MPCA Lab
Week 6

Name : Yashaswini Ippili

SRN : PES1UG21CS732

Section : L

Sem : 4

Roll : 42

a. Write an ALP to find the length of a given string

Code :

a - Notepad

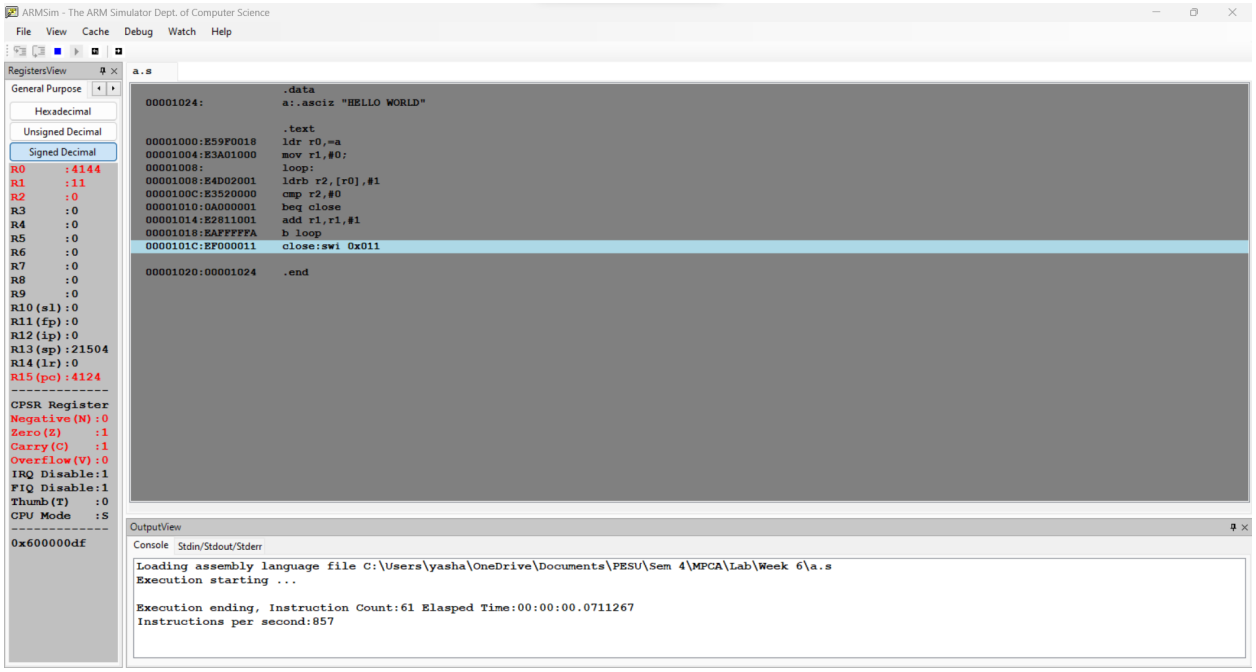
File Edit View

```
.data
a:.asciz "HELLO WORLD"

.text
ldr r0,=a
mov r1,#0;
loop:
ldrb r2,[r0],#1
cmp r2,#0
beq close
add r1,r1,#1
b loop
close:swi 0x011

.end
```

Output : Length is given by R1



b. Write an ALP to copy string from one location to another

Code :

b - Notepad

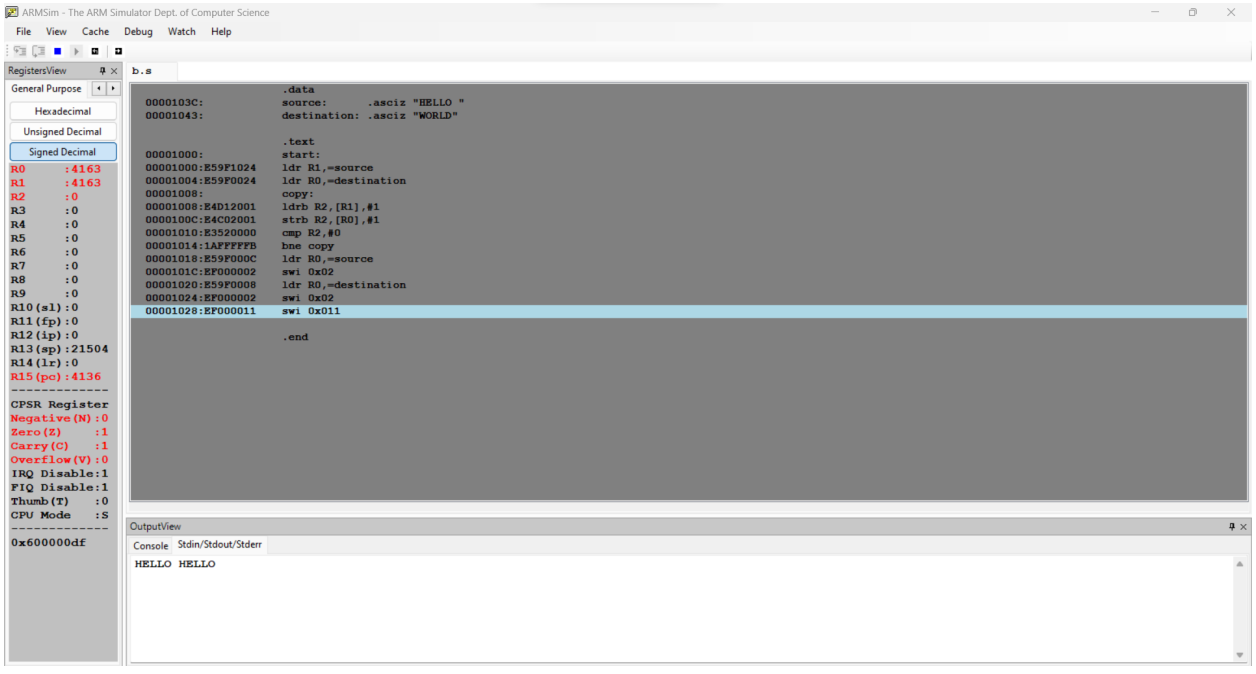
File Edit View

```
.data
source:      .asciz "HELLO "
destination: .asciz "WORLD"

.text
start:
ldr R1,=source
ldr R0,=destination
copy:
ldrb R2,[R1],#1
strb R2,[R0],#1
cmp R2,#0
bne copy
ldr R0,=source
swi 0x02
ldr R0,=destination
swi 0x02
swi 0x011

.end
```

Output :



c. Write an ALP to find whether a given character is present in a string.

Code :

c - Notepad

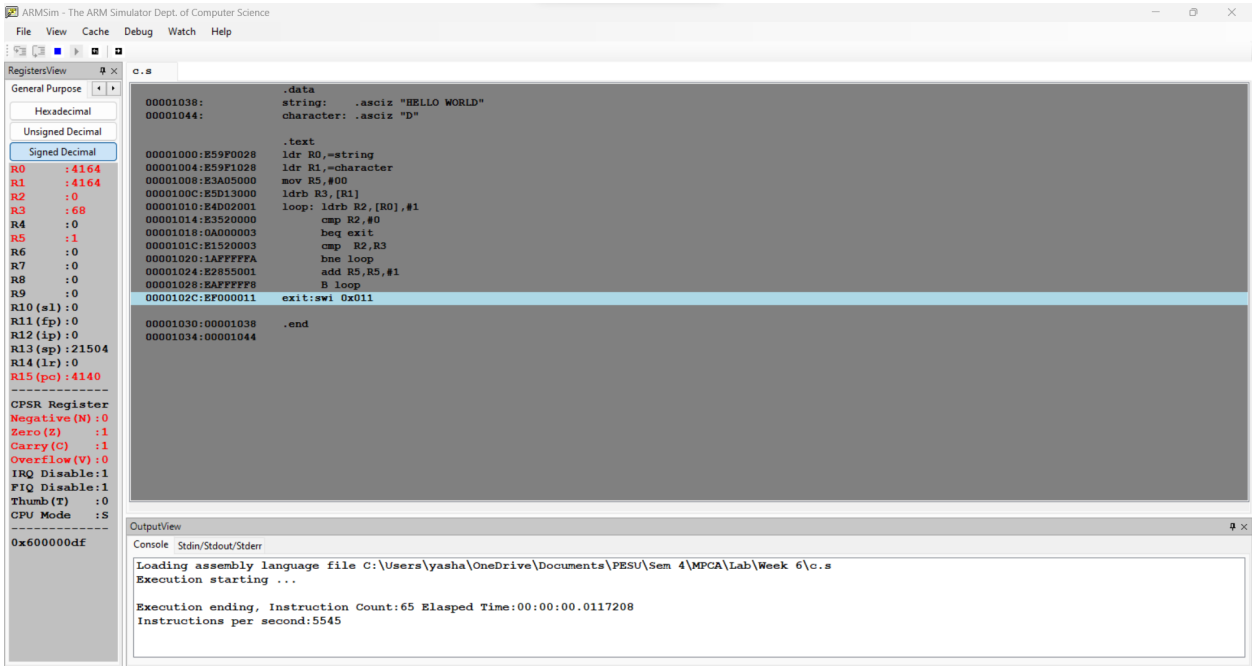
File Edit View

```
.data
string:    .asciz "HELLO WORLD"
character: .asciz "D"

.text
ldr R0,=string
ldr R1,=character
mov R5,#00
ldrb R3,[R1]
loop: ldrb R2,[R0],#1
      cmp R2,#0
      beq exit
      cmp  R2,R3
      bne loop
      add R5,R5,#1
      B loop
exit:swi 0x011

.end
```

Output : R5 tells us if the character is present or not



d. Write an ALP to find how many times a given character is present in a string

Code :

d - Notepad

File Edit View

```
.data
string:    .asciz "MISSISSIPPI"
character: .asciz "S"
.equ SWI_WriteC,0x02
.equ SWI_Exit,0x11

.text
ldr R0,=string
ldr R1,=character
mov R5,#00
ldrb R3,[R1]
loop: ldrb R2,[R0],#1
cmp R2,#0
beq exit
cmp R2,R3
bne loop
add R5,R5,#1
B loop
ldr r0,=string
swi SWI_WriteC
exit:swi SWI_Exit

.end
```

Output: R5 gives us the count of the repeated character