Microprocessor and Computer Architecture Laboratory

UE19CS256

4th Semester, Academic Year 2020-21

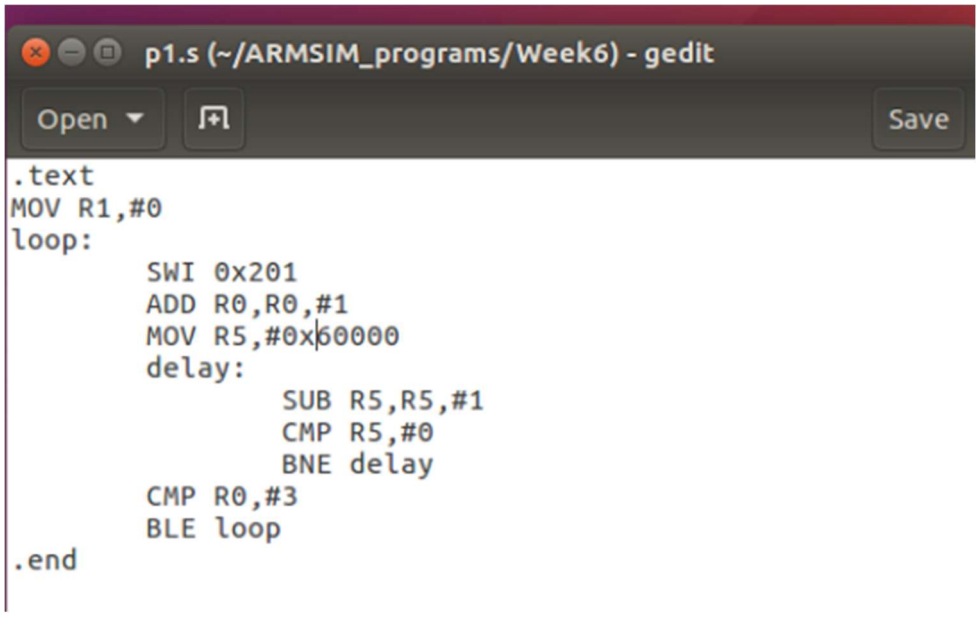
Date: 4/3/2021

Name: B.Pravena	SRN: PES2UG19CS076	Section: B

Week#____6_____ Program Number: ____1__

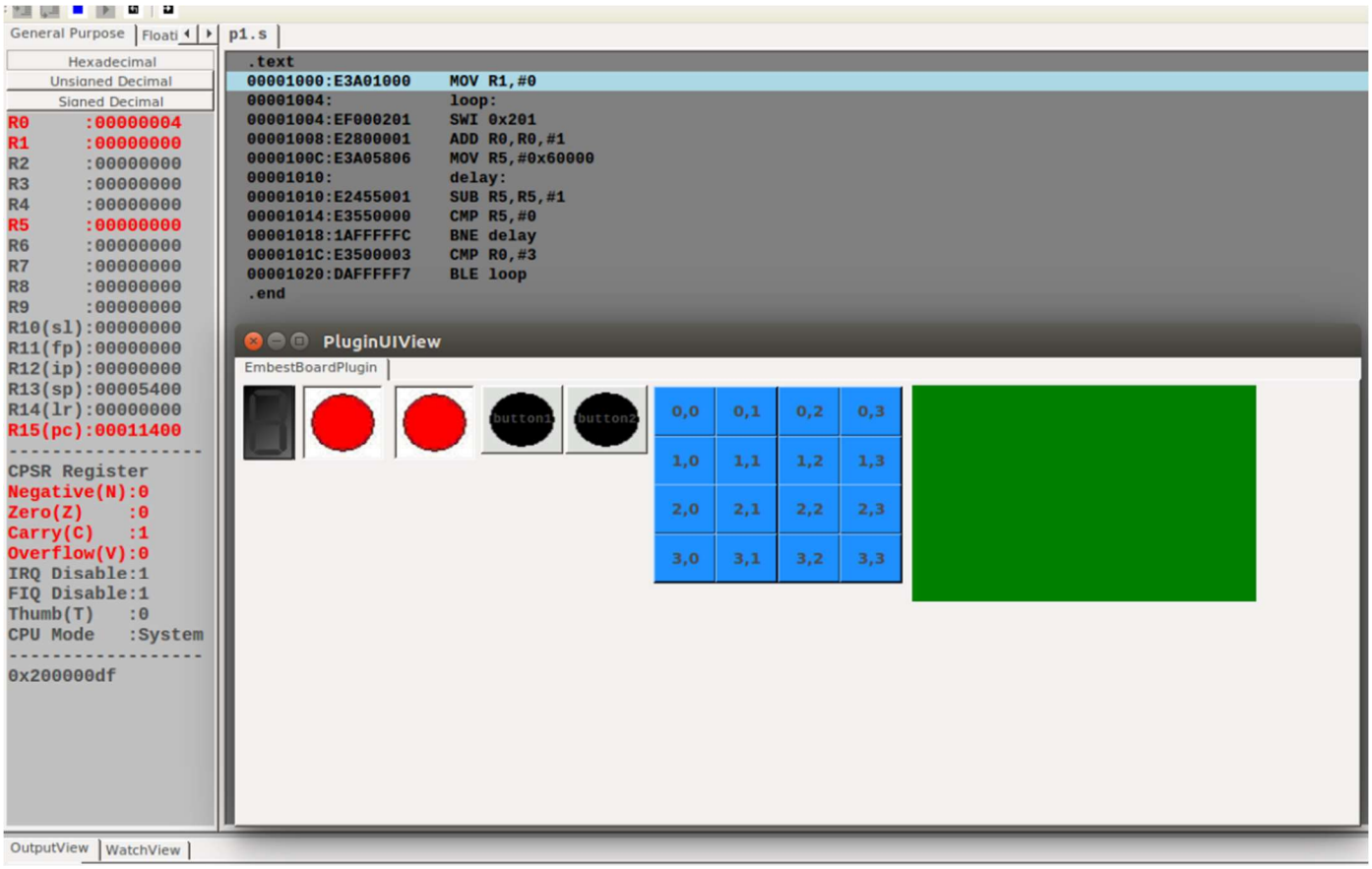
1. **Write an ALP to blink LEDs. First, the right LED is switched on and the left LED is switched off. After 1 second, the right LED is switched off and the left LED is switched on and the program continue to blink both the LEDs.**

I. ARM Assembly Code




```
.text
MOV R1,#0
loop:
        SWI 0x201
        ADD R0,R0,#1
        MOV R5,#0x60000
        delay:
                SUB R5,R5,#1
                CMP R5,#0
                BNE delay
        CMP R0,#3
        BLE loop
.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

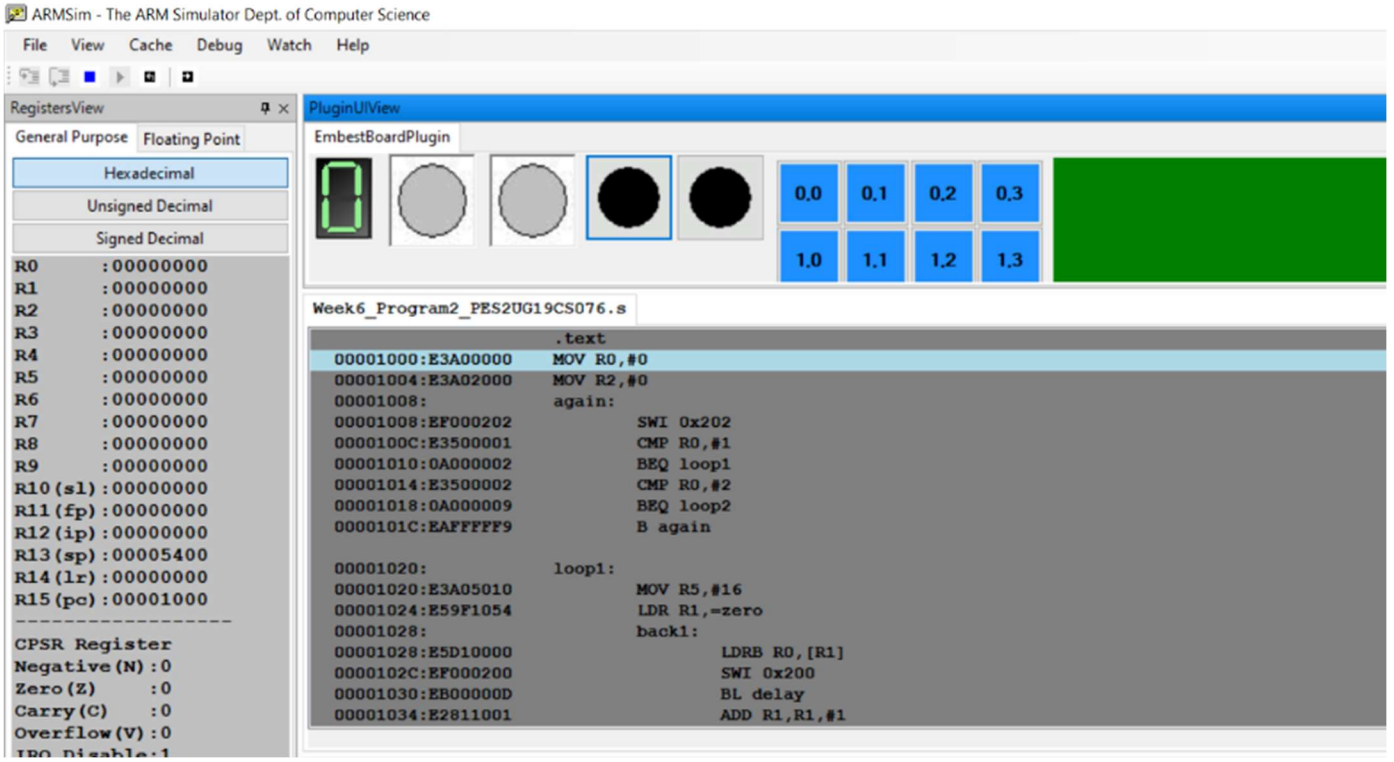
I. ARM Assembly Code

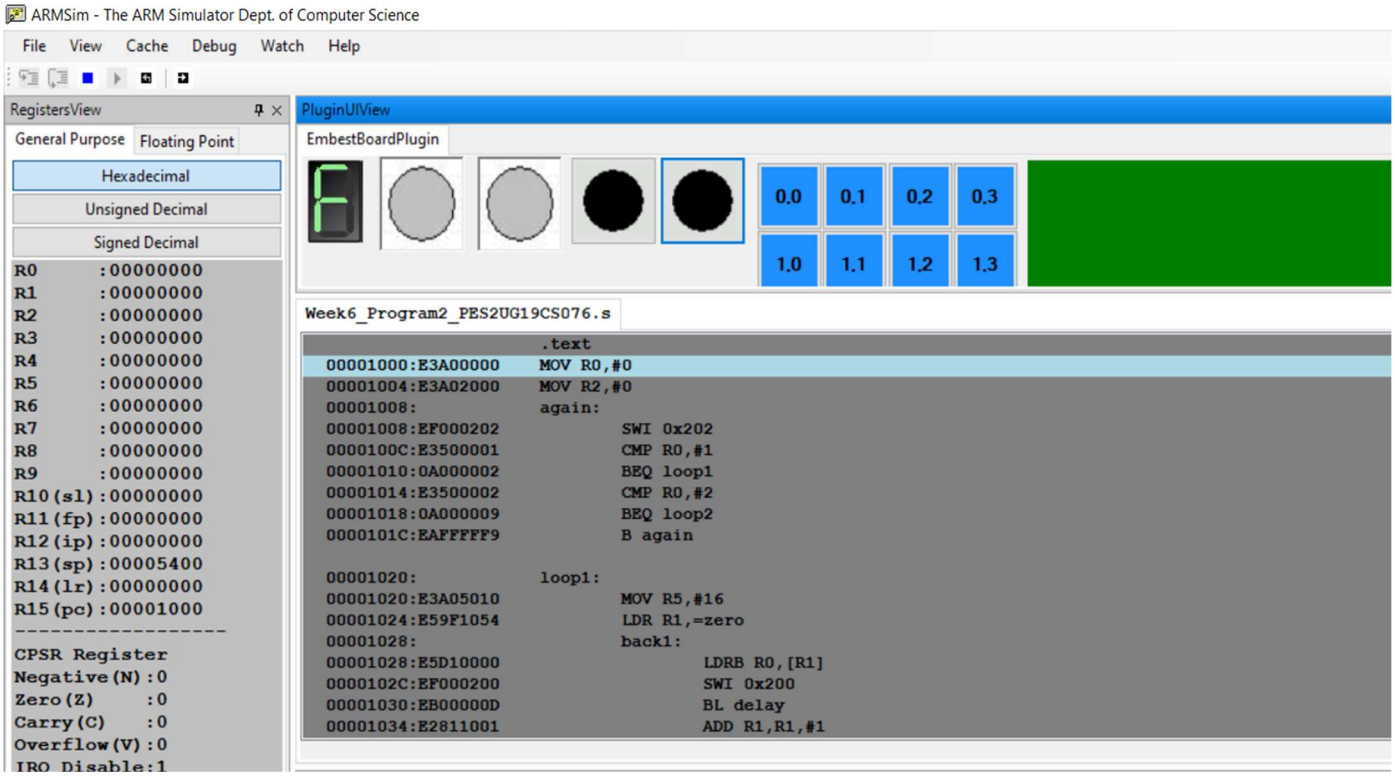
Week6_Program2_PES2UG19CS076 - Notepad

File Edit Format View Help

```
.text
MOV R0,#0
MOV R2,#0
again:
        SWI 0x202
        CMP R0,#1
        BEQ loop1
        CMP R0,#2
        BEQ loop2
        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 again
loop2:
        MOV R5,#6
        LDR R1,=F
        LDRB R0,[R1]
        SWI 0x200
        BL delay
        SUB R1,R1,#1
        SUB R5,R5,#1
        CMP R5,#0
        BNE loop2
B again



 delay:
         MOV R4,#0x64000
         delay_loop:
                 SUB R4,R4,#1
                 CMP R4,#0
                 BGE delay_loop
         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 0b11101011
 A: .byte 0b11100111
 B: .byte  0b11101111
 C: .byte 0b10001101
 D: .byte 0b11101101
 E: .byte 0b10001111
 F: .byte 0b10000111

 .end
```

II. Output Screen Shot





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Week#____6_____ Program Number: ____3__

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

I. ARM Assembly Code

II.Output Screen Shot