#Program to find the first character in string s1 which is also in string s2

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      .data

#str1:   .asciiz "Hello World"

#str2:   .asciiz "World"

#str1:   .asciiz "string"

#str2:   .asciiz "mips"

str1:   .asciiz "Hello"

str2:   .asciiz "mips"

#askInput: .asciiz "Enter first string"   # prompts user to enter first string

#askSecond: .asciiz "Enter second string"   # prompts user to enter second string

success: .asciiz "the common character is "

noCommons: .asciiz "no common characters"

      .text

main: la $a0,str1   #load address of str1 into s0

      la $a1,str2   #load address of str2 into s1

      addi $t0,$zero,0   #set temp to zero

      jal firstmatch   #jumps to firstmatch after saving $ra

      beqz $v1,nothing   #if the character is not found go to nothing

      addi $t4,$v1,0   #else, print the character

      lb $t4,($t4)

      li $v0,4

      la $a0,success

      syscall   #The common character is

      li $v0,11   #syscall to print character

      la $a0,($t4)

      syscall   #prints the character

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        li $v0,10                    #syscall to exit program
        syscall
nothing:
    li $v0,4
        la $a0,noCommons       #prints no common characters
        syscall
        li $v0, 10
        syscall
firstmatch:
        #la $a0,($s0)      #  char *s1
        #la $a1,($s1)      #  char *s2
        la $t0,($a0)       #  char*temp; temp=s2;
        addi $sp,$sp,-4   #clear the stack for 4 items
        #sw $a1,4($sp)
        sw $ra,0($sp)
        #sw $a0,20($sp)          #store $t0 in stack
        #sw $a1,16($sp)              #store $a1 in stack
        #sw $t0,12($sp)         #store temp in stack
        #sw $s0,8($sp)          #store value in $s0 into stack
        #sw $s1,4($sp)          #store value in $s1 to stack
                        #store return address in stack

 loop:  jal strchr               #jump to strchr and rewrite $ra
        #lb $t5,($v1)            #get value from strchr
        bnez $v1,next            #if (strchr(s2,temp)!=0)
    addi $t0,$t0,1               #temp++
  lb $t1,($t0)        #while(*temp!=0)
        bnez $t1,loop            #return to loop
        addi $v0,$v0,0           #else return(0)
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        lw $ra,0($sp)

        jr $ra

  next: #la $v0,($t5)              #return temp

        lw $ra,0($sp)             #pop return address for going to main

        jr $ra                    #return to main


strchr:

        addi $sp,$sp,-4 #store the first string onto the stack

        sw $a1,0($sp)

        la $a2,($a1)        #char*s = s2

        lb $t2,($a2)

        lb $t3,($t0)              #c=*temp

  again: bne $t2,$t3,increment   #go to increment if not equal

        la $v1,($a1)              #return (char*)s

        lw $a1,0($sp)            #pop string a1 from the stack

        addi $sp,$sp,4

        jr $ra

increment:

        addi $a1,$a1,1

        lb $t2,($a1)

        #lb $a3,($a1)             while (*s++)

        bnez $t2,again          #while (*s++)

        addi $v1,$v1,0          #return(0)

        lw $a1,0($sp)           #pop string a1 from the stack

        addi $sp,$sp,4

        jr $ra                    #return to loop
```