Microprocessor and Computer Architecture Laboratory

UE19CS256

4th Semester, Academic Year 2020-21

Date:29/1/21

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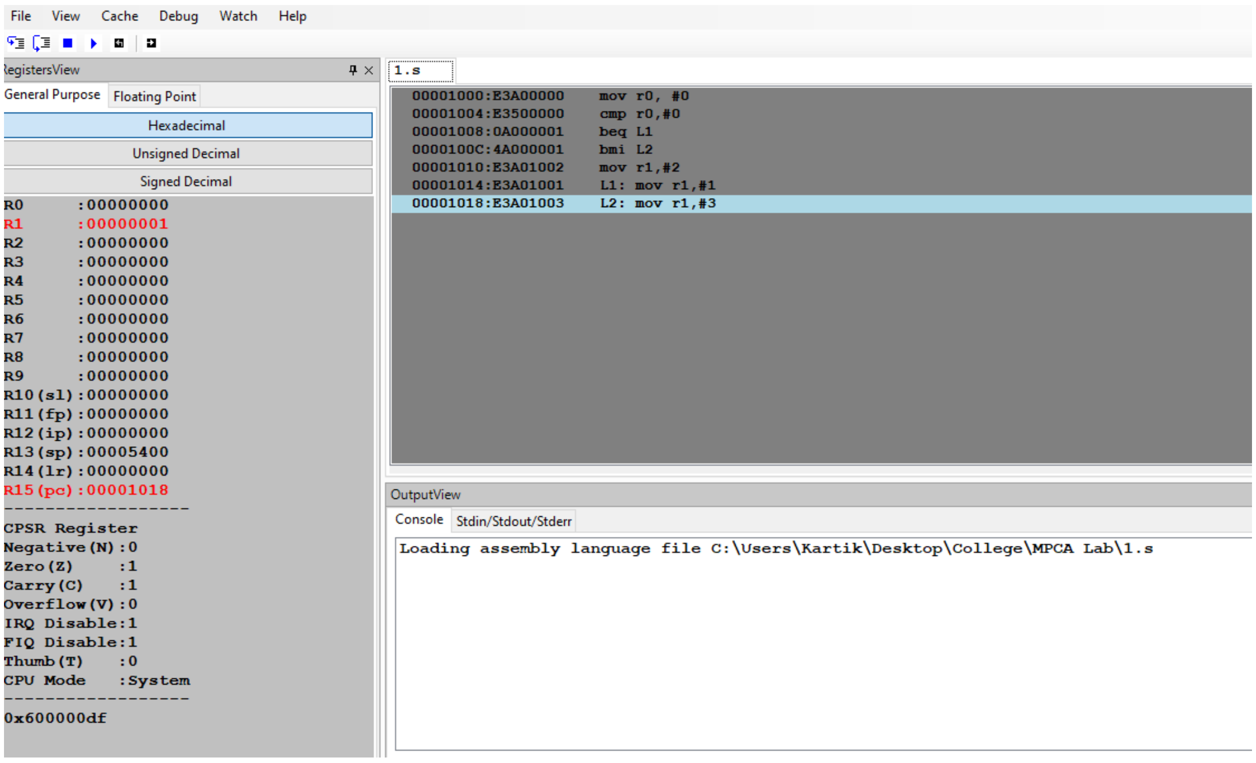
Week#____2_______Program Number: ____5___

Based on the value of the number in R0, Write an ALP to store 1 in R1 if R0 is zero, Store 2 in R1 if R0 is positive, Store 3 in R1 if R0 is negative.

I. ARM Assembly Code

```
mov r0, #0
cmp r0,#0
beq L1
bmi L2
mov r1,#2
L1: mov r1,#1
L2: mov r1,#3
```

II. Output Screen Shot

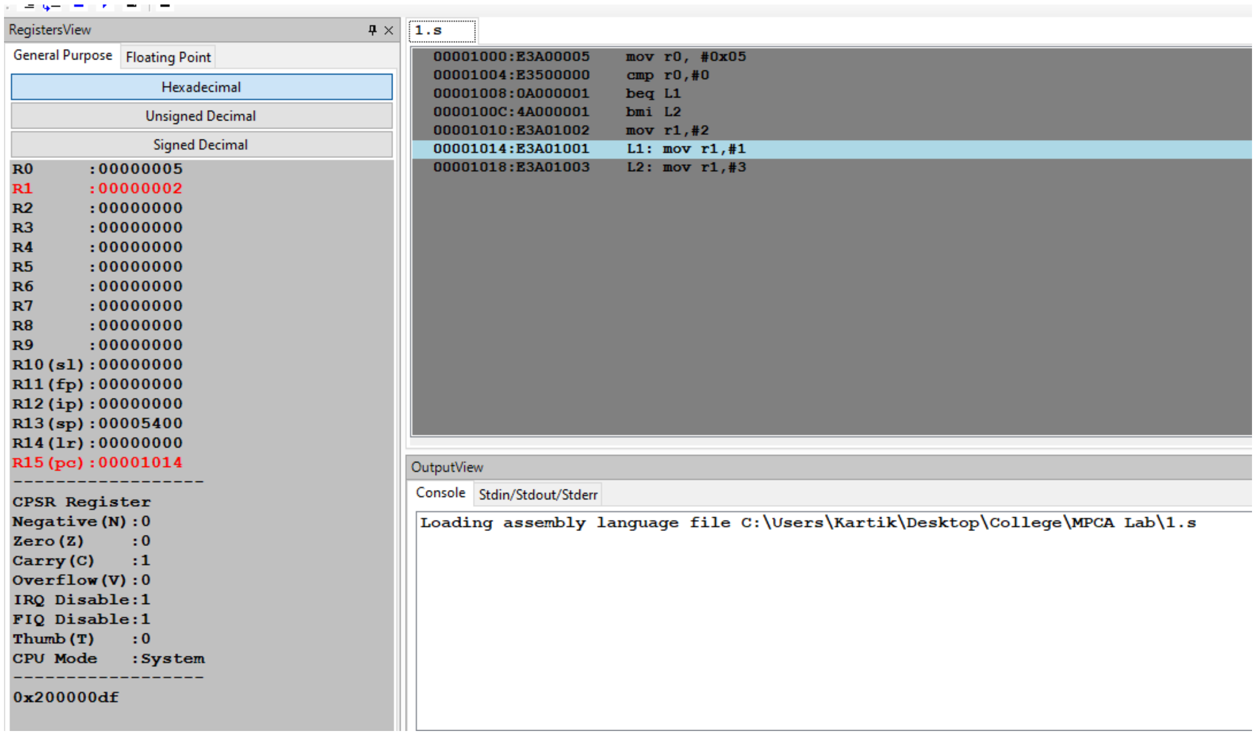


```
R0       :00000000
R1       :00000001
R2       :00000000
R3       :00000000
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl)  :00000000
R11(fp)  :00000000
R12(ip)  :00000000
R13(sp)  :00005400
R14(lr)  :00000000
R15(pc)  :00001018
------------------
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
```

```
00001000:E3A00000    mov r0, #0
00001004:E3500000    cmp r0,#0
00001008:0A000001    beq L1
0000100C:4A000001    bmi L2
00001010:E3A01002    mov r1,#2
00001014:E3A01001    L1: mov r1,#1
00001018:E3A01003    L2: mov r1,#3
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Case1

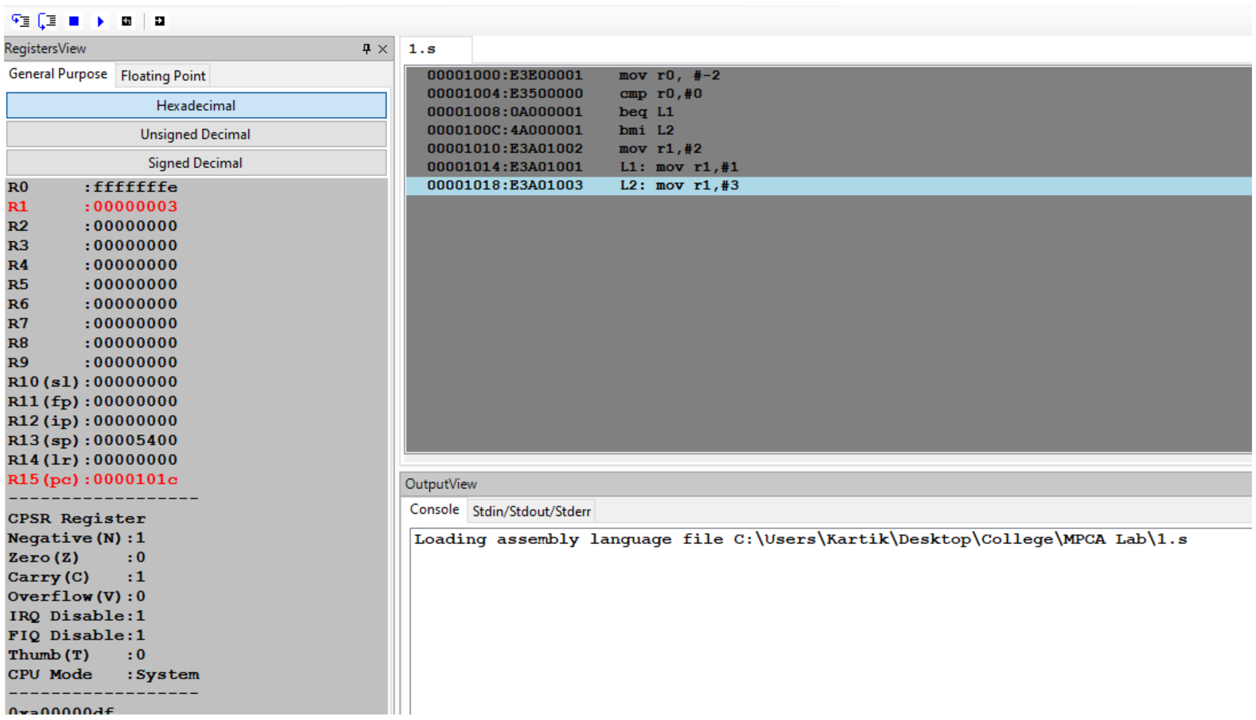


```
R0       :00000005
R1       :00000002
R2       :00000000
R3       :00000000
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl)  :00000000
R11(fp)  :00000000
R12(ip)  :00000000
R13(sp)  :00005400
R14(lr)  :00000000
R15(pc)  :00001014
------------------
CPSR Register
Negative(N):0
Zero(Z)    :0
Carry(C)   :1
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T)   :0
CPU Mode   :System
------------------
0x200000df
```

```
00001000:E3A00005    mov r0, #0x05
00001004:E3500000    cmp r0,#0
00001008:0A000001    beq L1
0000100C:4A000001    bmi L2
00001010:E3A01002    mov r1,#2
00001014:E3A01001    L1: mov r1,#1
00001018:E3A01003    L2: mov r1,#3
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Case2



```
R0       :fffffffe
R1       :00000003
R2       :00000000
R3       :00000000
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl):00000000
R11(fp):00000000
R12(ip):00000000
R13(sp):00005400
R14(lr):00000000
R15(pc):0000101c
------------------
CPSR Register
Negative(N):1
Zero(Z)    :0
Carry(C)   :1
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T)   :0
CPU Mode   :System
------------------
0x a00000df
```

```
00001000:E3E00001    mov r0, #-2
00001004:E3500000    cmp r0,#0
00001008:0A000001    beq L1
0000100C:4A000001    bmi L2
00001010:E3A01002    mov r1,#2
00001014:E3A01001    L1: mov r1,#1
00001018:E3A01003    L2: mov r1,#3
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Case3

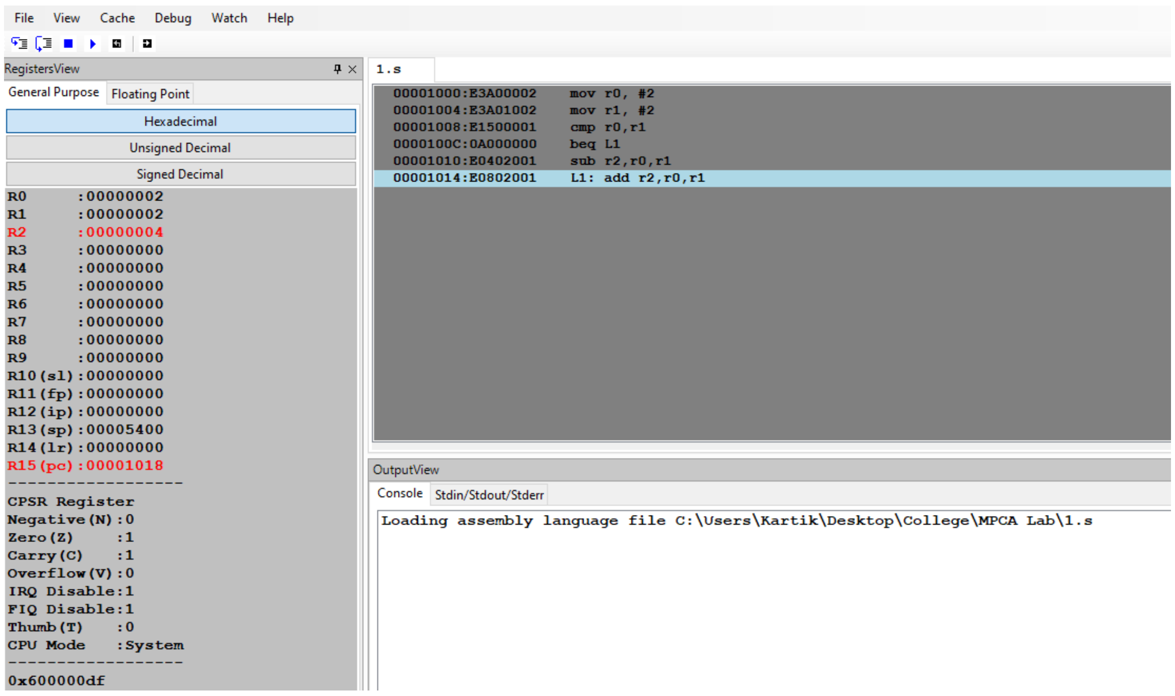
Week#____2_______Program Number: ____6___

Write an ALP to compare the value of R0 and R1, add if R0 = R1, else subtract

I. ARM Assembly Code

```
mov r0, #3
mov r1, #2
cmp r0,r1
beq L1
sub r2,r0,r1
L1: add r2,r0,r1
```

II. Output Screen Shot

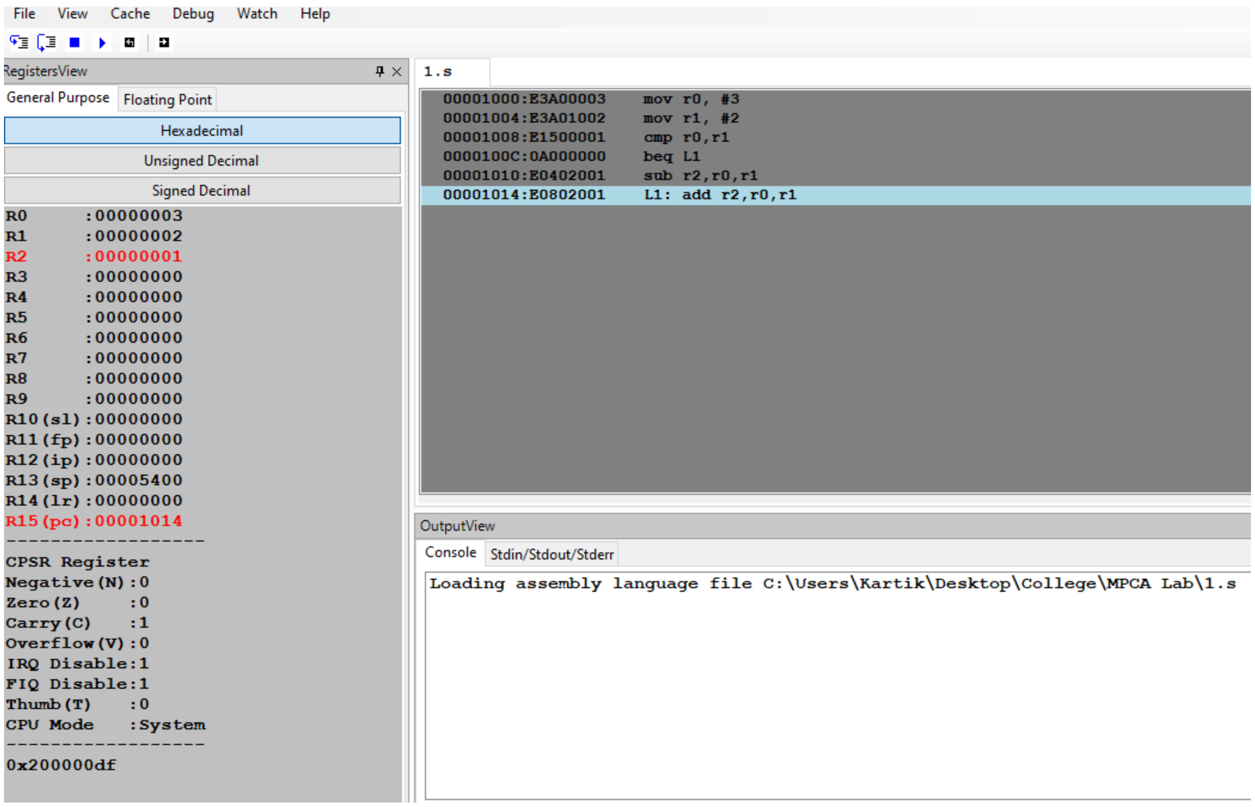


```
R0       :00000002
R1       :00000002
R2       :00000004
R3       :00000000
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl)  :00000000
R11(fp)  :00000000
R12(ip)  :00000000
R13(sp)  :00005400
R14(lr)  :00000000
R15(pc)  :00001018
------------------
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
```

```
00001000:E3A00002    mov r0, #2
00001004:E3A01002    mov r1, #2
00001008:E1500001    cmp r0,r1
0000100C:0A000000    beq L1
00001010:E0402001    sub r2,r0,r1
00001014:E0802001    L1: add r2,r0,r1
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Case1



```
R0      :00000003
R1      :00000002
R2      :00000001
R3      :00000000
R4      :00000000
R5      :00000000
R6      :00000000
R7      :00000000
R8      :00000000
R9      :00000000
R10(sl):00000000
R11(fp):00000000
R12(ip):00000000
R13(sp):00005400
R14(lr):00000000
R15(pc):00001014
------------------
CPSR Register
Negative(N):0
Zero(Z)    :0
Carry(C)   :1
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T)   :0
CPU Mode   :System
------------------
0x200000df
```

```
00001000:E3A00003    mov r0, #3
00001004:E3A01002    mov r1, #2
00001008:E1500001    cmp r0,r1
0000100C:0A000000    beq L1
00001010:E0402001    sub r2,r0,r1
00001014:E0802001    L1: add r2,r0,r1
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Case2

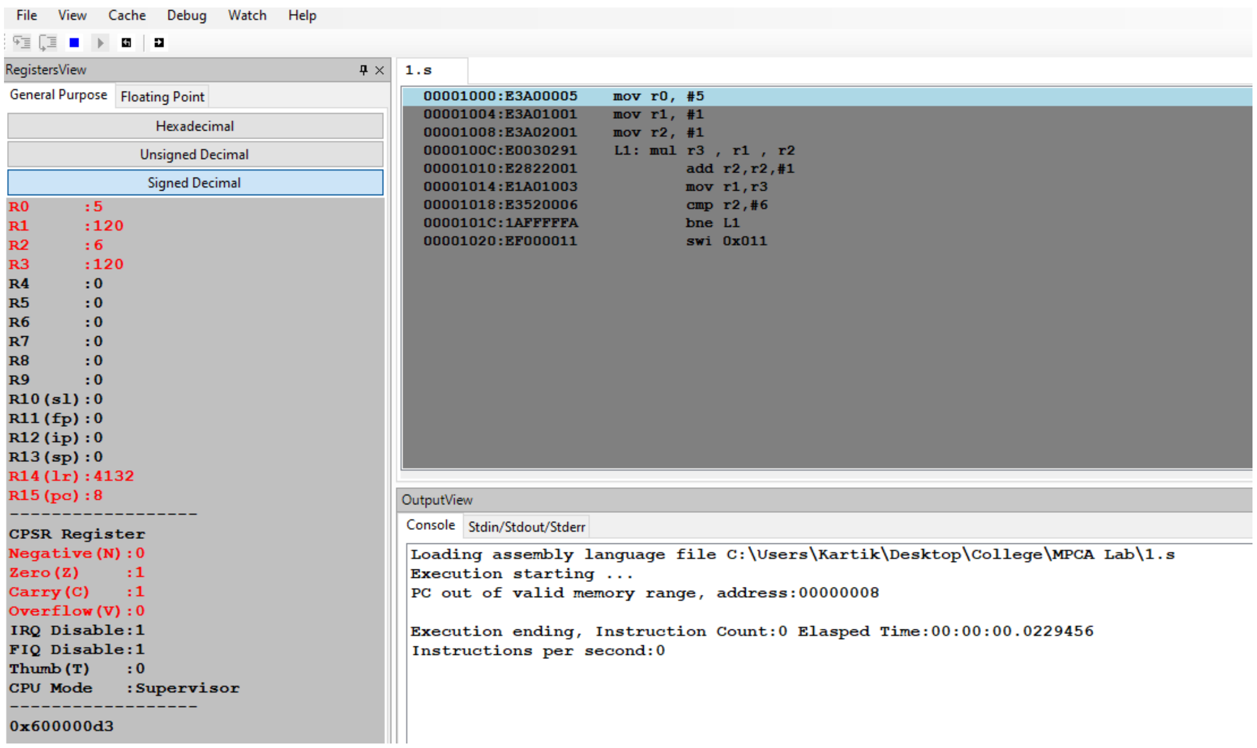
Week#____2_______Program Number: ____7___

Write an ALP to find the factorial of a number stored in R0. Store the value in R1 (without using LDR and STR instructions).Use only registers.

I. ARM Assembly Code

```
mov r0, #5
mov r1, #1
mov r2, #1
L1: mul r3 , r1 , r2
    add r2,r2,#1
    mov r1,r3
    cmp r2,#6
    bne L1
    swi 0x011
```

II. Output



```
R0        :5
R1        :120
R2        :6
R3        :120
R4        :0
R5        :0
R6        :0
R7        :0
R8        :0
R9        :0
R10(sl):0
R11(fp):0
R12(ip):0
R13(sp):0
R14(lr):4132
R15(pc):8
------------------
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   :Supervisor
------------------
0x600000d3
```

```
00001000:E3A00005    mov r0, #5
00001004:E3A01001    mov r1, #1
00001008:E3A02001    mov r2, #1
0000100C:E0030291    L1: mul r3 , r1 , r2
00001010:E2822001           add r2,r2,#1
00001014:E1A01003           mov r1,r3
00001018:E3520006           cmp r2,#6
0000101C:1AFFFFFA           bne L1
00001020:EF000011           swi 0x011
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0229456
Instructions per second:0
```

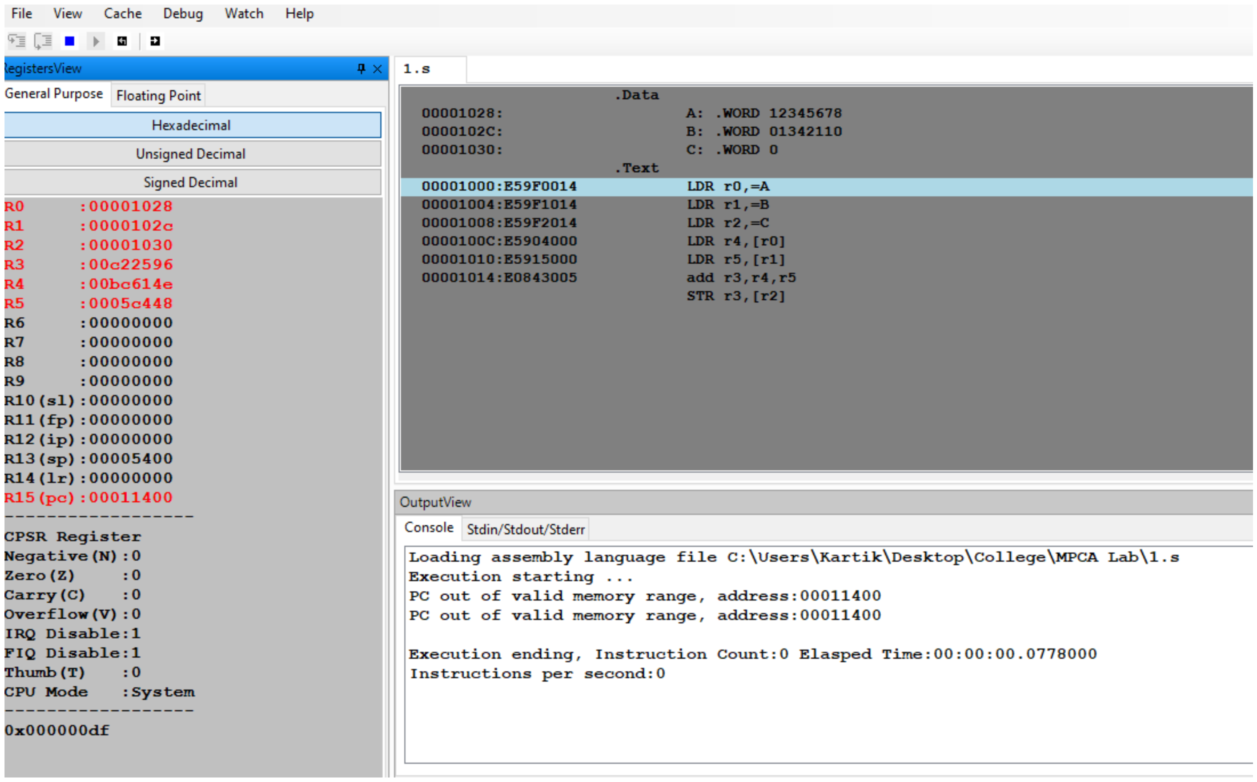
Week#____2_______Program Number: ____8a___

Write an ALP to add two 32 bit numbers loaded from memory and store the result in memory.

I. ARM Assembly Code

```
.Data
        A: .WORD 12345678
        B: .WORD 01342110
        C: .WORD 0
.Text
        LDR r0,=A
        LDR r1,=B
        LDR r2,=C
        LDR r4,[r0]
        LDR r5,[r1]
        add r3,r4,r5
        STR r3,[r2]
```

II. Output


File View Cache Debug Watch Help
RegistersView
General Purpose Floating Point
Hexadecimal
Unsigned Decimal
Signed Decimal
1.s
OutputView
Console Stdin/Stdout/Stderr

```
R0       :00001028
R1       :0000102c
R2       :00001030
R3       :00c22596
R4       :00bc614e
R5       :0005c448
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl)  :00000000
R11(fp)  :00000000
R12(ip)  :00000000
R13(sp)  :00005400
R14(lr)  :00000000
R15(pc)  :00011400
------------------
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   :System
------------------
0x000000df
```

```
                          .Data
00001028:                          A:  .WORD 12345678
0000102C:                          B:  .WORD 01342110
00001030:                          C:  .WORD 0
                          .Text
00001000:E59F0014                  LDR r0,=A
00001004:E59F1014                  LDR r1,=B
00001008:E59F2014                  LDR r2,=C
0000100C:E5904000                  LDR r4,[r0]
00001010:E5915000                  LDR r5,[r1]
00001014:E0843005                  add r3,r4,r5
                                   STR r3,[r2]
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00011400
PC out of valid memory range, address:00011400

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0778000
Instructions per second:0
```

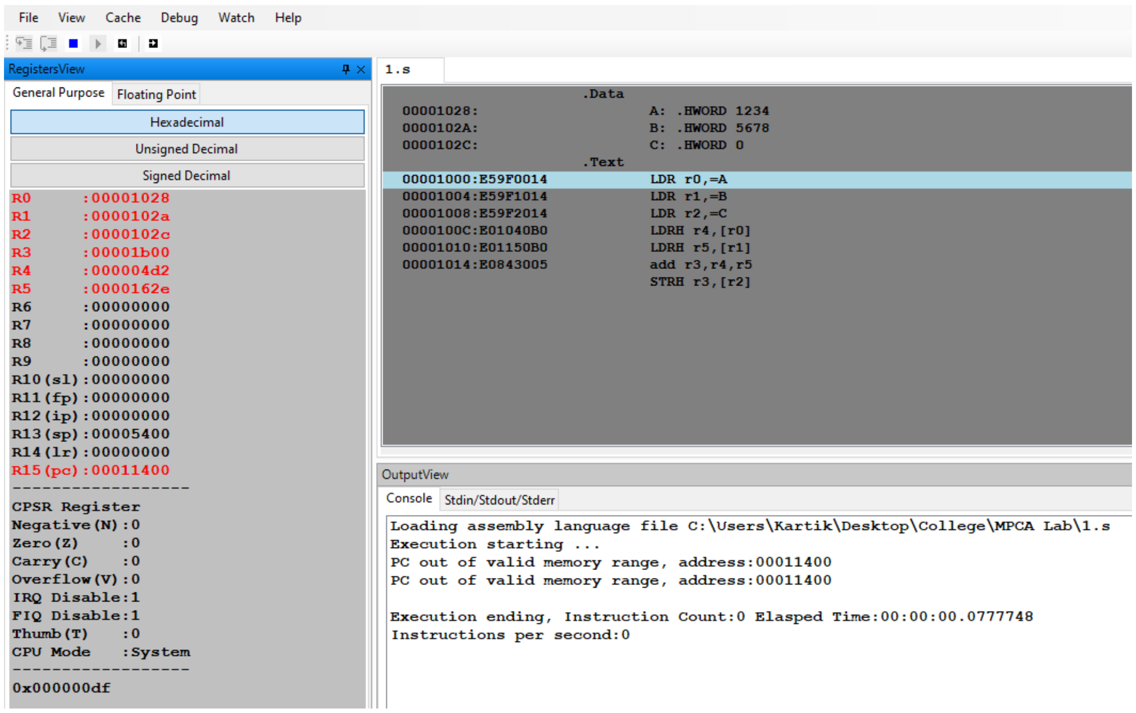
Week#____2_______Program Number: ____8b___

Write an ALP to add two 16 bit numbers loaded from memory and store the result in memory.

I. ARM Assembly Code

```
.Data
        A: .HWORD 1234
        B: .HWORD 5678
        C: .HWORD 0
.Text
        LDR r0,=A
        LDR r1,=B
        LDR r2,=C
        LDRH r4,[r0]
        LDRH r5,[r1]
        add r3,r4,r5
        STRH r3,[r2]
```

II. Output



```
R0      :00001028
R1      :0000102a
R2      :0000102c
R3      :00001b00
R4      :000004d2
R5      :0000162e
R6      :00000000
R7      :00000000
R8      :00000000
R9      :00000000
R10(sl):00000000
R11(fp):00000000
R12(ip):00000000
R13(sp):00005400
R14(lr):00000000
R15(pc):00011400
-----------------
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    :System
-----------------
0x000000df
```

```
                        .Data
00001028:                       A: .HWORD 1234
0000102A:                       B: .HWORD 5678
0000102C:                       C: .HWORD 0
                        .Text
00001000:E59F0014               LDR r0,=A
00001004:E59F1014               LDR r1,=B
00001008:E59F2014               LDR r2,=C
0000100C:E01040B0               LDRH r4,[r0]
00001010:E01150B0               LDRH r5,[r1]
00001014:E0843005               add r3,r4,r5
                                STRH r3,[r2]
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00011400
PC out of valid memory range, address:00011400

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0777748
Instructions per second:0
```

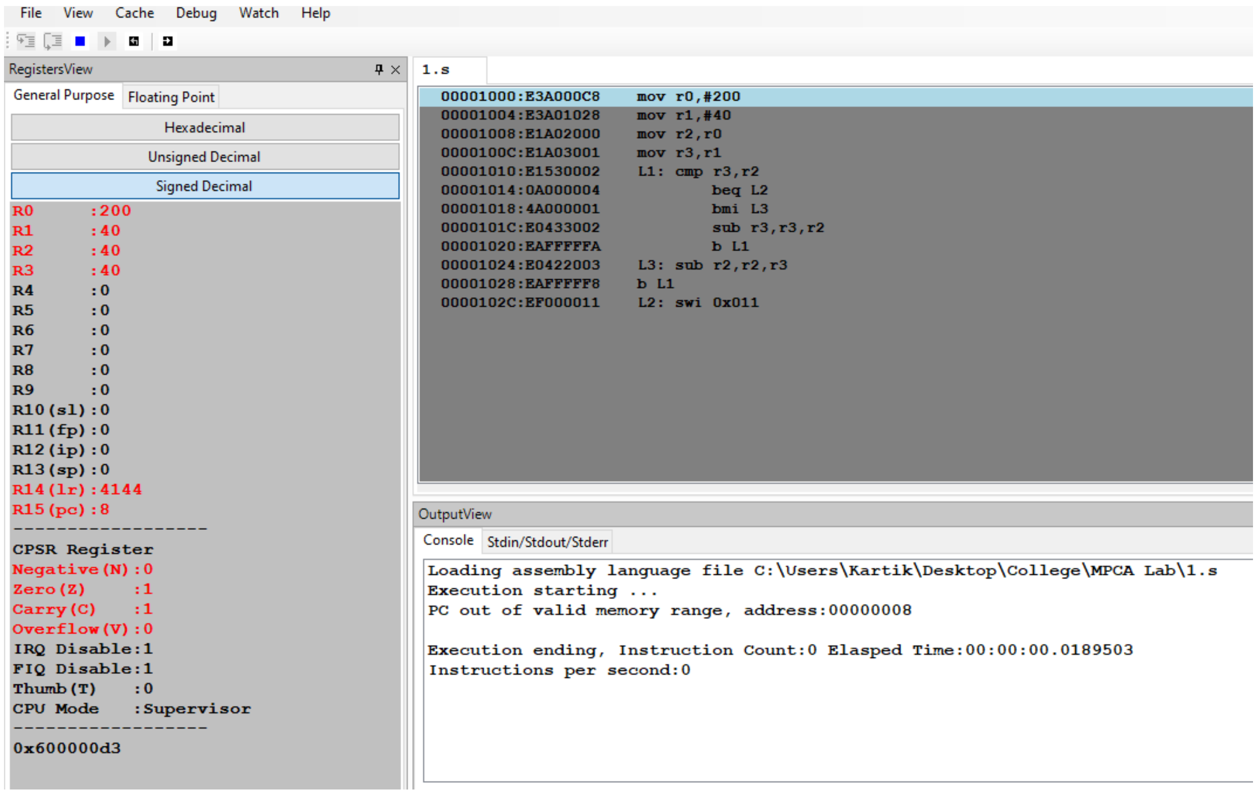
Week#____2_______Program Number: ____9a___

Write an ALP to find GCD of two numbers (without using LDR and STR instructions).Both numbers are in registers. Use only registers.

I. ARM Assembly Code

```
mov r0,#200
mov r1,#40
mov r2,r0
mov r3,r1
L1: cmp r3,r2
    beq L2
    bmi L3
    sub r3,r3,r2
    b L1
L3: sub r2,r2,r3
b L1
L2: swi 0x011
```

Output



```
R0       :200
R1       :40
R2       :40
R3       :40
R4       :0
R5       :0
R6       :0
R7       :0
R8       :0
R9       :0
R10(sl):0
R11(fp):0
R12(ip):0
R13(sp):0
R14(lr):4144
R15(pc):8
------------------
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   :Supervisor
------------------
0x600000d3
```

```
00001000:E3A000C8    mov r0,#200
00001004:E3A01028    mov r1,#40
00001008:E1A02000    mov r2,r0
0000100C:E1A03001    mov r3,r1
00001010:E1530002    L1: cmp r3,r2
00001014:0A000004           beq L2
00001018:4A000001           bmi L3
0000101C:E0433002           sub r3,r3,r2
00001020:EAFFFFFA           b L1
00001024:E0422003    L3: sub r2,r2,r3
00001028:EAFFFFF8    b L1
0000102C:EF000011    L2: swi 0x011
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0189503
Instructions per second:0
```

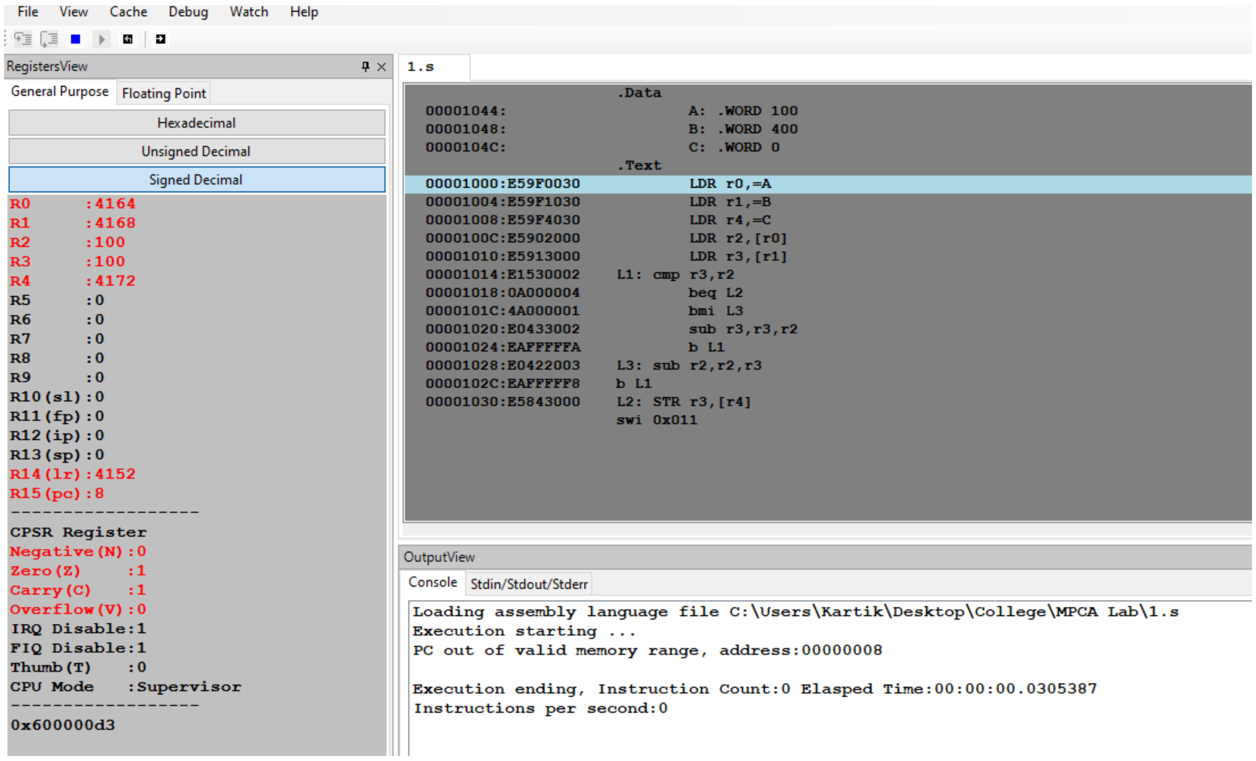
Week#____2_______Program Number: ____9b___

Write an ALP to find the GCD of given numbers (both numbers in memory). Store result in memory.

I. ARM Assembly Code

```
.Data
        A: .WORD 100
        B: .WORD 400
        C: .WORD 0
.Text
        LDR r0,=A
        LDR r1,=B
        LDR r4,=C
        LDR r2,[r0]
        LDR r3,[r1]
L1: cmp r3,r2
        beq L2
        bmi L3
        sub r3,r3,r2
        b L1
L3: sub r2,r2,r3
b L1
L2: STR r3,[r4]
swi 0x011
```

II.Output



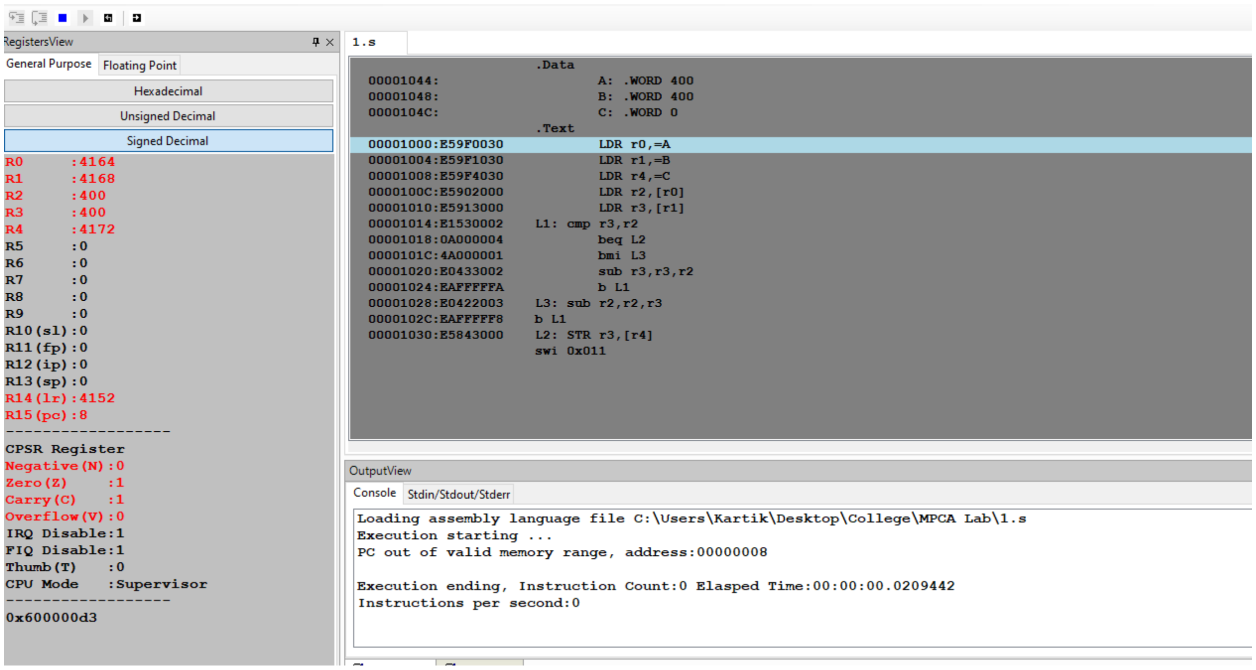
```
R0      :4164
R1      :4168
R2      :100
R3      :100
R4      :4172
R5      :0
R6      :0
R7      :0
R8      :0
R9      :0
R10(sl):0
R11(fp):0
R12(ip):0
R13(sp):0
R14(lr):4152
R15(pc):8
------------------
CPSR Register
Negative(N):0
Zero(Z)     :1
Carry(C)    :1
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T)    :0
CPU Mode    :Supervisor
------------------
0x600000d3
```

```
                         .Data
00001044:                         A: .WORD 100
00001048:                         B: .WORD 400
0000104C:                         C: .WORD 0
                         .Text
00001000:E59F0030                 LDR r0,=A
00001004:E59F1030                 LDR r1,=B
00001008:E59F4030                 LDR r4,=C
0000100C:E5902000                 LDR r2,[r0]
00001010:E5913000                 LDR r3,[r1]
00001014:E1530002        L1: cmp r3,r2
00001018:0A000004                 beq L2
0000101C:4A000001                 bmi L3
00001020:E0433002                 sub r3,r3,r2
00001024:EAFFFFFA                 b L1
00001028:E0422003        L3: sub r2,r2,r3
0000102C:EAFFFFF8        b L1
00001030:E5843000        L2: STR r3,[r4]
                         swi 0x011
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0305387
Instructions per second:0
```

A<B



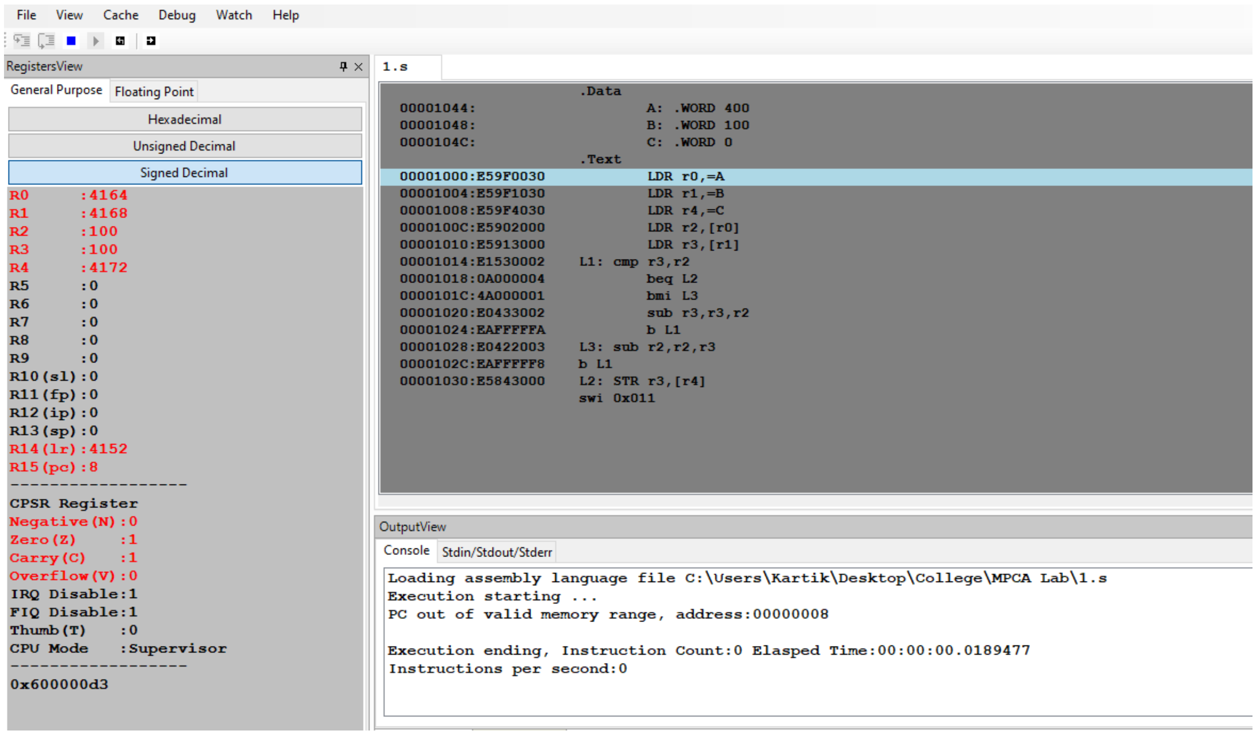
```
R0      :4164
R1      :4168
R2      :400
R3      :400
R4      :4172
R5      :0
R6      :0
R7      :0
R8      :0
R9      :0
R10(sl):0
R11(fp):0
R12(ip):0
R13(sp):0
R14(lr):4152
R15(pc):8
------------------
CPSR Register
Negative(N):0
Zero(Z)     :1
Carry(C)    :1
Overflow(V):0
IRQ Disable:1
FIQ Disable:1
Thumb(T)    :0
CPU Mode    :Supervisor
------------------
0x600000d3
```

```
                         .Data
00001044:                         A: .WORD 400
00001048:                         B: .WORD 400
0000104C:                         C: .WORD 0
                         .Text
00001000:E59F0030                 LDR r0,=A
00001004:E59F1030                 LDR r1,=B
00001008:E59F4030                 LDR r4,=C
0000100C:E5902000                 LDR r2,[r0]
00001010:E5913000                 LDR r3,[r1]
00001014:E1530002        L1: cmp r3,r2
00001018:0A000004                 beq L2
0000101C:4A000001                 bmi L3
00001020:E0433002                 sub r3,r3,r2
00001024:EAFFFFFA                 b L1
00001028:E0422003        L3: sub r2,r2,r3
0000102C:EAFFFFF8        b L1
00001030:E5843000        L2: STR r3,[r4]
                         swi 0x011
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0209442
Instructions per second:0
```

A=B



```
R0      :4164
R1      :4168
R2      :100
R3      :100
R4      :4172
R5      :0
R6      :0
R7      :0
R8      :0
R9      :0
R10(sl):0
R11(fp):0
R12(ip):0
R13(sp):0
R14(lr):4152
R15(pc):8
------------------
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    :Supervisor
------------------
0x600000d3
```

```
                      .Data
00001044:                     A: .WORD 400
00001048:                     B: .WORD 100
0000104C:                     C: .WORD 0
                      .Text
00001000:E59F0030             LDR r0,=A
00001004:E59F1030             LDR r1,=B
00001008:E59F4030             LDR r4,=C
0000100C:E5902000             LDR r2,[r0]
00001010:E5913000             LDR r3,[r1]
00001014:E1530002     L1: cmp r3,r2
00001018:0A000004             beq L2
0000101C:4A000001             bmi L3
00001020:E0433002             sub r3,r3,r2
00001024:EAFFFFFA             b L1
00001028:E0422003     L3: sub r2,r2,r3
0000102C:EAFFFFF8     b L1
00001030:E5843000     L2: STR r3,[r4]
                      swi 0x011
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0189477
Instructions per second:0
```

A>B

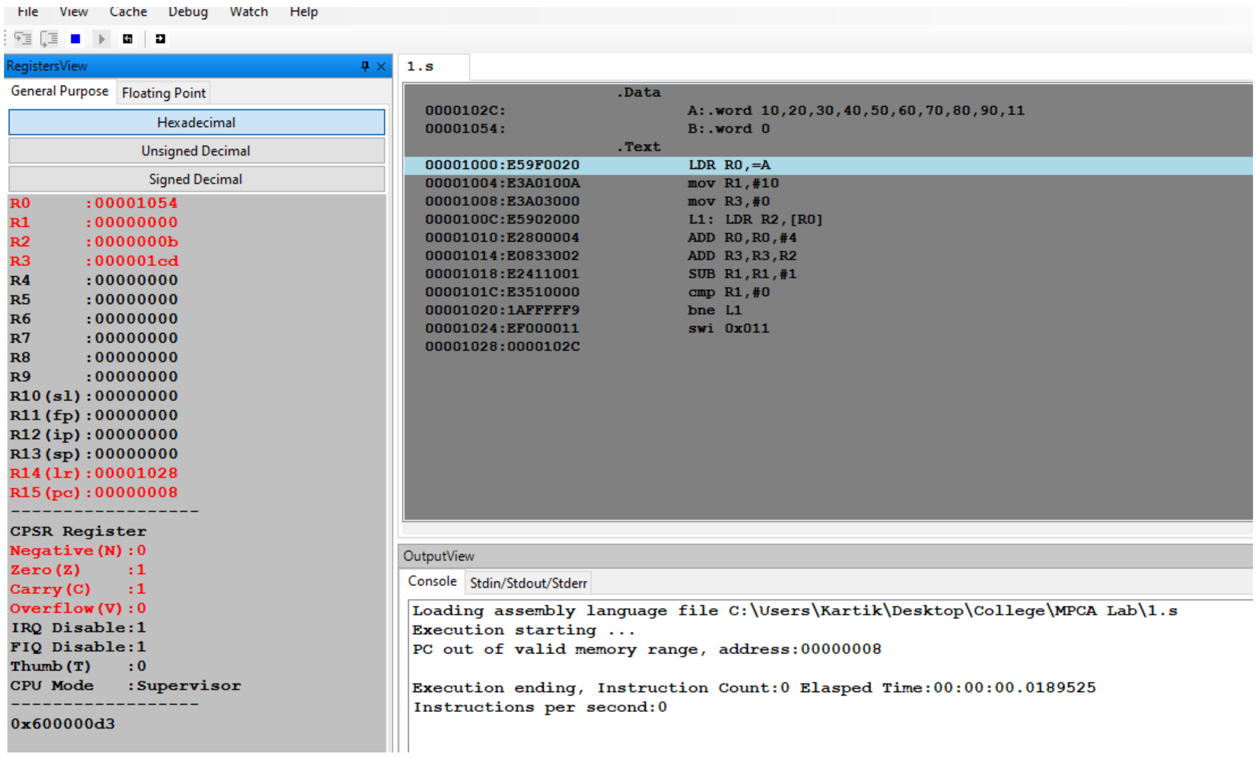
Week#____2_______Program Number: ____10a___

Write an ALP to add an array of ten 32 bit numbers from memory

1.Assembly Code

```
.Data
        A:.word 10,20,30,40,50,60,70,80,90,11
.Text
        LDR R0,=A
        mov R1,#10
        mov R3,#0
        L1: LDR R2,[R0]
        ADD R0,R0,#4
        ADD R3,R3,R2
        SUB R1,R1,#1
        cmp R1,#0
        bne L1
        swi 0x011
```

2.Output



```
R0       :00001054
R1       :00000000
R2       :0000000b
R3       :000001cd
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl):00000000
R11(fp):00000000
R12(ip):00000000
R13(sp):00000000
R14(lr):00001028
R15(pc):00000008
------------------
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    :Supervisor
------------------
0x600000d3
```

```
                        .Data
0000102C:                        A:.word 10,20,30,40,50,60,70,80,90,11
00001054:                        B:.word 0
                        .Text
00001000:E59F0020                LDR R0,=A
00001004:E3A0100A                mov R1,#10
00001008:E3A03000                mov R3,#0
0000100C:E5902000                L1: LDR R2,[R0]
00001010:E2800004                ADD R0,R0,#4
00001014:E0833002                ADD R3,R3,R2
00001018:E2411001                SUB R1,R1,#1
0000101C:E3510000                cmp R1,#0
00001020:1AFFFFF9                bne L1
00001024:EF000011                swi 0x011
00001028:0000102C
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0189525
Instructions per second:0
```

Week#____2_______Program Number: ____10b___

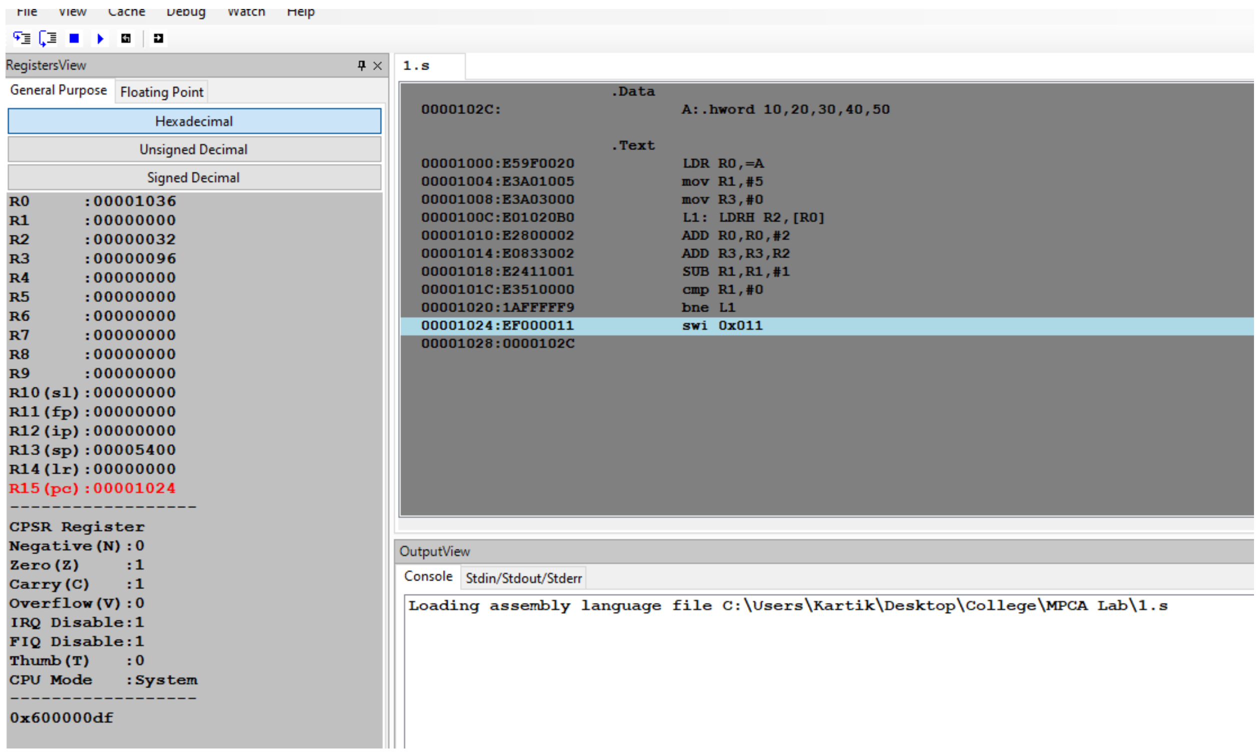
Write an ALP to add an array of five 16 bit numbers from memory

I. ARM Assembly Code

```
.Data
        A:.hword 10,20,30,40,50

.Text
        LDR R0,=A
        mov R1,#5
        mov R3,#0
        L1: LDRH R2,[R0]
        ADD R0,R0,#2
        ADD R3,R3,R2
        SUB R1,R1,#1
        cmp R1,#0
        bne L1
        swi 0x011
```

II. Output Screen Shot



```
R0       :00001036
R1       :00000000
R2       :00000032
R3       :00000096
R4       :00000000
R5       :00000000
R6       :00000000
R7       :00000000
R8       :00000000
R9       :00000000
R10(sl)  :00000000
R11(fp)  :00000000
R12(ip)  :00000000
R13(sp)  :00005400
R14(lr)  :00000000
R15(pc)  :00001024
-----------------
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
```

```
                          .Data
0000102C:                        A:.hword 10,20,30,40,50

                          .Text
00001000:E59F0020                LDR R0,=A
00001004:E3A01005                mov R1,#5
00001008:E3A03000                mov R3,#0
0000100C:E01020B0                L1: LDRH R2,[R0]
00001010:E2800002                ADD R0,R0,#2
00001014:E0833002                ADD R3,R3,R2
00001018:E2411001                SUB R1,R1,#1
0000101C:E3510000                cmp R1,#0
00001020:1AFFFFF9                bne L1
00001024:EF000011                swi 0x011
00001028:0000102C
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
```

Week#____2_______Program Number: ____10c___

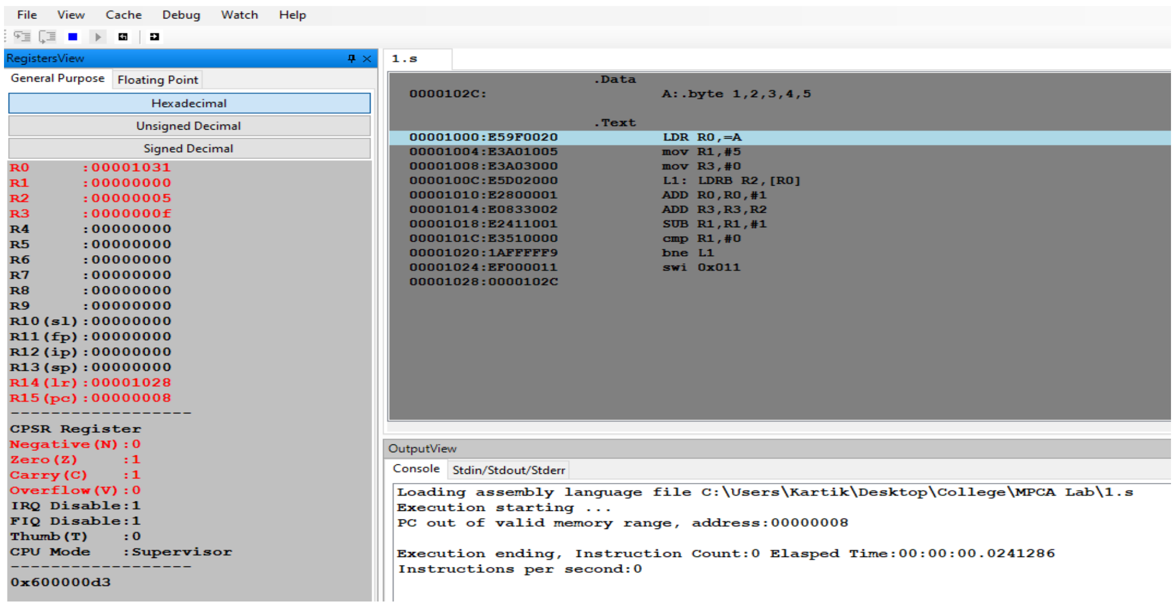
Write an ALP to add an array of five 8 bit numbers from memory

I. ARM Assembly Code

```
.Data
        A:.byte 1,2,3,4,5

.Text
        LDR R0,=A
        mov R1,#5
        mov R3,#0
        L1: LDRB R2,[R0]
        ADD R0,R0,#1
        ADD R3,R3,R2
        SUB R1,R1,#1
        cmp R1,#0
        bne L1
        swi 0x011
```

II. Output



```
R0      :00001031
R1      :00000000
R2      :00000005
R3      :0000000f
R4      :00000000
R5      :00000000
R6      :00000000
R7      :00000000
R8      :00000000
R9      :00000000
R10(sl) :00000000
R11(fp) :00000000
R12(ip) :00000000
R13(sp) :00000000
R14(lr) :00001028
R15(pc) :00000008
-------------------
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   :Supervisor
-------------------
0x600000d3
```

```
                          .Data
0000102C:                         A:.byte 1,2,3,4,5

                          .Text
00001000:E59F0020                 LDR R0,=A
00001004:E3A01005                 mov R1,#5
00001008:E3A03000                 mov R3,#0
0000100C:E5D02000                 L1: LDRB R2,[R0]
00001010:E2800001                 ADD R0,R0,#1
00001014:E0833002                 ADD R3,R3,R2
00001018:E2411001                 SUB R1,R1,#1
0000101C:E3510000                 cmp R1,#0
00001020:1AFFFFF9                 bne L1
00001024:EF000011                 swi 0x011
00001028:0000102C
```

```
Loading assembly language file C:\Users\Kartik\Desktop\College\MPCA Lab\1.s
Execution starting ...
PC out of valid memory range, address:00000008

Execution ending, Instruction Count:0 Elasped Time:00:00:00.0241286
Instructions per second:0
```