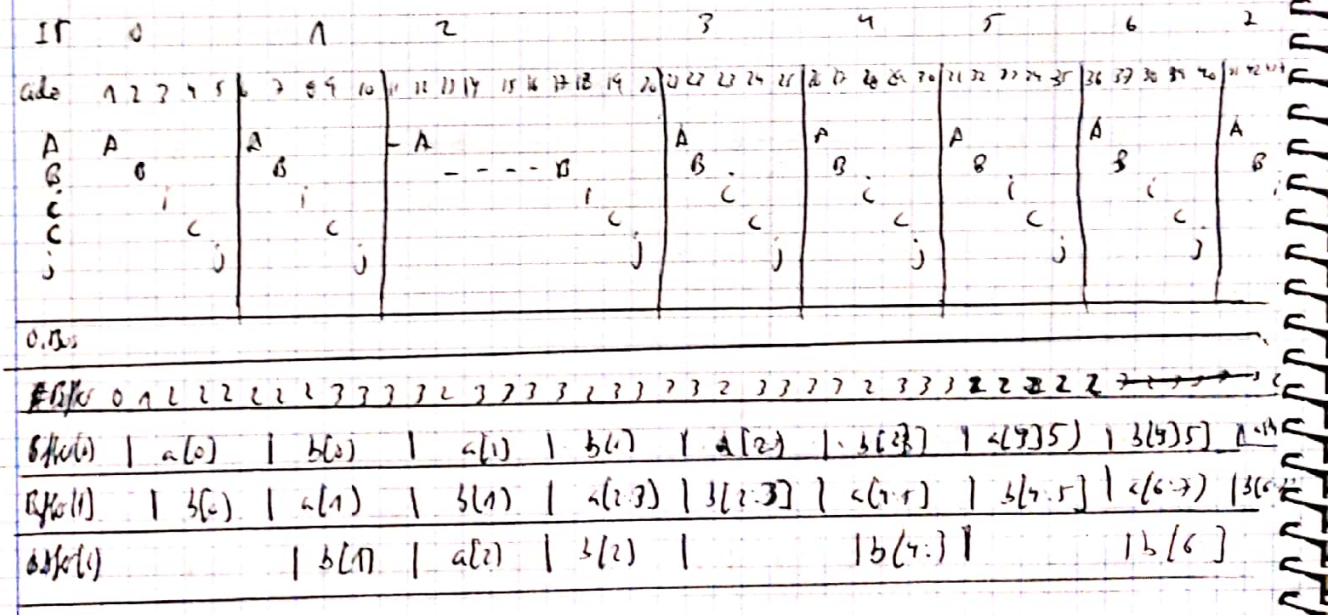
Buffer 3 entrada



CPT = 2 % Ancho Banda = 0'8 B/c

d) Igualdad en el uso ancho de botella.

Buffer 3 entrada



CPT = 1 ciclo/i Ancho banda = 1'6 B/c

Escaneado con CamScanner