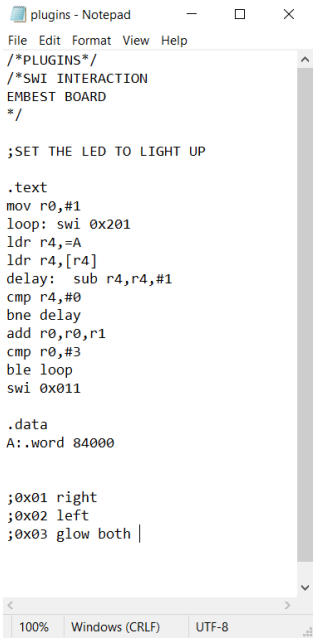
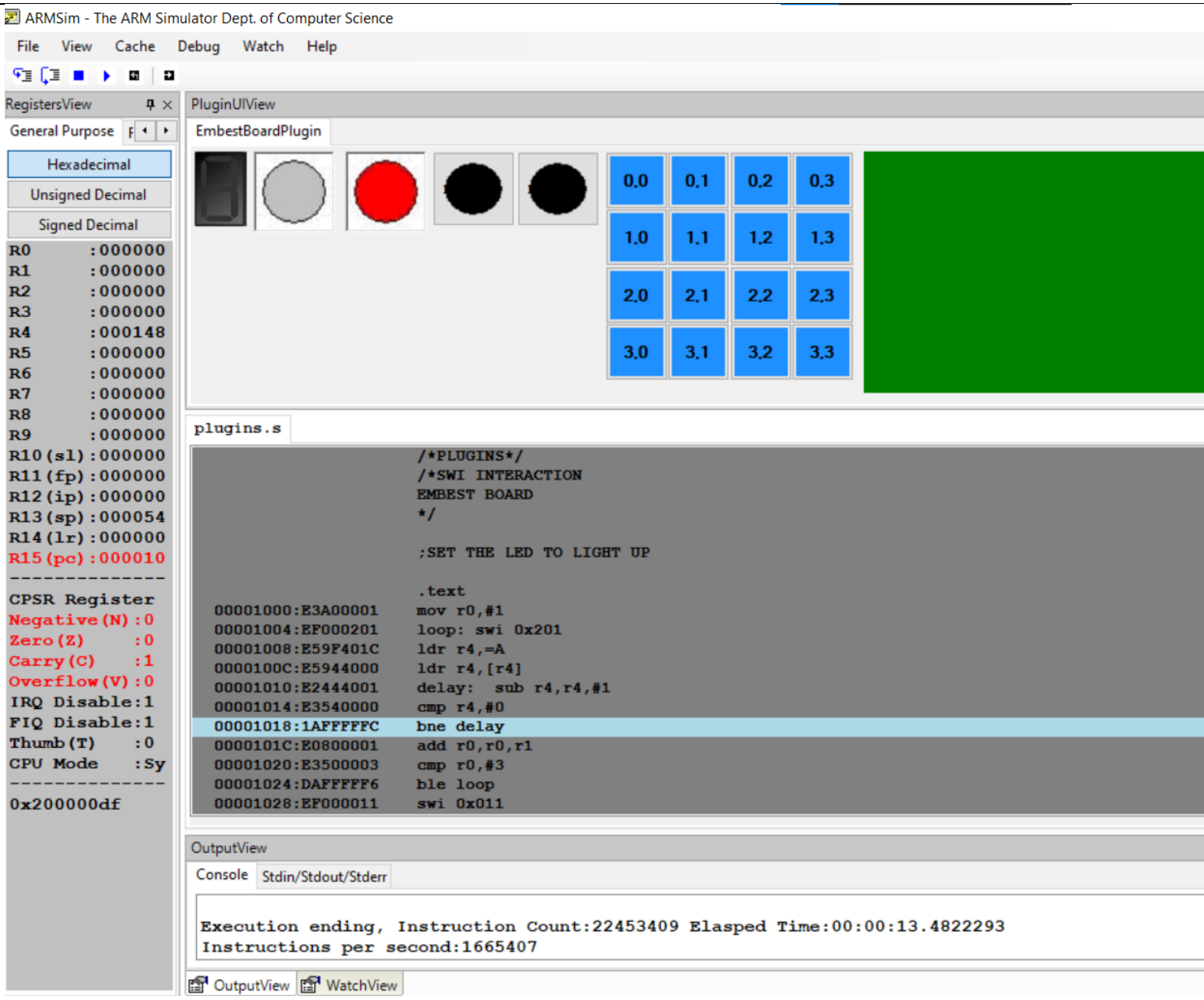
GAURAV MAHAJAN PES1UG20CS150 SEC C WEEK 7

Sl. No	Programs
Week No.7	

1. Demonstration of programs using plug-ins using ARMSIM.

   a. Set the LED to be light up.





Student Exercises:

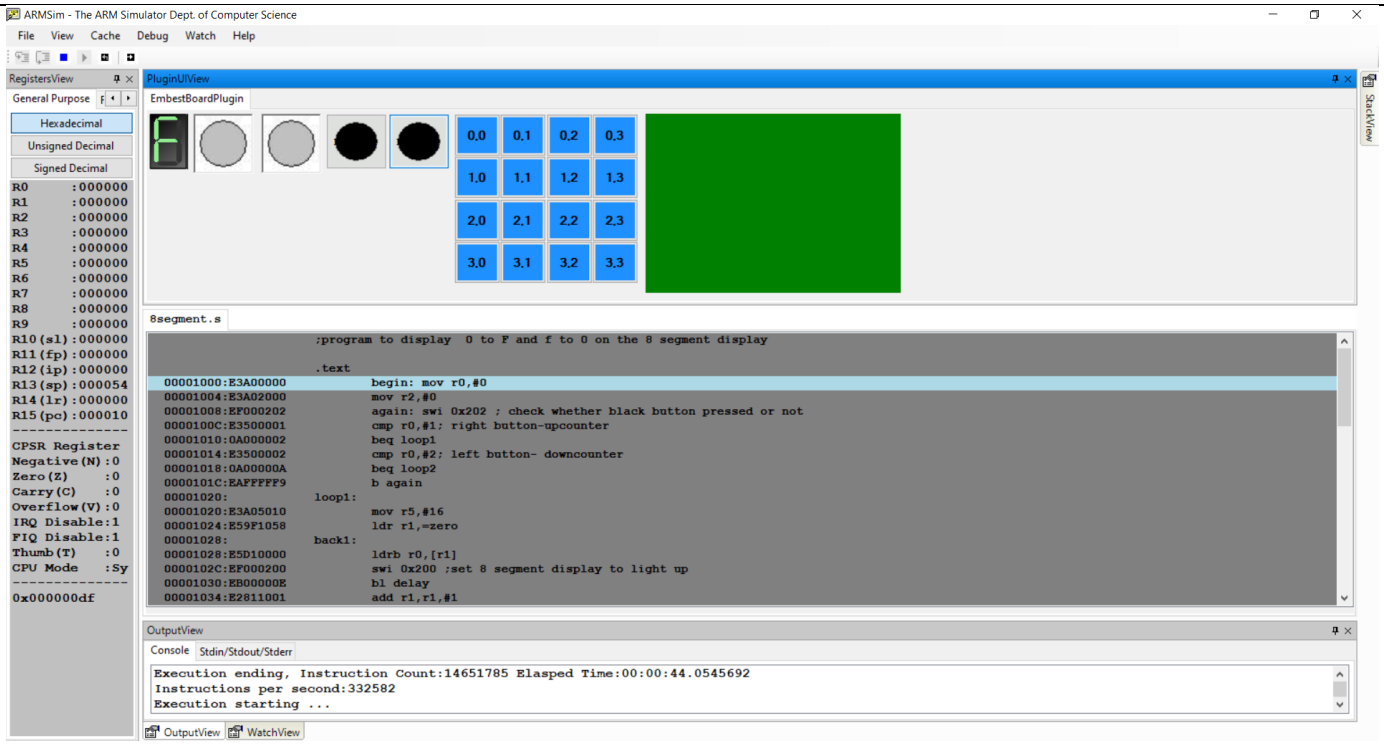
1. Execute the following programs on ARMSIM – PLUG-INS.

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

8segment - Notepad

File Edit Format View Help

```
;program to display  0 to F and f to 0 on the 8 segment display

.text
        begin: mov r0,#0
        mov r2,#0
        again: swi 0x202 ; check whether black button pressed or not
        cmp r0,#1; right button-upcounter
        beq loop1
        cmp r0,#2; left button- downcounter
        beq loop2
        b again
loop1:
        mov r5,#16
        ldr r1,=zero
back1:
        ldrb r0,[r1]
        swi 0x200 ;set 8 segment display to light up
        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 ;set 8 set 8 segment display to light up
        bl delay
        add 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 0b01101110
three: .byte 0b11111010
four: .byte 0b00110011
five: .byte 0b10101011
six: .byte 0b10101111
seven: .byte 0b01110000
eight: .byte 0b11101111
nine: .byte 0b11100011
A: .byte 0b11100111
B: .byte 0b00101111
C: .byte 0b10001101
D: .byte 0b01101110
E: .byte 0b10001111
F: .byte 0b10000111
```

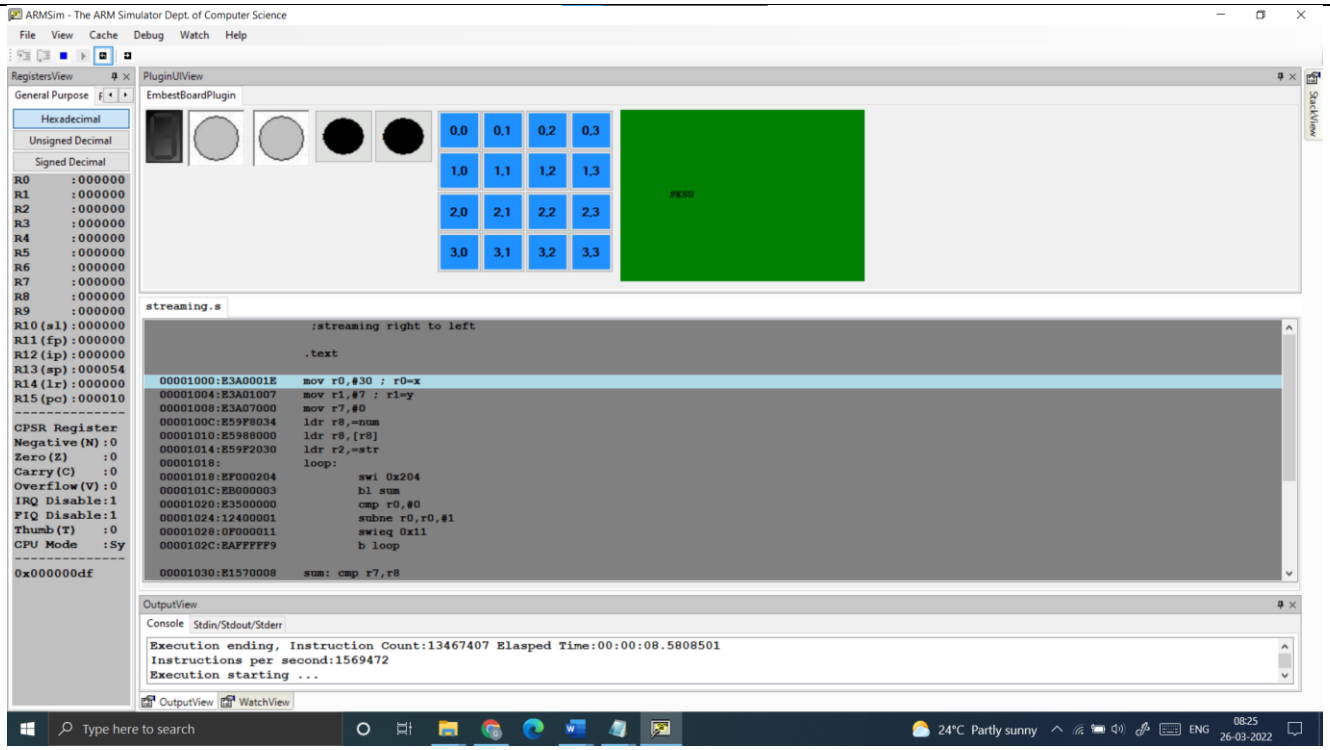


b. Move a string from RIGHT to LEFT on the LCD display panel.

streaming - Notepad

File Edit Format View Help

```
;streaming right to left

.text

mov r0,#30 ; r0=x
mov r1,#7 ; r1=y
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 "PESU"
num:.word 15000
```


ARMSim - The ARM Simulator Dept. of Computer Science
File View Cache Debug Watch Help
RegistersView
General Purpose
Hexadecimal
Unsigned Decimal
Signed Decimal
R0 :000000
R1 :000000
R2 :000000
R3 :000000
R4 :000000
R5 :000000
R6 :000000
R7 :000000
R8 :000000
R9 :000000
R10(sl):000000
R11(fp):000000
R12(ip):000000
R13(sp):000054
R14(lr):000000
R15(pc):000010
CPSR Register
Negative(N):0
Zero(Z) :0
Carry(C) :0
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T) :0
CPU Mode :Sy
0x000000df
PluginUIView
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
PESU
StackView
streaming.s
;streaming right to left
.text
00001000:E3A0001E mov r0,#30 ; r0=x
00001004:E3A01007 mov r1,#7 ; r1=y
00001008:E3A07000 mov r7,#0
0000100C:E59F8034 ldr r8,=num
00001010:E5988000 ldr r8,[r8]
00001014:E59F2030 ldr r2,=str
00001018: loop:
00001018:EF000204 swi 0x204
0000101C:EB000003 bl sum
00001020:E3500000 cmp r0,#0
00001024:12400001 subne r0,r0,#1
00001028:0F000011 swieq 0x11
0000102C:EAFFFFF9 b loop
00001030:E1570008 sum: cmp r7,r8
OutputView
Console
Stdin/Stdout/Stderr
Execution ending, Instruction Count:13467407 Elasped Time:00:00:08.5808501
Instructions per second:1569472
Execution starting ...
OutputView
WatchView
Type here to search
24°C Partly sunny
ENG
08:25
26-03-2022