EC Examen de Problemes

Exercici 1 (Ex. Parcial 2013-2014 Q1)

```
func1:
  addiu $sp,$sp,-36
  sw $ra,32($sp)
  sw $s0,28($sp)
  sw $s1,24($sp)
  move $s0,$a0
  move $s1,$a1
  lh $a0,0($s1)
  addu $a1,$sp,$s0
  addiu $a2,$sp,8
  jal func2
  ble $s0,$zero,fiif
  addiu $v0,$v0,1
fiif: lh $t0,0($s1)
  addu $v0,$v0,$t0
  lw $ra,32($sp)
  lw $s0,28($sp)
  lw $s1,24($sp)
  jr $ra
```

Exercici 2

a)
```
#B[i][3] = 0;
li   $t4, N*4
mult $t4, $t1, $t4
mflo $t4
addu $t4, $a0, $t4
sw   $zero, 3*4($t4)
```

b)
```
#B[i][j] = 0;
li   $t4, N
mult $t4, $t1, $t4
mflo $t4
addu $t4, $t4, $t2
sll  $t4, $t4, 2
addu $t4, $a0, $t4
sw   $zero, 0($t4)
```

c)
```
#for (i=0; i<N; i++) //utilitza accés seqüencial
#    B[3][i] = 0;

  addiu $t0, $a0, (3*N+N)*4
  addiu $a0, $a0, 3*N*4
for:
  bge   $a0, $t0, fifor
  sw    $zero, 0($a0)
  addiu $a0, $a0, 4   #STRIDE
  b     for
fifor:
```

d)
```
#for (i=0; i<N; i++) //utilitza accés seqüencial
#     B[i][i] = 0;

  addiu $t0, $a0, (N*N+N)*4
```

```
for:
  bge   $a0, $t0, fifor
  sw    $zero, 0($a0)
  addiu $a0, $a0, (N+1)*4   #STRIDE
  b     for
fifor:
```

e)
```
#for (i=0; i<N; i++) //utilitza accés seqüencial
#    B[i][N-1-i] = 0;

  addiu $t0, $a0, (N*N-1)*4
  addiu $a0, $a0, (N-1)*4
for:
  bge   $a0, $t0, fifor
  sw    $zero, 0($a0)
  addiu $a0, $a0, (N-1)*4   #STRIDE
  b     for
fifor:
```

Exercici 3 (Ex. Final 2011-2012 Q2)

```
 main:
     li    $t0, m+19*4
     li    $t1, v+19*4
     li    $t2, v
 for:
     lw    $t3, 0($t0)
     sw    $t3, 0($t1)
     addiu    $t0, $t0, 19*4
     addiu    $t1, $t1, -4
     bge    $t1, $t2, for
     jr    $ra
```