

# CS 301 Lab 9

CountVowelsTwo.s

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## Source code

```
VOWEL_OR_CONSONANT PROC

    LDRB    R1, [R0], #1    ; Load the character from string1

    CMP R1, #0
    BEQ count_done ; Check if value is zero (null terminated), exit

    ; Check if the character is a vowel
    CMP    R1, #'A'        ; Compare with 'A'
    BEQ    is_vowel        ; If equal to 'A', it's a vowel
    CMP    R1, #'E'        ; Compare with 'E'
    BEQ    is_vowel        ; If equal to 'E', it's a vowel
    CMP    R1, #'I'        ; Compare with 'I'
    BEQ    is_vowel        ; If equal to 'I', it's a vowel
    CMP    R1, #'O'        ; Compare with 'O'
    BEQ    is_vowel        ; If equal to 'O', it's a vowel
    CMP    R1, #'U'        ; Compare with 'U'
    BEQ    is_vowel        ; If equal to 'U', it's a vowel

    ; Check lowercase vowels
    CMP    R1, #'a'        ; Compare with 'a'
    BEQ    is_vowel        ; If equal to 'a', it's a vowel
    CMP    R1, #'e'        ; Compare with 'e'
    BEQ    is_vowel        ; If equal to 'e', it's a vowel
    CMP    R1, #'i'        ; Compare with 'i'
    BEQ    is_vowel        ; If equal to 'i', it's a vowel
    CMP    R1, #'o'        ; Compare with 'o'
    BEQ    is_vowel        ; If equal to 'o', it's a vowel
    CMP    R1, #'u'        ; Compare with 'u'
    BEQ    is_vowel        ; If equal to 'u', it's a vowel

    ; If it's not a vowel, it's a consonant
    B      not_vowel

is_vowel
    ADD    R2, #1          ; Increment vowel counter
    B      increment_char ; Move to the next character

not_vowel
    ADD    R3, #1          ; Increment consonant counter

increment_char
    B      VOWEL_OR_CONSONANT ; Continue processing next character

count_done
    ENDP
```

Successful build

