String
Static declaration

1. Declaration and initialization

Syntax:

.data

StringName: .asciiz « Text »

A string is terminated by the null character '\0'. The null charcater has the position 0 in the ASCII table.

How to manipulate a string in MIPS?

Load a byte: lb $t0, T # Set the lower 8 bits of $t0 to the byte loaded. The remaining bits are set to 0.

Store a byte: sb $t0, T # Store the lower 8 bits of $t0 in T.

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Exercise

Write a program to count the number of charcters in a string declared and initialized in the data part.

Hint: beq $t0, '\0', end

String
Static declaration

2. Declaration

Syntax:

.data

StringName: .space NumberOfBytes

Two methods to read a string in .text.

Method 1

$v0 ← 8

$a0 ← @ String

$a1← Number of characters to read
syscall

Method 2

Use a loop including:

$v0 ← 12 # Read a character

Syscall # $v0 contains the entered character

Print a string

Two methods to print a string.

Method 1

$v0 ← 4

$a0 ← @ String

syscall

Method 2

Use a loop including:

$v0 ← 11 # print a character

$a0 ← character

Syscall #

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Exercise

Write a program that asks user to enter his/her first name (using v0=12) and last name (using v0=8), then displays the first name (using v0=11), a space (using v0=4) and the last name (using v0=4).

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