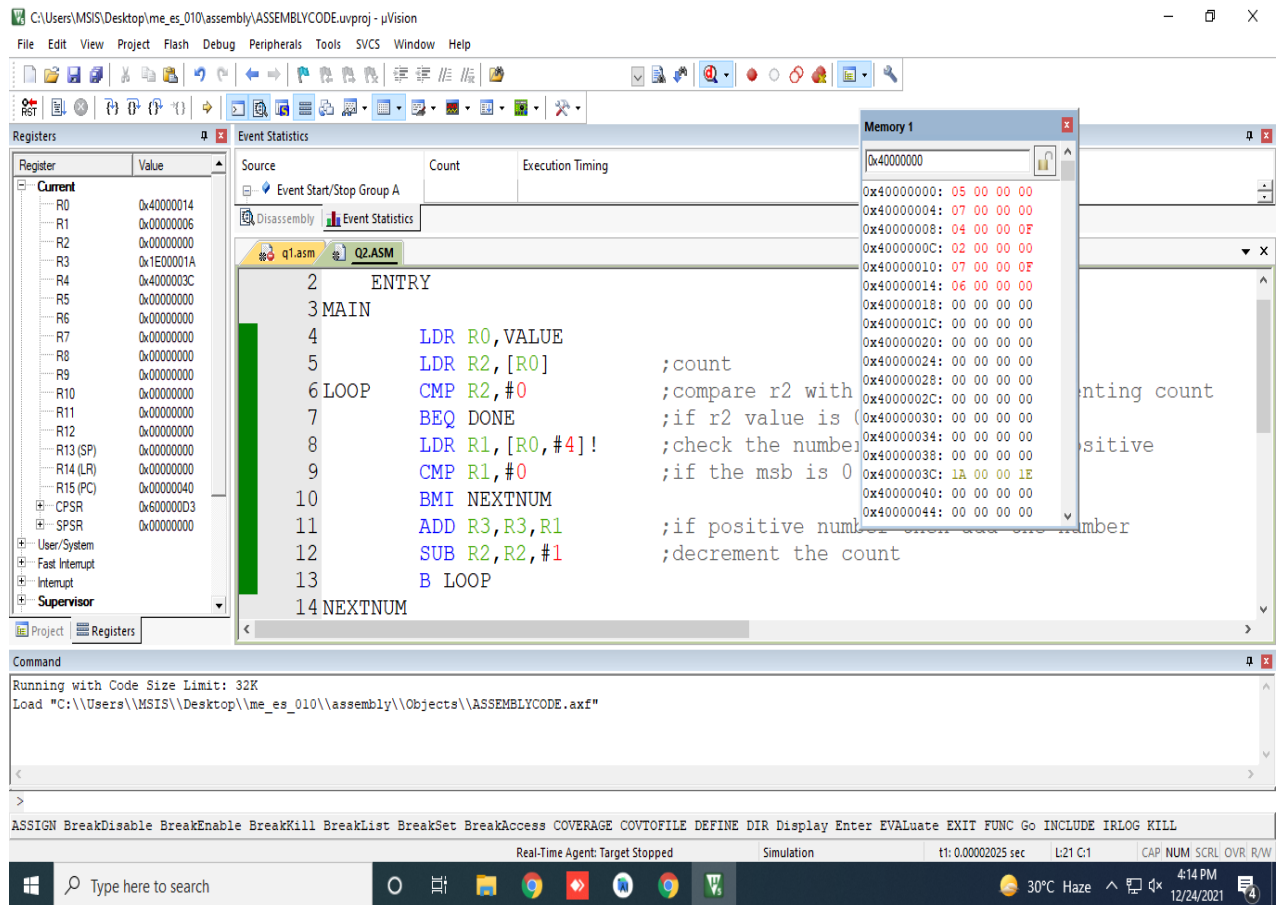


ACA lab test programs:

```
        AREA NIBBLE_ADD, CODE, READONLY
        ENTRY
MAIN
        LDR R0, VALUE           ; load the value to reg r0
        LDR R1, [R0]           ; load the contents of r0 to r1
        MOV R2, #0X0000000F     ; masking nibble0
        MOV R3, #0X000F0000     ; masking nibble1
        AND R4, R1, R2         ; and r1 with the masked value
        AND R5, R1, R3         ; and r3 with the masked value
        LSR R5, R5, #16        ; shift right operation
        ADD R6, R4, R5         ; adding the masked values
        LDR R0, RESULT         ; loading the result to r0
        STR R6, [R0]           ; store the contents of r0 to r6
        SVC &11
VALUE DCD &40000004           ; assigning value
RESULT DCD &4000000C
        END
```



AREA ADD_ARRAY, CODE, READONLY

ENTRY

MAIN

LDR R0, VALUE

LDR R2, [R0] ;count

LOOP CMP R2, #0 ; compare r2 with 0 to while decrementing count

BEQ DONE ; if r2 value is 0 then stop

LDR R1, [R0, #4]! ; check the number if negative or positive

CMP R1, #0 ; if the msb is 0 then add

BMI NEXTNUM

ADD R3, R3, R1 ; if positive number then add the number

SUB R2, R2, #1 ; decrement the count

B LOOP

NEXTNUM

SUB R2, R2, #1 ; if the msb is 1 then just decrement the count

CMP R2, #0

BEQ DONE

BNE LOOP

DONE LDR R4, RESULT

STR R3, [R4]

STOP B STOP

VALUE DCD &40000000

RESULT DCD &4000003C

END

