AREA question2, CODE, READWRITE

ENTRY

ADR r0, STRING2 ;Setting up String 2 to store the wanted bytes in and eventually store null in the end

LDR r1, =STRING1 ;put the string from memory location STRING 1 into r1 to read the string

LOOP LDRB r2, [r1, r4] ;loads the register 3 with a byte from the memory location at r1 pointing from register 4

CHECK1 CMP r2, #0x74 ;Subrtact r2 from 0x74 which is "t" in Hexadecimal to see if they are equal

BNE INSERT ;If they are not equal, than the value in r2 is not "t" and go to INSERT

CMP r4, #0 ;Subtract r2 - 0 to see if they are equal to each other

BEQ CHECKH ;If they are equal check H now

B CHECKH ;If they are NOT equal then branch to CHECKT to see loop through the process to clarify the first byte

CHECKT ;This will tell us if a space is preceding the first byte in the string

SUB r11, r4, #1 ;Do r4 - 1 and place it in register 11

LDRB r10, [r1, r11] ;loads the register 10 with a byte from the memory location at r1 pointing from register 11

CMP r10, #0x20 ;Subtract r10 from hexadecimal 20 to see if the byte in r10 is a space or not

BNE STORE ;If the byte in r10 is not equal to a " " then branch to STORE

B CHECKH ;otherwise this byte is equal to " " so branch to CHECKH

CHECKH ;Assuming that the first byte is valid, then continue to "h" to check the next byte

ADD r4, r4, #1 ;Increments r4.

LDRB r2, [r1, r4] ;loads the register 2 with a byte from the memory location at r1 pointing from register 4

CMP r2, #0x68 ;Compare r2 with hexadecimal 68 which is "h" by doing r2 - 0x68

BEQ CHECKE ;If the two are equal then branch to CHECKE to check the last byte in our pattern

STRB r7, [r0, r5] ;If they are not equal store the byte in r0 pointed at by r5 in register 7

ADD r5, r5, #1 ;Increase the pointer in register 5

BNE INSERT ;If it is not then it branches to INSERT

CHECKE ADD r4, r4, #1 ;Increments r4.

LDRB r2, [r1, r4] ;Loads a byte into r2 from the memory location appointed by r1 in position r4

CMP r2, #0x65 ;Subrtacts r2 by 0x65 to see if it is equal to "e"

BEQ INSERT ;Not done

STRB r7, [r0, r5] ;Otherwise store the value in memory r0 pointed at by r5 in r7

ADD r5, r5, #1 ;Increments r5

STRB r8, [r0, r5] ;Store the byte containing the value of the character "h" in the memory

ADD r5, r5, #1 ;Increments r5

B INSERT ;If it is not then it branches to INSERT

INSERT NOP ;still not done

DONE STR r2, [r0, r5] ;Stores a the byte contained in r2, "null", into r0

AREA question2, DATA, READWRITE

STRING1 DCB "and the man said they must go" ;String1

EoS DCB 0x00 ;end of string1

align

STRING2 space 0xFF ;Just allocating 255 bytes

END

