Static array

Declaration and initialization in .data

T: .word 0,1,0,1 # Allocate 4 integers

Declaration in .data

T: .space 16 #Allocate 16 bytes

Access in .text

.text

1i \$t0, 0

sw \$t1, T(\$t0) # store the first integer

addi \$t0, \$t0, 4

sw \$t1, T(\$t0) # store the second integer

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Dynamic array

Declaration in .text

1i \$v0, 9

li \$a0, 16 # \$a0 must contain the number of bytes to be allocated

Syscall # \$v0 contains the address of the first byte allocated

Static array

T(\$t0): the address T added to the address in \$t0

Dynamic array

T is replaced by the address 0

0(\$t0) = (\$t0) : address in \$t0

Access in .text

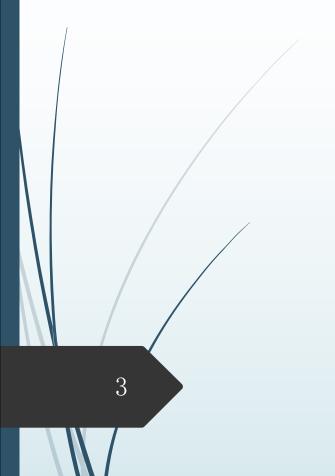
sw \$t1, (\$v0) # store the first integer

addi \$v0, \$v0, 4

sw \$t1, (\$v0) # store the second integer



Temporary registers



Register Name	Usage				
\$t0 - \$t9	Temporary registers				
\$s0 - \$s7	Temporary registers				

Exercise

Write a program that asks user to fill an array A with N (>0) digits. We assume that the user will enter single-digit natural numbers only {0,1,2,3,4,5,6,7,8,9}. The program should then put in an array B of size 10 the number of occurrences of each digit in the array A. Print the array B.

Example:

N=6

Α

7 2 9 2 1 0

В

0									
1	1	2	0	0	0	0	1	0	1

Consider that:

- The address of the Array A is stored in \$s0
- \$t1 contains N
- A is filled
- B is filled with Os

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