

# AC-PROBLEMES-2.pdf



**Arnau\_FIB**



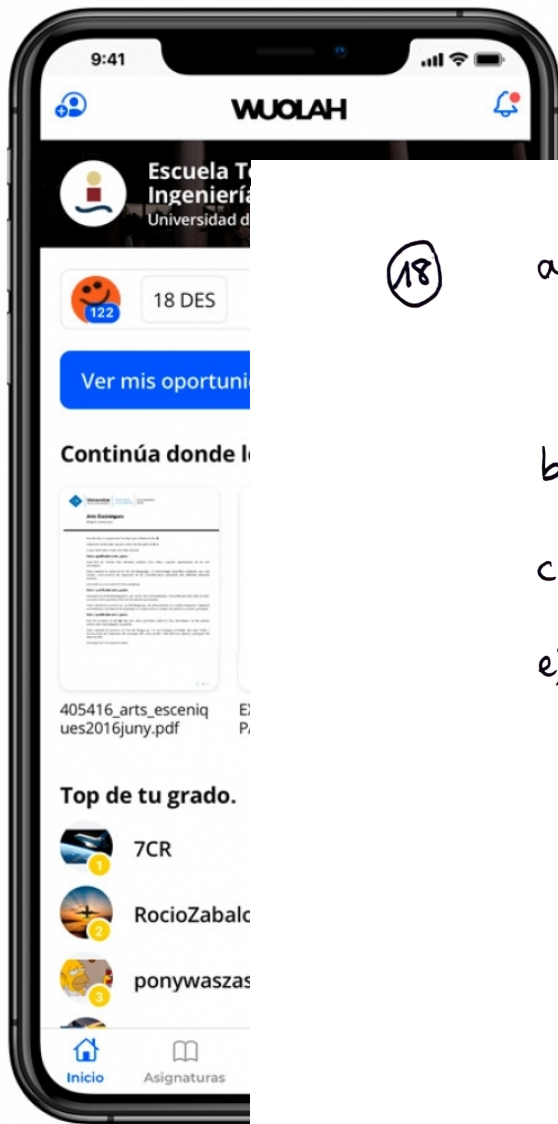
**Arquitectura de Computadores**



**2º Grado en Ingeniería Informática**



**Facultad de Informática de Barcelona (FIB)  
Universidad Politécnica de Catalunya**



**Descarga la APP de Wuolah.**  
Ya disponible para el móvil y la tablet.



18

a)  $m2 [N] [M]$

$m1 [M] [N]$

$m2 [20i + 4j] \rightarrow M = 5$

$m1 [28i + 4j] \rightarrow N = 7$

b) 13      d) 9

c) 13

e) 1 ciclo  $\rightarrow 0'8 \text{ ms}$  (NO mem)  
 $\rightarrow 0'5 \text{ ms}$  (mem)

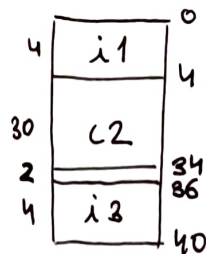
$$(13 - 9) \text{ ms} \cdot \frac{1 \text{ ciclo}}{0'8 \text{ ms}} + 9 \text{ ms} \cdot \frac{1 \text{ ciclo}}{0'5 \text{ ms}} = 23 \text{ ciclos}$$

$$(13 - 9) \text{ ms} \cdot \frac{1}{0'9} + 9 \cdot \frac{1}{0'6} = 19'44 \text{ ciclos}$$

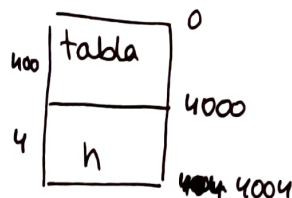
$$\text{Speedup} = \frac{23}{19'44} = 1'18 \rightarrow \boxed{18\%}$$

(19)

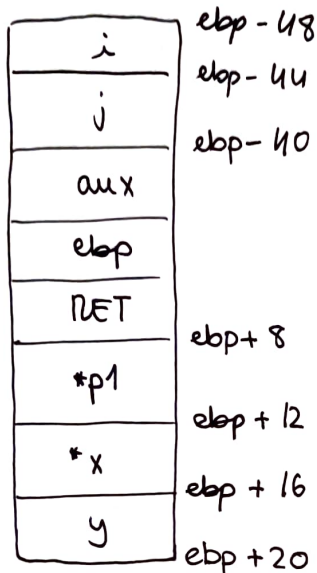
a) SX:



S2:



b) Examen:



c) `movl 12(ebp), %ecx`  
`movl (%ecx), %eax`  
`addl -4(ebp), %eax`  
`ret`

d) `push 16(ebp)`  
`movl 8(ebp), %eax`  
`imul $40, -44(ebp), %ecx`  
`leal (eax, ecx), %ecx`  
`pushl %ecx`  
`call F`  
`addl $8, %esp`  
`movl %eax, -40(ebp)`

e) `movl -44(%ebp), %eax`  
`movl 16(%ebp), %ecx`  
`imul %eax, %ecx`  
`movl %ecx, -48(ebp)`

f) `movb -13(ebp), %al`  
`movl -48(ebp), %ecx`  
`movb %al, -36(ebp, ecx)`

g) `movl $0, -48(%ebp)`  
`movl 8(ebp), %eax # &p1`  
`movl -48(%ebp), %esi`

`for: cmpl 16(ebp), %esi`

`jge ffor`

`cmpl %esi, 4000(eax)`

`jle ffor`

`imul $40, %esi, %ecx # i*40`

`movl 36(eax, ecx), %edx`

`addl %esi, %edx`

`movl %edx, (eax, ecx)`

`addl $5, esi`

`jmp for`

`ffor: movl %esi, -48(%ebp)`

h) `movl 16(ebp), %eax`  
`cmpl -40(ebp), %eax`  
`je else`  
`movl -48(ebp), %ecx`  
`movl %ecx, -4(ebp)`  
`jmp fin`

`else`

`else: movl -44(ebp), %ecx`  
`movl %ecx, -4(ebp)`

`fin:`

`movl $0, -48(ebp)`

i) `movl $0, %esi`

`wh: cmpl -36(ebp, esi), $'.'`

`je endwh`

`movl $' #', -36(ebp, esi)`

`incl %esi`

`jmp wh`

`endwh: movl %esi, -48(ebp)`