

Microprocessor and Computer Architecture

UE20CS252

4th Semester, Academic Year 2021-22

Date:08/03/2023

Name: Nihal T M	SRN: PES2UG21CS333	Section: F
-----------------	--------------------	------------

Week# 7
1

Program Number:

Title of the Program

Display hexadecimal digits [0-9,A-F] on the 8-segment display. Also display PES on the 8-segment display

Include in your submission

ARM Assembly Code(1)

Code:

@ up-counter

.text

.global start

begin:

mov r0,#0

mov r2,#0

```
again:  
swi 0x202  
cmp r0,#1  
beq loop2  
cmp r0,#2  
beq loop1  
b again
```

```
loop1:  
mov r5,#16  
ldr r1,=zero
```

```
back1:  
ldrb r0,[r1]  
swi 0x200  
bl delay  
add r1,r1,#1  
sub r5,r5,#1  
cmp r5,#0  
bne back1  
b again
```

```
loop2:  
mov r5,#16  
ldr r1,=F
```

```
back2:  
ldrb r0,[r1]  
swi 0x200  
bl delay  
sub r1,r1,#1
```

```
sub r5,r5,#1
cmp r5,#0
bne back2
b again
```

```
delay:
mov r4,#64000
```

```
loop3:
sub r4,r4,#1
cmp r4,#0
bge loop3
mov pc,lr
```

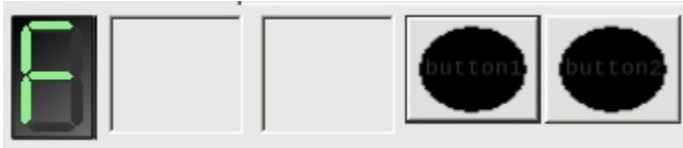
```
.data
zero:.byte 0b11101101
one:.byte 0b01100000
two:.byte 0b11001110
three:.byte 0b11101010
four:.byte 0b01100011
five:.byte 0b10101011
six:.byte 0b10101111
seven:.byte 0b11100000
eight:.byte 0b11101111
nine:.byte 0b11100011
A:.byte 0b11100111
B:.byte 0b00101111
C:.byte 0b10001101
D:.byte 0b01101110
E:.byte 0b10001111
F:.byte 0b10000111
```

Output Screen Shots (4)

(i) up-counter:



(ii) down-counter:



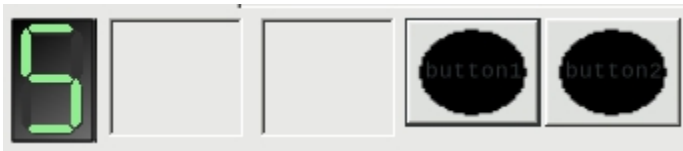
(iii) displaying P:



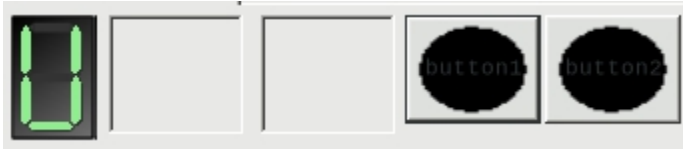
(iv) displaying E:



(v) displaying S:



(vi) displaying U:



(upcounter/down counter screenshot)-1
letters P,E,S-3

Week# 7
 2

Program Number:

Title of the Program

Move a string from RIGHT to LEFT on the LCD display panel. Display your name on the LCD Panel

Include in your submission

ARM Assembly Code(1)

```
.text
mov r0,#30
mov r1,#7
mov r7,#0
ldr r8,=num
ldr r8,[r8]
ldr r2,=str

loop:
swi 0x204
bl sum
cmp r0,#0
subne r0,r0,#1
swieq 0x11
b loop
```

```

sum:
cmp r7,r8
addne r7,r7,#1
bne sum
swi 0x206
mov r7,#0
mov pc,lr

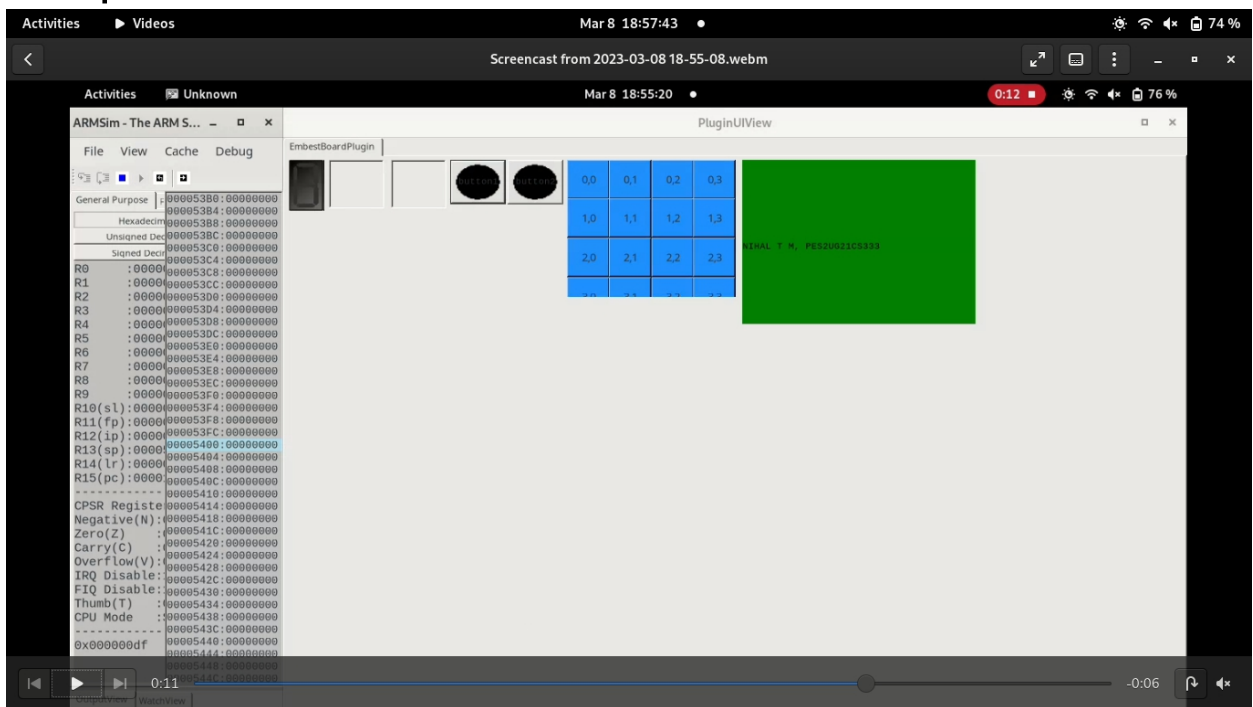
```

```

.data
str:.asciz "NIHAL T M, PES2UG21CS333"
num:.word 15000

```

Output Screen Shot (1)



Disclaimer:

The programs and output submitted is duly written, verified and executed by me.

I have not copied from any of my peers nor from the external resource such as internet.

If found plagiarized, I will abide with the disciplinary action of the University.

Signature:

Name: Nihal T M

SRN: PES2UG21CS333

Section: F

Date: 08/03/2023