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1. Pseudocode
    a. Prompt user to enter string
    b. Read input
    c. Duplicate input
    d. Determine length by moving counter down length of string
    e. start at beginning and end of string and compare characters
        i. if the same, move on and check next set
        ii. if different, it is not a palindrome
    f. repeat until either string is complete or string is not palindrome
    g. print result
    h. end program

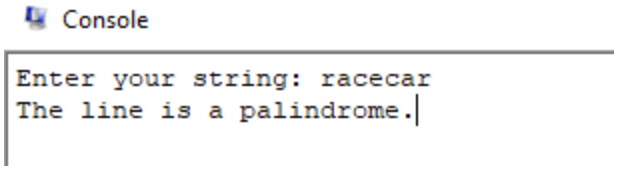
2. Assembly Code

```
.data
   myStr:      .space 32
   in:         .asciiz "Enter your string: "
   pali:       .asciiz "The line is a palindrome."
   notPali:    .asciiz "The line is not a palindrome."

.text
.globl main

main:
   la $a0, in
   li $v0, 4
   syscall

   li      $v0, 8
   la      $a0, myStr
   li      $a1, 64
   syscall

   la $t0, 10
   la $s0, myStr
   la $s1, myStr

   newLine:
       addi $s1, $s1, 1
       lb   $t1, 0($s1)
       beq $t1, $t0, last
       j newLine

   last:
       addi $s1, $s1, -1

   compare:
       lb $s2, ($s1)
       lb $s3, ($s0)
       beq $s3, $t0, paliPrint
       bne $s2, $s3, notPlaiPrint
       addi $s0, $s0, 1
       addi $s1, $s1, -1
       j compare
```

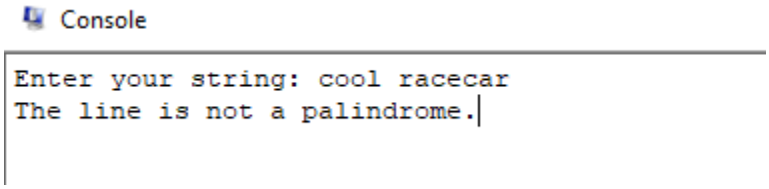
```
  compare:
      lb $s2, ($s1)
      lb $s3, ($s0)
      beq $s3, $t0, paliPrint
      bne $s2, $s3, notPlaiPrint
      addi $s0, $s0, 1
      addi $s1, $s1, -1
      j compare

  paliPrint:
      li $v0, 4
      la $a0, pali
      syscall
      li $v0, 10
      syscall

  notPlaiPrint:
      li $v0, 4
      la $a0, notPali
      syscall
      li $v0, 10
      syscall
```

3. Output

a.


Console
Enter your string: racecar
The line is a palindrome.

b.


Console
Enter your string: cool racecar
The line is not a palindrome.