PES UNIVERSITY

Microprocessor & Computer Architecture

MPCA-Laboratory

UE20CS252

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Programs

1. Write a program in ARM7TDMI-ISA to copy a block of N data items from Location A to Location B.
   a.Use Half word(.Hword directive)

   NOTEPAD FILE:

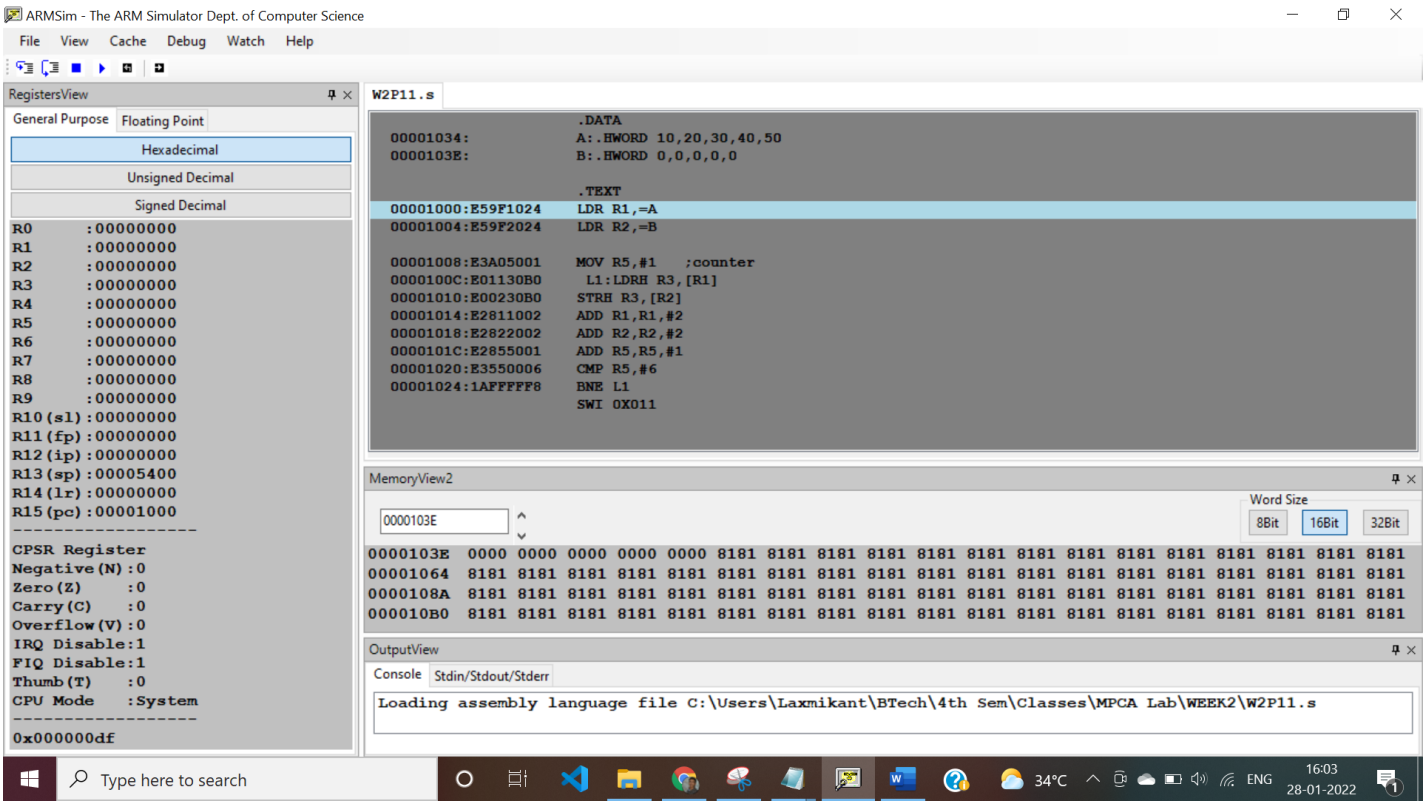
W2P11.s - Notepad

File Edit Format View Help

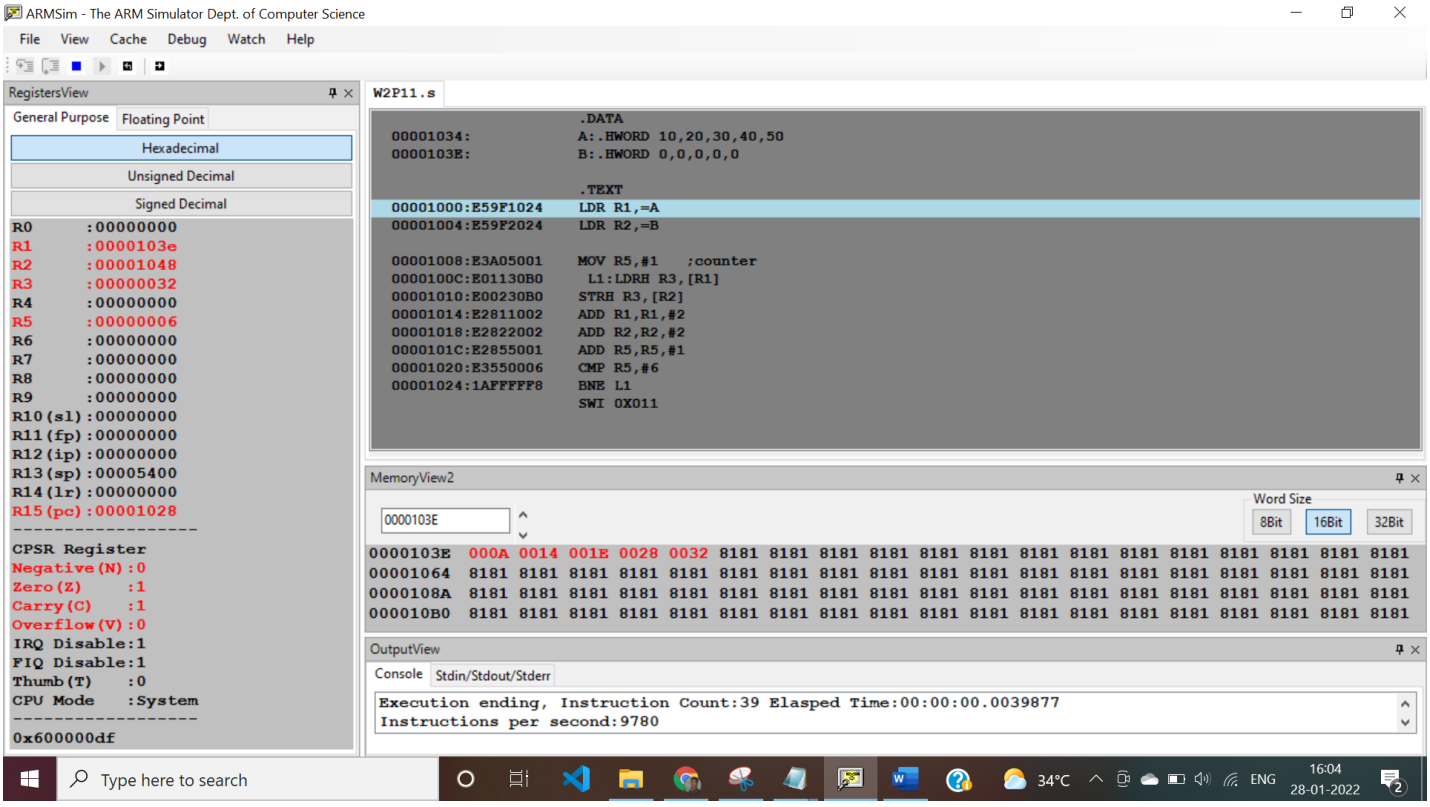
```
.DATA
A:.HWORD 10,20,30,40,50
B:.HWORD 0,0,0,0,0

.TEXT
LDR R1,=A
LDR R2,=B

MOV R5,#1   ;counter
 L1:LDRH R3,[R1]
STRH R3,[R2]
ADD R1,R1,#2
ADD R2,R2,#2
ADD R5,R5,#1
CMP R5,#6
BNE L1
SWI 0X011
```

OUTPUT SCREENSHOT:

Before execution:



After execution:



b.Use Byte wise (.Byte directive)

NOTEPAD FILE:

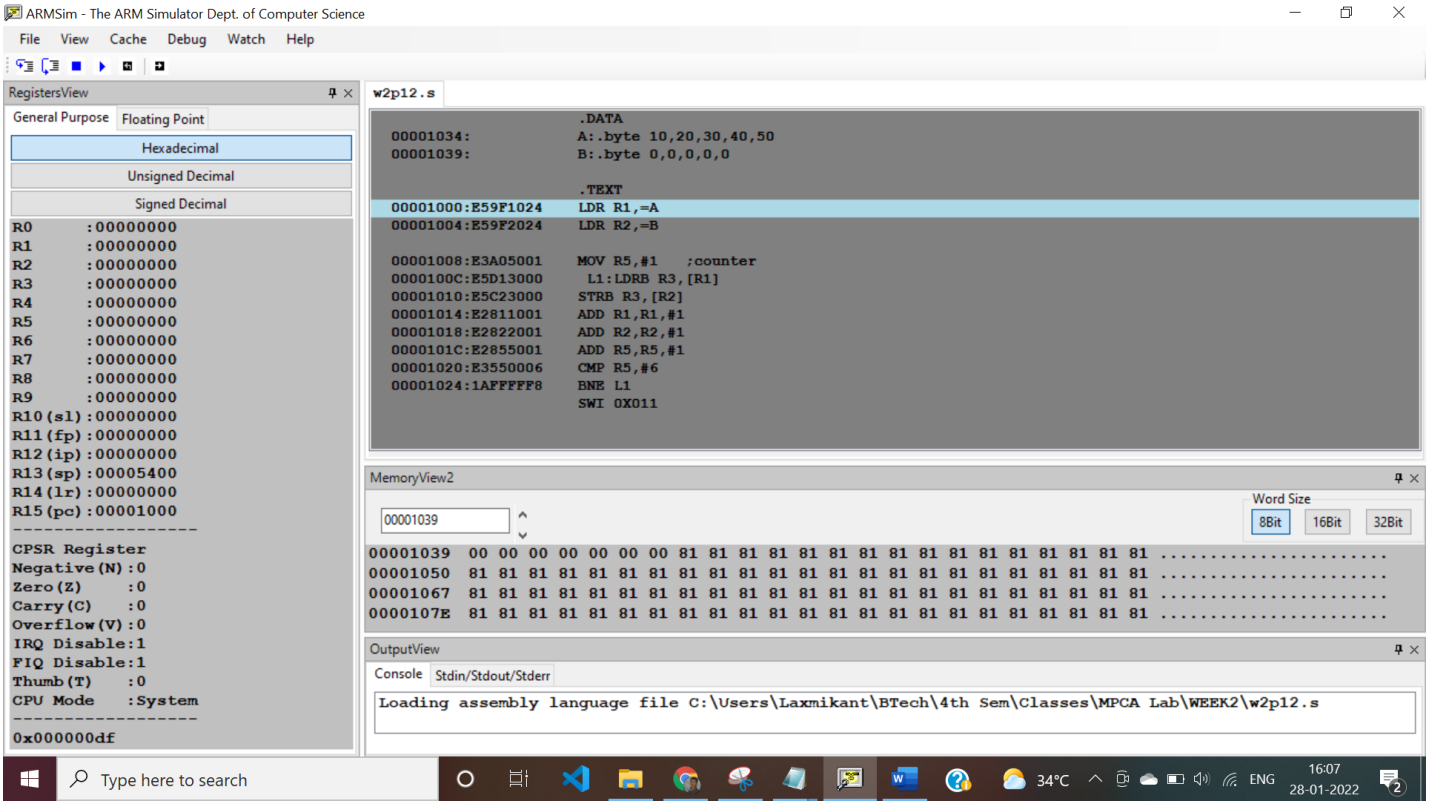
w2p12.s - Notepad

File Edit Format View Help

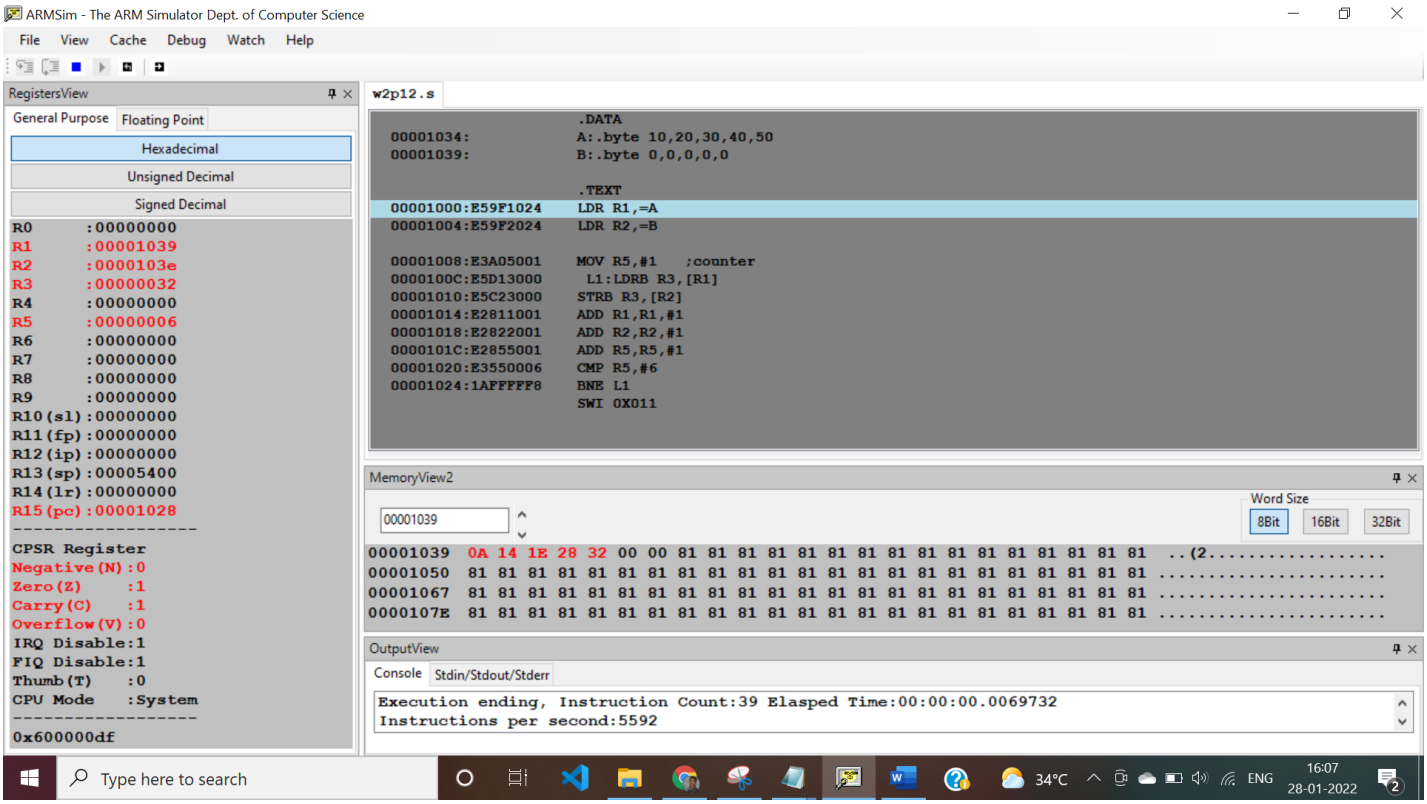
```
.DATA
A:.byte 10,20,30,40,50
B:.byte 0,0,0,0,0

.TEXT
LDR R1,=A
LDR R2,=B

MOV R5,#1   ;counter
 L1:LDRB R3,[R1]
STRB R3,[R2]
ADD R1,R1,#1
ADD R2,R2,#1
ADD R5,R5,#1
CMP R5,#6
BNE L1
SWI 0X011
```

OUTPUT SCREENSHOT:

Before execution:



After execution:



2. Write a program in ARM7TDMI-ISA to find the sum of N data items in the memory. Store the result in the memory location.
   a.Use Half word(.Hword directive)

NOTEPAD FILE:

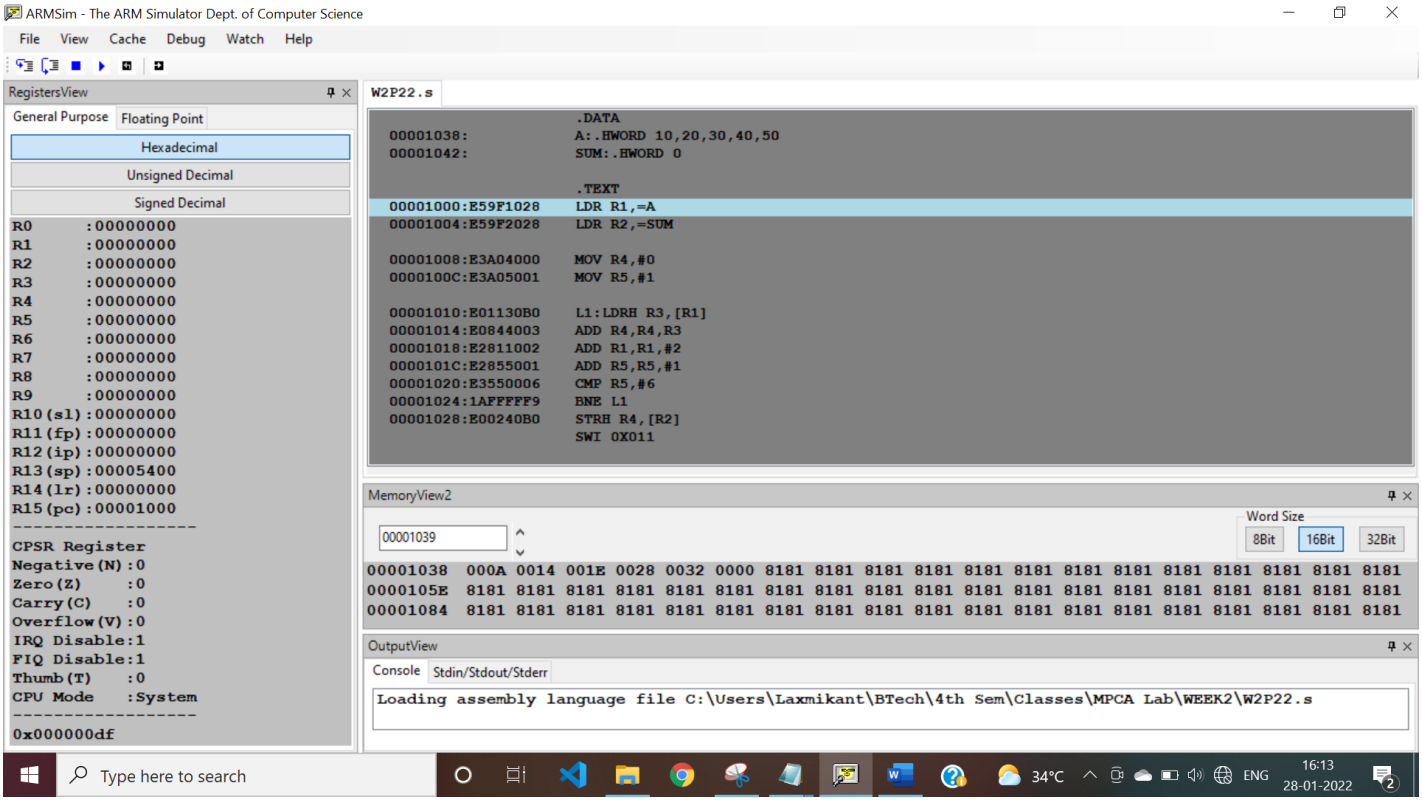
W2P22.s - Notepad

File Edit Format View Help

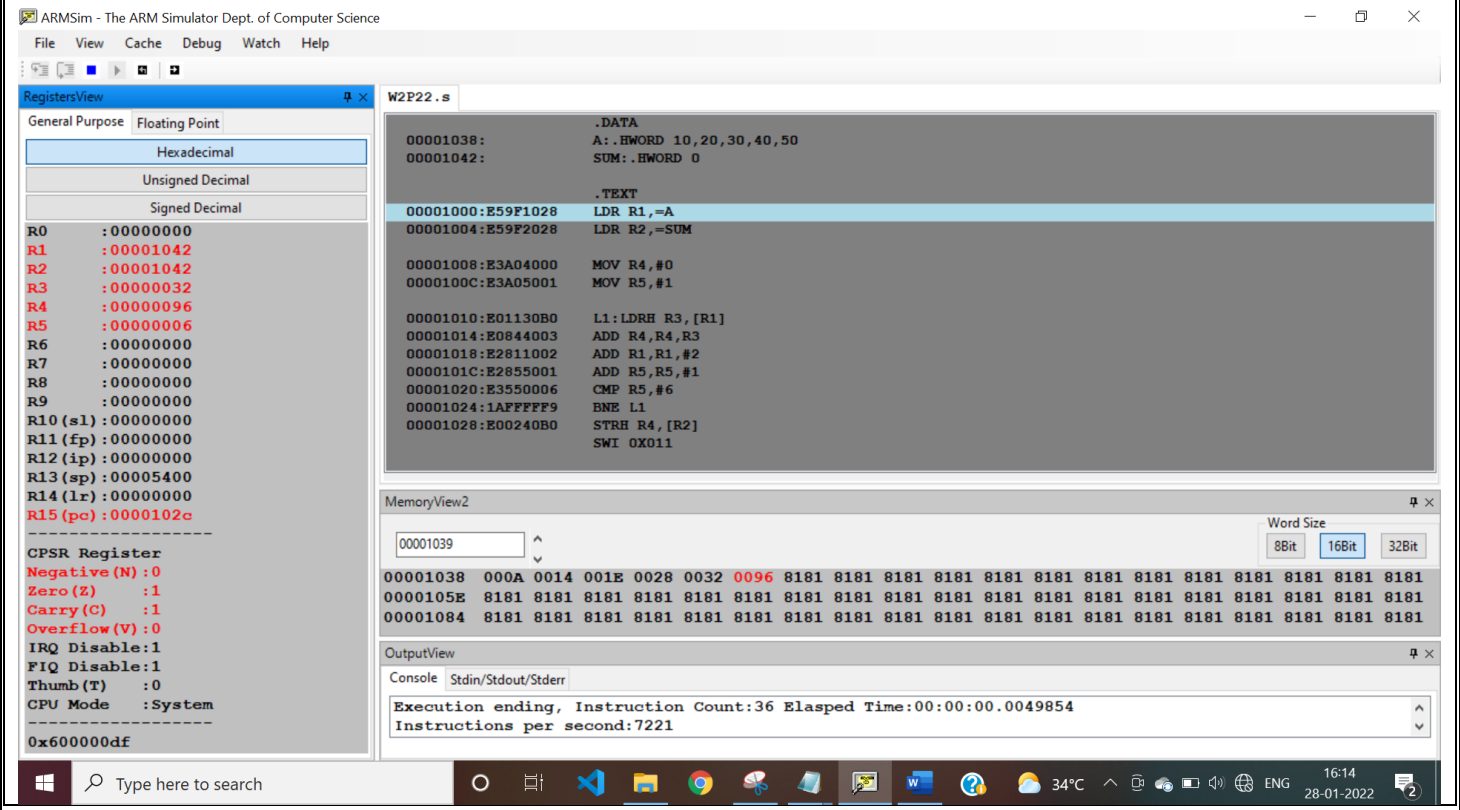
```
.DATA
A:.HWORD 10,20,30,40,50
SUM:.HWORD 0

.TEXT
LDR R1,=A
LDR R2,=SUM

MOV R4,#0
MOV R5,#1

L1:LDRH R3,[R1]
ADD R4,R4,R3
ADD R1,R1,#2
ADD R5,R5,#1
CMP R5,#6
BNE L1
STRH R4,[R2]
SWI 0X011
```

OUTPUT SCREENSHOT:

Before execution:



After execution:



b. Use Byte wise (.Byte directive)

NOTEPAD FILE:

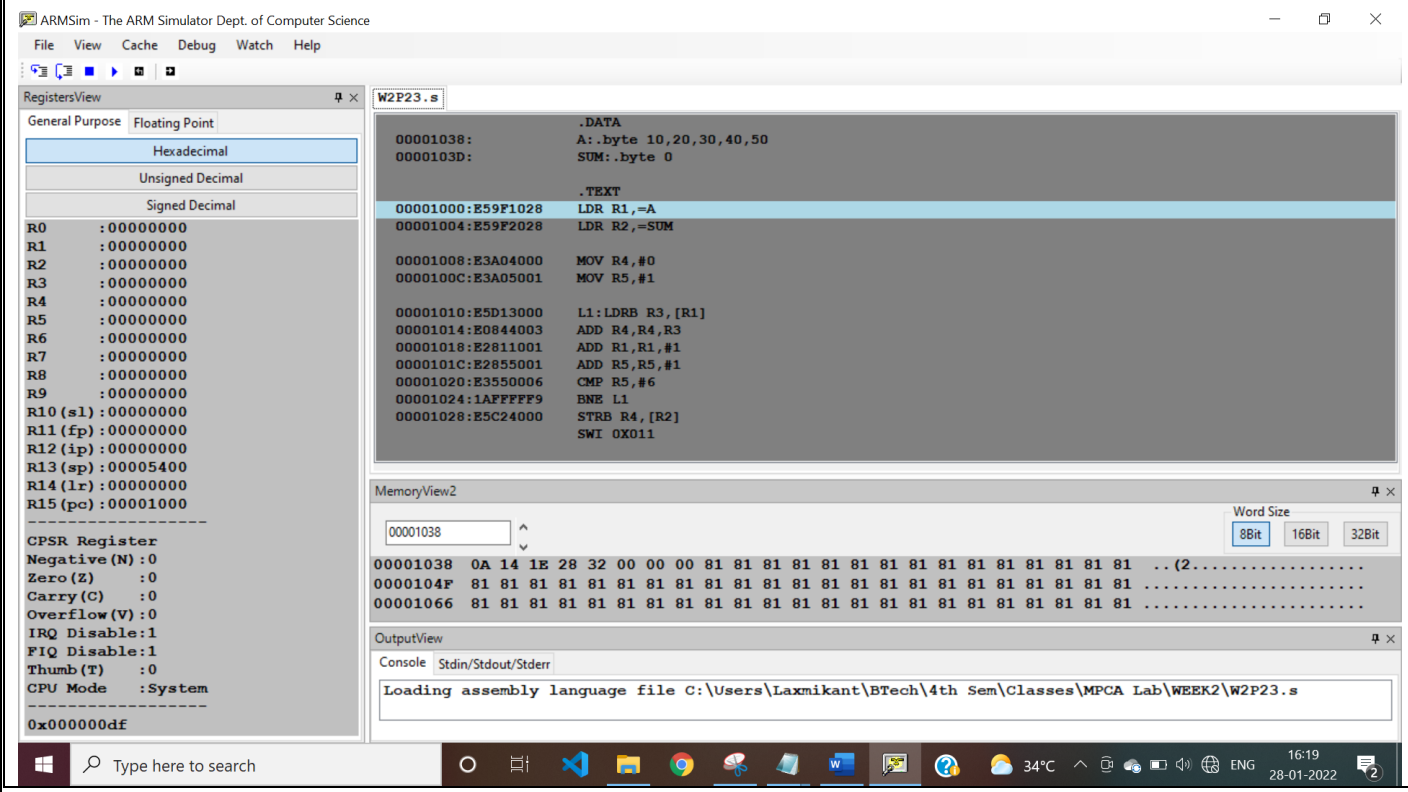
W2P23.s - Notepad

File Edit Format View Help

```
.DATA
A:.byte 10,20,30,40,50
SUM:.byte 0

.TEXT
LDR R1,=A
LDR R2,=SUM

MOV R4,#0
MOV R5,#1

L1:LDRB R3,[R1]
ADD R4,R4,R3
ADD R1,R1,#1
ADD R5,R5,#1
CMP R5,#6
BNE L1
STRB R4,[R2]
SWI 0X011
```

OUTPUT SCREENSHOT:

Before execution:



After execution: