SAMPLE PROGRAM

① ADD instruction using immediate operands

Program

```
AREA  ADDER, CODE, READONLY

 mov r0, #11

 mov r1, #12
 ADD r2, r0, r1

back b back

  END
```

OUTPUT

Before Execution

Register content

R1: 0X00000000

R2: 0x00 00 0000

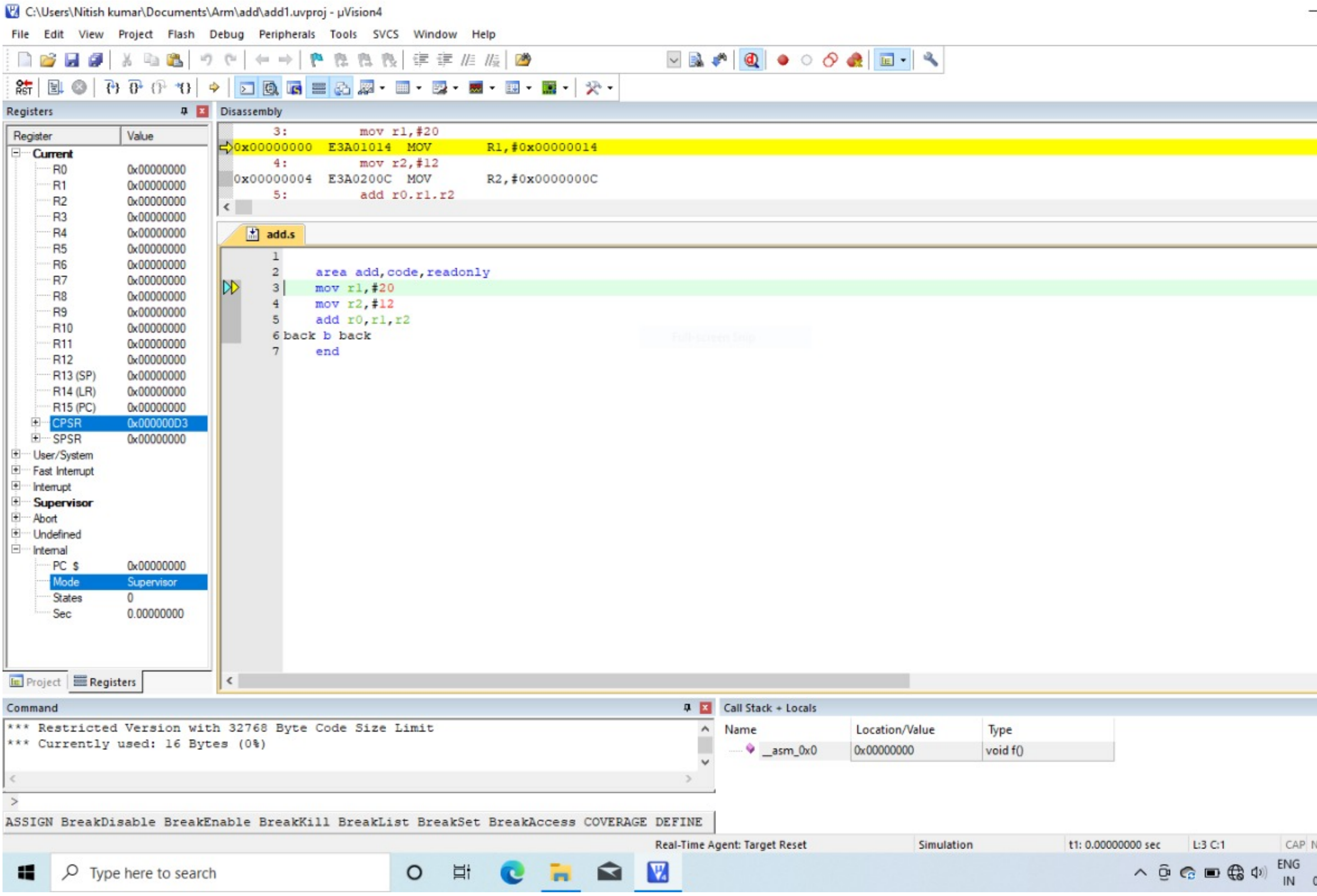
R0: 0x00000000

After Execution

R0: 0x0000000B $[(11)_{10} = (B)$

R1: 0x0000000C $[(12)_{10} = (C)_{16}$

R2: 0x00000017 $[(23)_{10} = (17)$


C:\Users\Nitish kumar\Documents\Arm\add\add1.uvproj - µVision4
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Disassembly
add.s
Project
Registers
Command
Call Stack + Locals
Real-Time Agent: Target Reset
Simulation
t1: 0.00000000 sec
L:3 C:1
CAP
Type here to search
ENG
IN

```
       3:          mov r1,#20
0x00000000  E3A01014  MOV       R1,#0x00000014
       4:          mov r2,#12
0x00000004  E3A0200C  MOV       R2,#0x0000000C
       5:          add r0.r1.r2
```

```
    area add,code,readonly
    mov r1,#20
    mov r2,#12
    add r0,r1,r2
back b back
    end
```

Register	Value
Current	
R0	0x00000000
R1	0x00000000
R2	0x00000000
R3	0x00000000
R4	0x00000000
R5	0x00000000
R6	0x00000000
R7	0x00000000
R8	0x00000000
R9	0x00000000
R10	0x00000000
R11	0x00000000
R12	0x00000000
R13 (SP)	0x00000000
R14 (LR)	0x00000000
R15 (PC)	0x00000000
CPSR	0x000000D3
SPSR	0x00000000
User/System	
Fast Interrupt	
Interrupt	
Supervisor	
Abort	
Undefined	
Internal	
PC $	0x00000000
Mode	Supervisor
States	0
Sec	0.00000000

```
*** Restricted Version with 32768 Byte Code Size Limit
*** Currently used: 16 Bytes (0%)
```

```
>
ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess COVERAGE DEFINE
```

Name	Location/Value	Type
_asm_0x0	0x00000000	void f()

(2) PROGRAM TO FIND ONE COMPLEMENT OF DATA STORED IN A LOCATION.

```
    AREA  ONES, CODE, READONLY
    ENTRY
  START
        LDR  r1,= Value
        LDR  r2, [r1]
        MVN  r3, r2
        LDR  r1, = result
        STR  r3,[r1]
   back  b back
   Value dcd   0X00
          AREA  DATA1, DATA, READWRITE
  result dcd 0X0
    END
```

OUTPUT

Before Execution

r1 : 0X 00 000000

r2 : 0X00 00 0000

r3 : 0X 00 00 0000

After execution

Address of location value

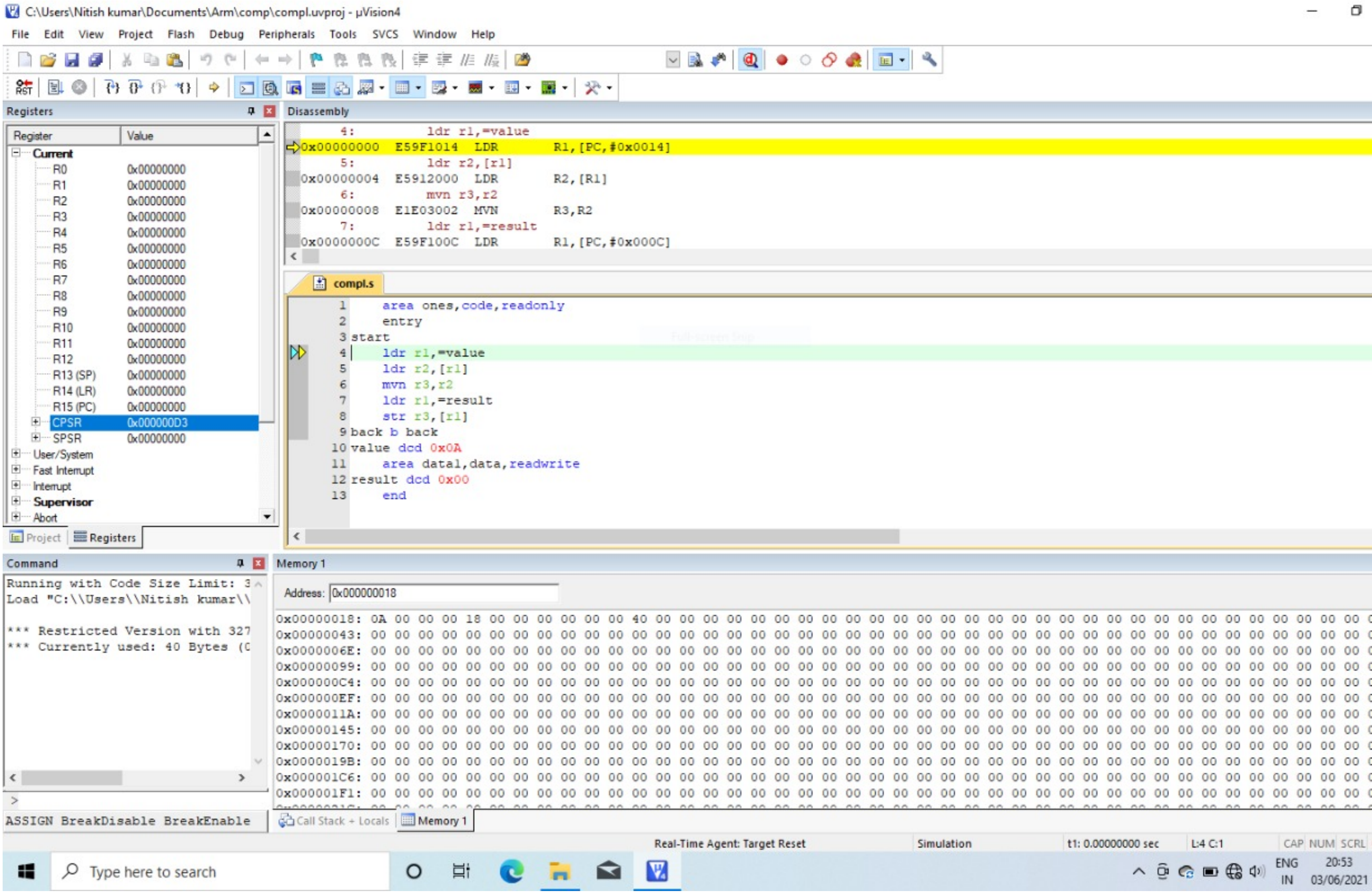
r1 : 0X00000000

r2 : 0x00000000 [$r_2 = r_1$]

r3 : 0XFFFFFFFF [$r_3 = \bar{r}_2$]

r1 : 0X40000000 ← Address of location result

[result] : FFFFFFFF


C:\Users\Nitish kumar\Documents\Arm\comp\compl.uvproj - µVision4
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Disassembly
compl.s
Command
Memory 1
Project
Registers
Call Stack + Locals
Memory 1
Type here to search
ENG
IN
20:53
03/06/2021

```
Register        Value
Current
  R0            0x00000000
  R1            0x00000000
  R2            0x00000000
  R3            0x00000000
  R4            0x00000000
  R5            0x00000000
  R6            0x00000000
  R7            0x00000000
  R8            0x00000000
  R9            0x00000000
  R10           0x00000000
  R11           0x00000000
  R12           0x00000000
  R13 (SP)      0x00000000
  R14 (LR)      0x00000000
  R15 (PC)      0x00000000
  CPSR          0x000000D3
  SPSR          0x00000000
User/System
Fast Interrupt
Interrupt
Supervisor
Abort
```

```
      4:          ldr r1,=value
0x00000000  E59F1014  LDR       R1,[PC,#0x0014]
      5:          ldr r2,[r1]
0x00000004  E5912000  LDR       R2,[R1]
      6:          mvn r3,r2
0x00000008  E1E03002  MVN       R3,R2
      7:          ldr r1,=result
0x0000000C  E59F100C  LDR       R1,[PC,#0x000C]
```

```
    area ones,code,readonly
    entry
start
    ldr r1,=value
    ldr r2,[r1]
    mvn r3,r2
    ldr r1,=result
    str r3,[r1]
back b back
value dcd 0x0A
    area data1,data,readwrite
result dcd 0x00
    end
```

```
Running with Code Size Limit: 3
Load "C:\\Users\\Nitish kumar\\

*** Restricted Version with 327
*** Currently used: 40 Bytes (C
```

```
>
ASSIGN BreakDisable BreakEnable
```

Address: 0x000000018

```
0x00000018: 0A 00 00 00 18 00 00 00 00 00 00 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00000043: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0000006E: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00000099: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x000000C4: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x000000EF: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0000011A: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00000145: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00000170: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0000019B: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x000001C6: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x000001F1: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Real-Time Agent: Target Reset   Simulation   t1: 0.00000000 sec   L:4 C:1   CAP NUM SCRL