

Microprocessor and Computer Architecture Laboratory

UE19CS256

4th Semester, Academic Year 2020-21

Date:5-3-21

Name: Achyut Jagini	SRN:PES2UG19CS013	Section A
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Week#____6_____

Program Number: ____1__

- 1. Write an ALP to blink LEDs. First, the right LED is switched on and the left LED is switched off. After 1 second, the right LED is switched off and the left LED is switched on and the program continue to blink both the LEDs.**

```
pg1 - Notepad
File Edit Format View Help

mov r0,#1
l:
swi 0x201

add r0,r0,#1
mov r4,#64000
a:
sub r4,r4,#1
cmp r4,#0
bne a
cmp r0,#4
bne l
.end
```

Ln 5, Col 13 100% Unix (LF) UTF-8 10:18 05-03-2021

Screenshot

ARMSim - The ARM Simulator Dept. of Computer Science

File View Cache Debug Watch Help

General Purpose Float pg1.s

Hexadecimal Unsigned Decimal

Firefox Web Browser

R0 : 4
R1 : 0
R2 : 0
R3 : 0
R4 : 0
R5 : 0
R6 : 0
R7 : 0
R8 : 0
R9 : 0
R10(sl): 0
R11(fp): 0
R12(ip): 0
R13(sp): 21504
R14(lr): 0
R15(pc): 70656

CPSR Register
Negative(N): 0
Zero(Z): 1
Carry(C): 1
Overflow(V): 0
IRQ Disable: 1
FIQ Disable: 1
Thumb(T): 0
CPU Mode : System

0x600000df

PluginUI View

EmbestBoardPlugin

0,0 0,1 0,2 0,3
1,0 1,1 1,2 1,3
2,0 2,1 2,2 2,3
3,0 3,1 3,2 3,3

AC: 01010101
B0: 01010101
B4: 01010101
B8: 01010101
BC: 01010101
C0: 01010101
C4: 01010101
C8: 01010101
CC: 01010101
D0: 01010101
D4: 01010101
D8: 01010101
DC: 01010101
E0: 01010101
E4: 01010101
E8: 01010101
EC: 01010101
F0: 01010101
F4: 01010101
F8: 01010101
FC: 01010101
00: 01010101
04: 01010101
08: 01010101
0C: 01010101
10: 01010101
14: 01010101
18: 01010101
1C: 01010101
20: 01010101
24: 01010101
28: 01010101
2C: 01010101
30: 01010101
34: 01010101
38: 01010101
3C: 01010101
40: 01010101
44: 01010101
48: 01010101
4C: 01010101
50: 01010101

OutputView WatchView

Professor & Computer A Laboratory

Let the LED to light up

configure LEDs to light up, r0=2 means (it up)

between the three LEDs a large value for example by decrementing register is equal to zero and 6 till delay register with 3 (Check if all the 5 till r0 is less than or equal to 3)

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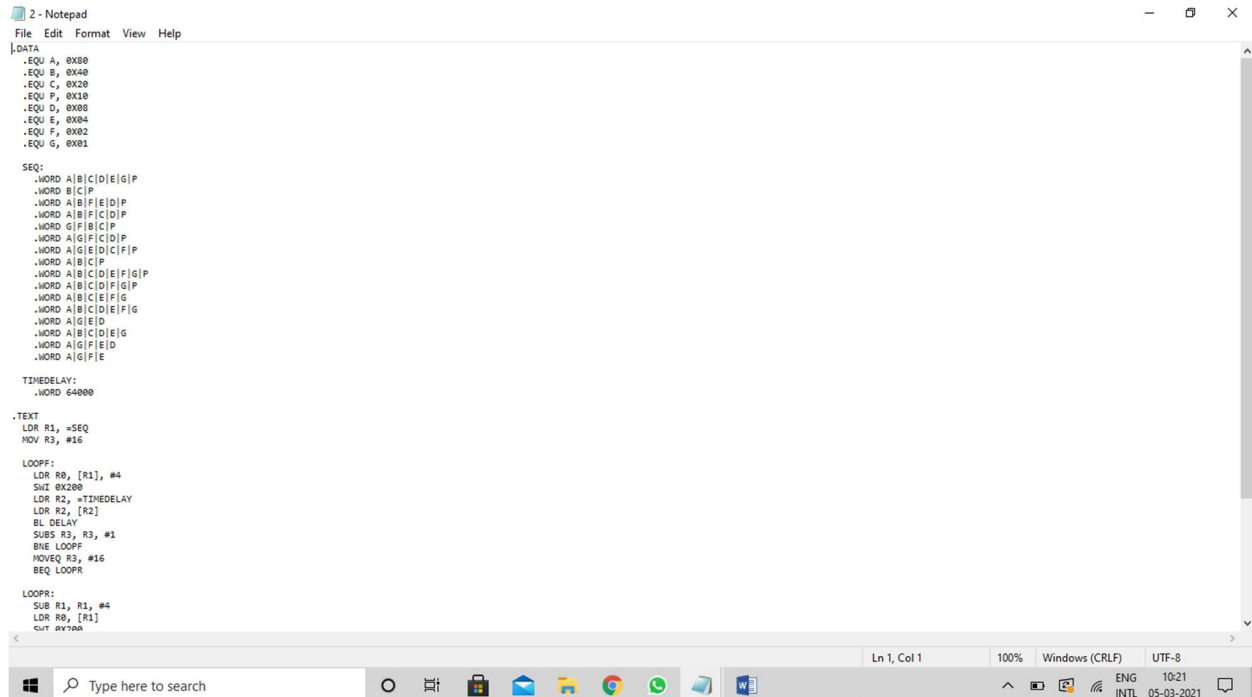
4th Semester, Academic Year 2020-21

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Week# ____6____ Program Number: ____2____

**Write an ALP to display 0-9, A-F (up and down count)
on an 8 segment display**



```
2 - Notepad
File Edit Format View Help
;DATA
.EQU A, 0x30
.EQU B, 0x40
.EQU C, 0x20
.EQU P, 0x10
.EQU D, 0x08
.EQU E, 0x04
.EQU F, 0x02
.EQU G, 0x01

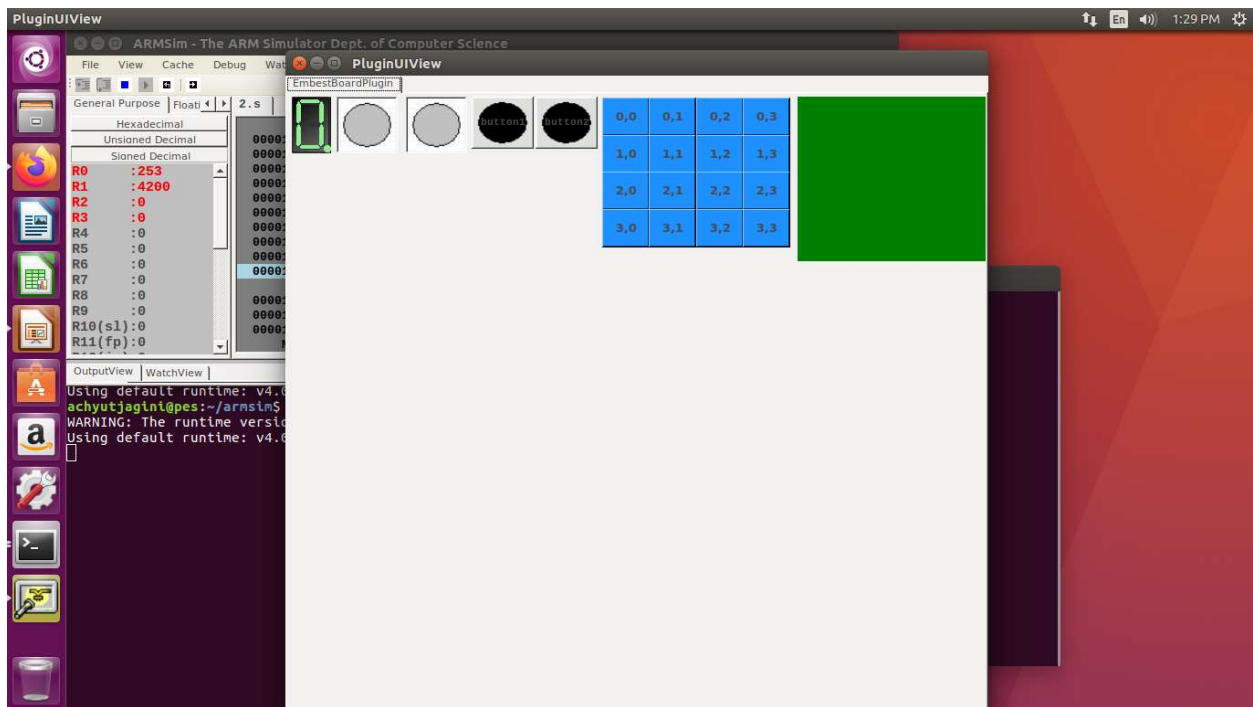
SEQ:
.WORD A|B|C|D|E|G|P
.WORD B|C|P
.WORD A|B|F|E|D|P
.WORD A|B|F|C|D|P
.WORD G|F|B|C|P
.WORD A|G|F|C|D|P
.WORD A|G|E|D|C|F|P
.WORD A|B|C|P
.WORD A|B|C|D|E|F|G|P
.WORD A|B|C|D|F|G|P
.WORD A|B|C|E|F|G
.WORD A|B|C|D|E|F|G
.WORD A|G|E|D
.WORD A|B|C|D|E|G
.WORD A|G|F|E|D
.WORD A|G|F|E

TIMEDelay:
.WORD 64000

;TEXT
LDR R1, =SEQ
MOV R3, #16

LOOPF:
LDR R0, [R1], #4
SHZ 0x200
LDR R2, =TIMEDelay
LDR R2, [R2]
BL DELAY
SUBS R3, R3, #1
BNE LOOPF
MOVEQ R3, #16
BEQ LOOPF

LOOPR:
SUB R1, R1, #4
LDR R0, [R1]
CUT 0x7000
```



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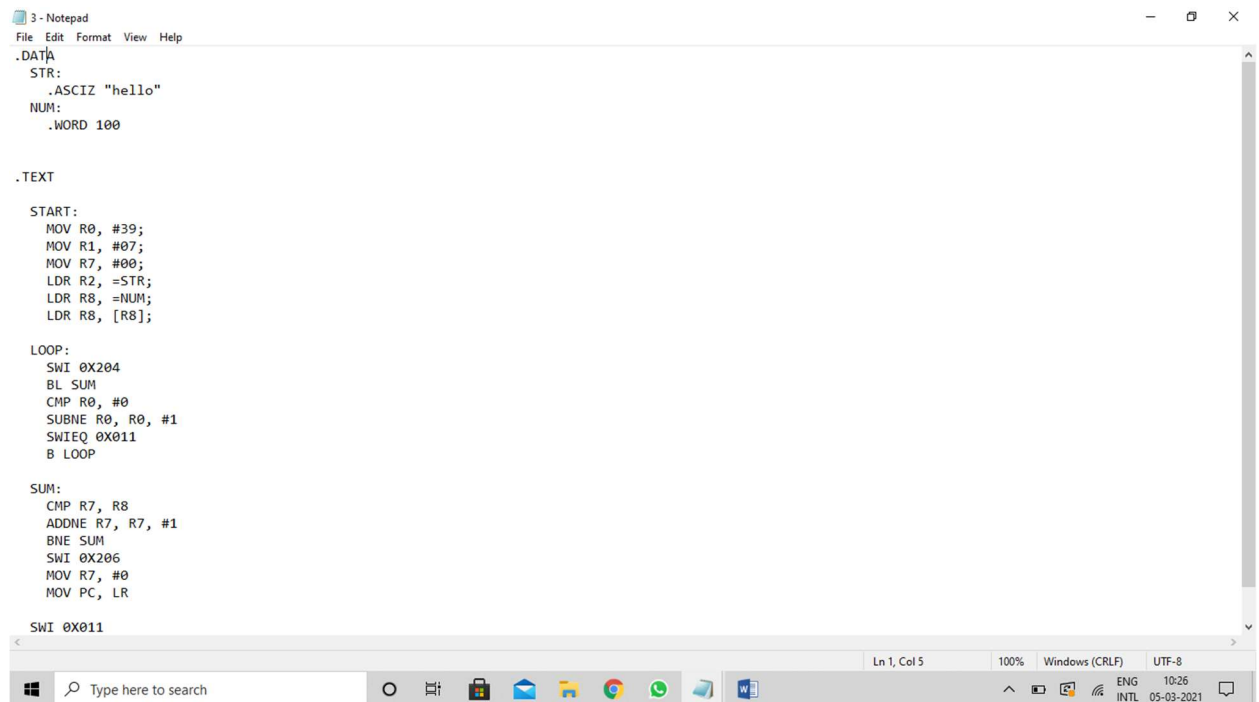
Date:

Name:	SRN:	Section

Week# ____6____

Program Number: ____3____

**Write an ALP to move a string from Right to Left on LCD
(40 columns by 15 rows).**



```
3 - Notepad
File Edit Format View Help
.DATA
STR:
.ASCIIZ "hello"
NUM:
.WORD 100

.TEXT
START:
MOV R0, #39;
MOV R1, #07;
MOV R7, #00;
LDR R2, =STR;
LDR R8, =NUM;
LDR R8, [R8];

LOOP:
SWI 0X204
BL SUM
CMP R0, #0
SUBNE R0, R0, #1
SWIEQ 0X011
B LOOP

SUM:
CMP R7, R8
ADDNE R7, R7, #1
BNE SUM
SWI 0X206
MOV R7, #0
MOV PC, LR

SWI 0X011
```

