

Microprocessor and Computer Architecture Laboratory

UE19CS256

4th Semester, Academic Year 2020-21

Date:6/03/2021

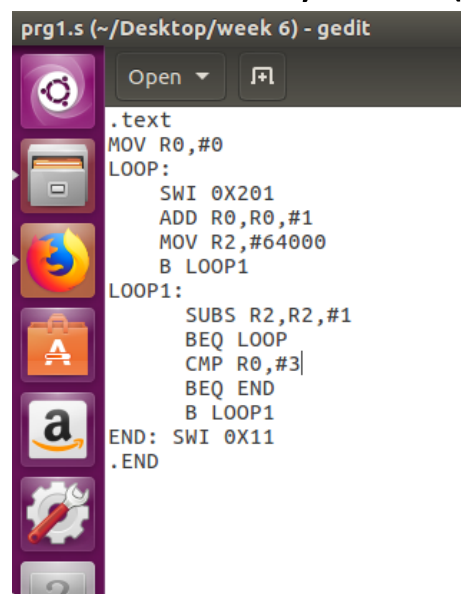
Name: R Sharmila	SRN: PES2UG19CS309	Section E
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Week# ____6____

Program Number: ____1____

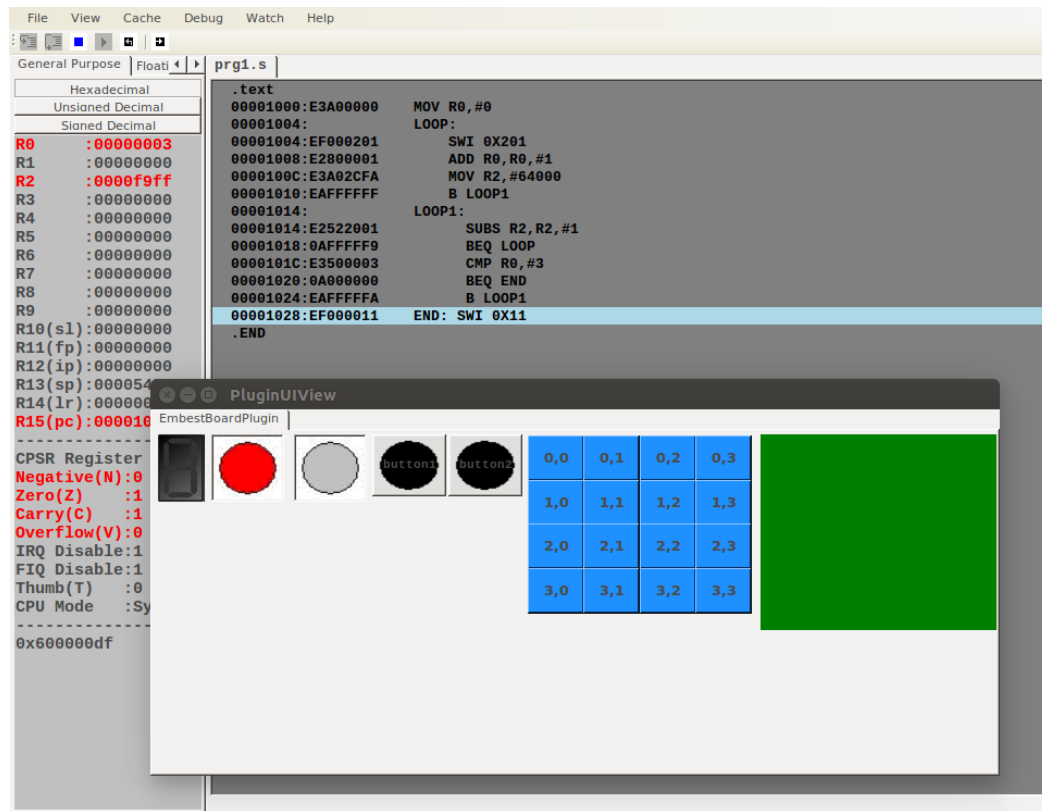
1. Write an ALP to blink LEDs. First, the right LED is switched on and the left LED is switched off. After 1 second, the right LED is switched off and the left LED is switched on and the program continue to blink both the LEDs.

I. ARM Assembly Code (1).



```
prg1.s (~/Desktop/week 6) - gedit
.text
MOV R0,#0
LOOP:
    SWI 0X201
    ADD R0,R0,#1
    MOV R2,#64000
    B LOOP1
LOOP1:
    SUBS R2,R2,#1
    BEQ LOOP
    CMP R0,#3
    BEQ END
    B LOOP1
END: SWI 0X11
.END
```

II. Output Screen Shot



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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**

I. ARM Assembly Code (1).

```
prg2.s (~/Desktop/week 6) - gedit
Open [?]
.text
MOV R0,#0
MOV R2,#0
LOOP:
    SWI 0X202
    CMP R0,#1
    LDREQ R1,ZERO
    MOV R5,#16
    BEQ ASCENDING
    LDRNE R1,=F
    MOV R5,#16
    BNE DESCENDING
    B END
ASCENDING:
    CMP R5,#0
    BEQ END
    LDR R0,[R1]
    SWI 0X200
    MOV R7,#64000
    ADD R1,R1,#4
    SUB R5,R5,#1
    BL DELAY
    B ASCENDING
DESCENDING:
    CMP R5,#0
    BEQ END
    LDR R0,[R1]
    SWI 0X200
    MOV R7,#64000
    SUB R1,R1,#4
    SUB R5,R5,#1
    BL DELAY
    B DESCENDING
DELAY:
    SUBS R7,R7,#1
    MOVEQ PC,LR
    B DELAY
END:SWI 0X11
```

```

.data
ZERO: .WORD 0xED
ONE: .WORD 0x60
TWO: .WORD 0xCE
THREE: .WORD 0xFA
FOUR: .WORD 0x63
FIVE: .WORD 0xAB
SIX: .WORD 0xAF
SEVEN: .WORD 0xE0
EIGHT: .WORD 0xEF
NINE: .WORD 0xE3
A: .WORD 0xE7
B: .WORD 0x2F
C: .WORD 0x8D
D: .WORD 0x6E
E: .WORD 0x8F
F: .WORD 0x87
.end

```

II. Output Screen Shot

The screenshot displays the PluginUIView application interface. The main window shows assembly code for a file named 'prg2.s'. The code includes a data section with constants ZERO through F and a text section with instructions like MOV, CMP, LDREQ, BEQ, LDRNE, and BNE. A 'PluginUI' window is overlaid on the bottom right, featuring a grid of buttons labeled 0,0 through 3,3, two buttons labeled 'button1' and 'button2', and a green rectangular area. The background window also shows a list of registers (R0-R15) and their current values, along with CPSR register flags like Negative(N), Zero(Z), Carry(C), and Overflow(V).

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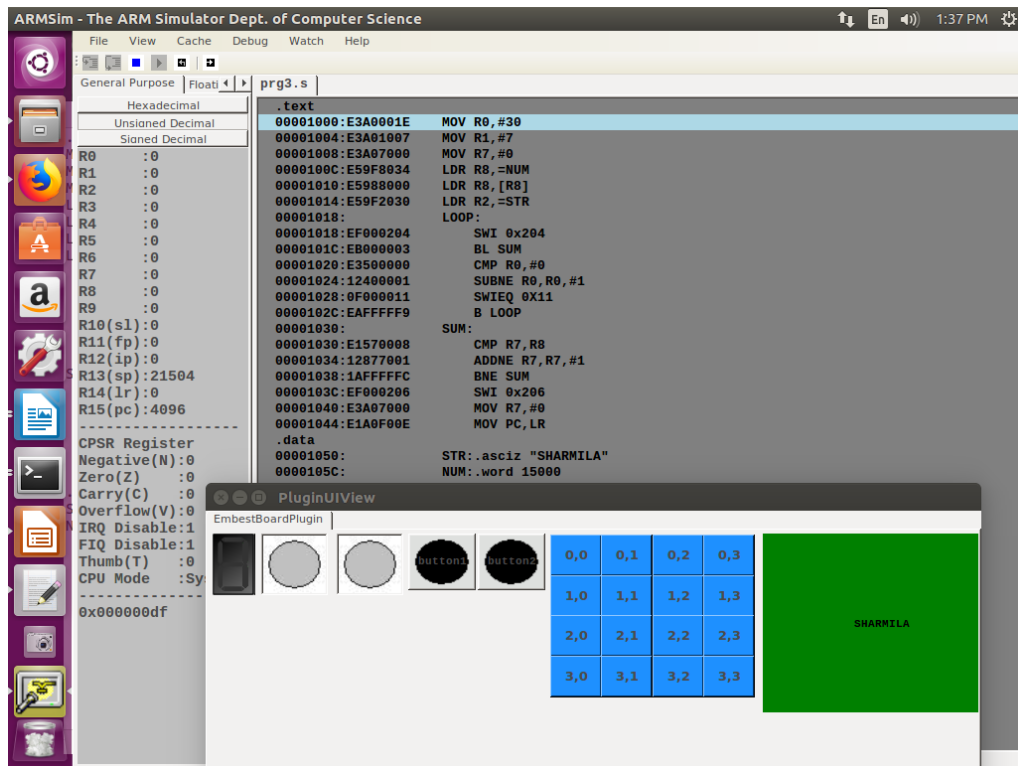
Week# ____6____ Program Number: ____3__

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

I. ARM Assembly Code

```
prg3.s (~/Desktop/week 6) - gedit
Open [?]
.text
MOV R0,#30
MOV R1,#7
MOV R7,#0
LDR R8,=NUM
LDR R6,[R8]
LDR R2,=STR
LOOP:
    SWI 0x204
    BL SUM
    CMP R0,#0
    SUBNE R0,R0,#1
    SWIEQ 0x11
    B LOOP
SUM:
    CMP R7,R6
    ADDNE R7,R7,#1
    BNE SUM
    SWI 0x206
    MOV R7,#0
    MOV PC,LR
.data
STR:.asciz "SHARMILA"
NUM:.word 15000
```

II. Output Screen Shot



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: R Sharmila

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Section: E

Date: 6/02/2021