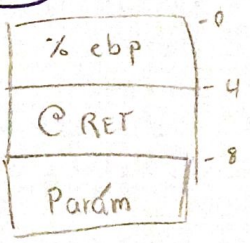
Entrega 4 AC

2.18

a)



eax = i
ecx = j · 4
edx = 8 · i

sall K, op1 → op1 ← op1 << K

4 · j

N = 7 → edx = 8i − i = 7i

M = 5 → eax = 4i + i = 5i

b) estàtiques: aquelles que conformen el codi font

dinàmiques: s'executen en una determ. execució amb unes par. determinats.

estàtiques = 5

c) dinàmiques = 8

d) 9

e) 9 a memòria
4 no accedeix

$9 \cdot 0'8 + 4 \cdot 0'5 = 9'2$ accessos → NO

$9_{inst} \cdot \frac{1c}{0'5 ins} + 4_{ins} \cdot \frac{1c}{0'9 i} =$ **23 accessos**

f) 0'8 ins/1c → 0'9 ins/c
0'5 ins/1c → 0'6 ins/c

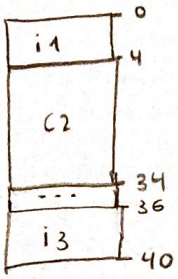
$9_i \cdot \frac{1c}{0'6_i} + 4 \cdot \frac{1c}{0'9 in} =$ **19'4 accessos**

ganancia = $\frac{c.ant}{c.mej} = \frac{23}{19'4} = 1'182$ → **18'2 % de mejora**

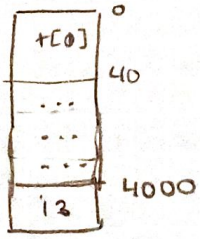
2.19

a)

S1:



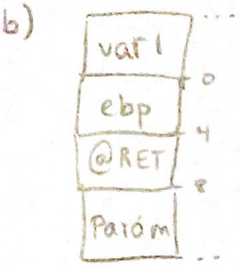
S2:



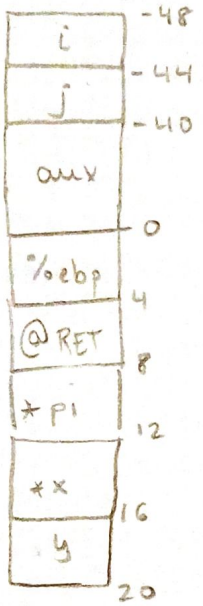
100 × 40 = 4000

Notebloc

b)



var l = 2·4 + 40 = 48



c)

aux.i3 = @aux + 36

```
movl  12(%ebp), %eax
movl  %eax , %eax    # x
addl  -4(%ebp), %eax
```

d)

```
movl  8(%ebp), %eax   # p1
movl  -44(%ebp), %ebx
mull  $40, %ebx
addl  %ebx , %eax     # p1 lista
movl  16(%ebp), %ecx
push  %ecx
push  %eax
call  F
movl  %eax , -40(%ebp)
```

e)

```
movl  -44(%ebp), %eax   # eax = j
movl  16(%ebp) , %ecx   # ecx = y
mull  %eax , %ecx
movl  %ecx , -48(%ebp)
```

f)

```
leal  -40(%ebp), %eax    # @aux
addl  $27 , %eax         # aux.c2[23]  23+4 = 27
movl  -48(%ebp) ,%ecx    # ebx = i
movl  %ebx ,4(%eax, %ecx)  # @aux + i + 4
```

g)

```
    movl  $0, %eax      # eax = 0 = i
    movl  8(%ebp), %ecx   # p1
for: cmpl  16(%ebp), %eax   # y , j
    jge  fifor
    cmpl  4000(%ecx), %eax
    jgz fifor
    imull  $40, %eax, %edx   # 40i
    addl  %ecx, %edx         # @p1 + 40i  -> (*p1).tabla[i]
    movl  %edx, %ecx
    addl  $36, %ecx          # ecx = (*p1).tabla[i].i3
    addl  %eax, %ecx
    movl  %ecx, %edx
    jmp  for
fifor:
```

p1.n = 100·40 = 4000

Notebloc

h)
```
movl   -40(%ebp), %eax     # eax = @aux
cmpl   16(%ebp), %eax      # comp(y, aux.a1)
je     else
addl   $36, %eax           #
movl   -48(%ebp), %eax
jmp    fi
else: addl   $36, %eax
      movl   -44(%ebp), %eax
fi:
```

i)
```
      movl   $0, %eax          # eax = i = 0
      leal   -40(%ebp), %ecx
while: cmpb  $'.', 4(%ecx, %eax)
       je    fiwhile
       movb  $'#', 4(%ecx, %eax)
       incl  %eax               # i++
       jmp   while
fiwhile:
```

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