

Mar 26, 23 19:35

tolwr.s

Page 1/1

```

/**
 * tolwr.s
 * PARAMETERS: X0 (INPUT STRING OF SIZE N)
 * OUTPUT      : X0 (STRING, CONVERTED)
 * The purpose of this function is to convert all uppercase letters
 * to lowercase.
 * ALL REGISTERS PRESERVED EXCEPT X0
 */

.text
.global tolwr
tolwr:
    stp x19,x20, [sp, -16]! // pushing x19 and x20 to stack pointer
    mov x19, #-1           // setting increment
    b    toLwrLoop         // branch to 'toLwrLoop'
toLwrConvert:
    add w20, w20, #32       // converts the char from uppercase to lowercase
    strb w20, [x0, x19]     // storing byte in w0 string
toLwrLoop:
    add x19, x19, #1        // x19++
    ldrb w20, [x0, x19]     // load byte from str and post increment
    cmp w20, #0             // compare loaded byte and null
    b.eq toLwrEnd           // if null, goto 'toLwrEnd'
    cmp w20, #'A'           // if char is less than 'Z'...
    b.lt toLwrLoop          // then return to toLwrLoop
    cmp w20, #'Z'           // else, if w20 is less than 'Z'
    b.le toLwrConvert       // you're lowercase, so go to the convert label
    b    toLwrLoop          // go back to lwr :)
toLwrEnd:
    ldp x19, x20, [sp], 16 // popping x19 and x20 from stack
    ret lr                 // return to caller

```