

Course: CS 221 "Assembly Language Programming"
Semester 452 second term 2023-2024
Instructor: Mohamed Ben Othman and Hedia ZARDI

Lab Quiz 1
Duration: 30 min
Day: Monday 22/04/2024

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Student Name:

Serial Number:

Quiz-1: String manipulation

String manipulation: **write a program to count the number of consonants in a declared string**

- 1- declare a **string** (containing only letters and/or spaces) and a counter **consonantsNbr** initialized to 0.
- 2- calculate the number of consonants: letters different than: 'a', 'e', 'i', 'o', 'u', ' ' in the string and prints:

The number of consonants in the string is: " consonantsNbr value" 3- use base addressing mode.

- 4- test your program with: different strings.
- 5- show the instructor.

```
.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword
INCLUDE Irvine32.inc
.DATA
string1 byte 'this is an example',0ah,0dh,0
string2 byte 'the number of the constant in the string: ',0

consonantsNbr byte 0
```

```
.CODE
main PROC
mov esi,offset string1
mov ecx, sizeof string1 - 3 ;
L1:
mov al,[esi]
cmp al,97
jl next
cmp al,122
jg next
```

```
cmp al,'a'
je next
cmp al,'e'
je next
cmp al,'i'
je next
cmp al,'o'
je next
cmp al,'u'
je next
cmp al,' '
je next
```

```
consonant:
add consonantsNbr,1
```

```
next:
add esi,1
loop L1
```

```
mov edx,offset string2
call writestring
```

```
movzx eax,consonantsNbr
call writedec
```

```
exit
```

```
main ENDP
END main
```

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```
.386
.model flat,stdcall
.stack 4096
ExitProcess proto,dwExitCode:dword
INCLUDE Irvine32.inc
.DATA
string1 byte 'this is an example',0ah,0dh,0
string2 byte 'the number of the constant in the string: ',0

consonantsNbr byte 0

.CODE
main PROC
mov esi,0
mov ecx, sizeof string1 - 3 ;
L1:
mov al,string1[esi]
cmp al,97
jl next
cmp al,122
jg next

cmp al,'a'
je next
cmp al,'e'
je next
cmp al,'i'
je next
cmp al,'o'
je next
cmp al,'u'
je next
cmp al,' '
je next

consonant:
add consonantsNbr,1

next:
add esi,1
loop L1

mov edx,offset string2
call writestring

movzx eax,consonantsNbr
call writedec
```

```
exit  
main ENDP
```

```
END main
```