1. Assume a 32-bit number in 40000004H. Add nibble4 and nibble0 and store the result in 4000000CH.

AREA PROGRAM, CODE, READONLY

ENTRY

Main

LDR R0,value ;load the value to the register R0

LDR R1,[R0] ;load the content of R0 to R1 register

LDR R2,mask1 ;load the value of to R2 register

AND R3,R1,R2 ;mask the value of R1 using R2 and store it in R3 register

MOV R4,R1,LSR #16 ;logical right shift 16 bit of R1 data and move it to R4 register

AND R5,R4,R2 ;mask the value of R4 using R2 and store it in R5 register

ADD R6,R5,R3 ;add the registers R5 and R3 and store it in R6 register

LDR R7,result ;load the value of result to R7 register

STR R6,[R7] ;store the data present in R6 register to the address of R7 register

SVC &11

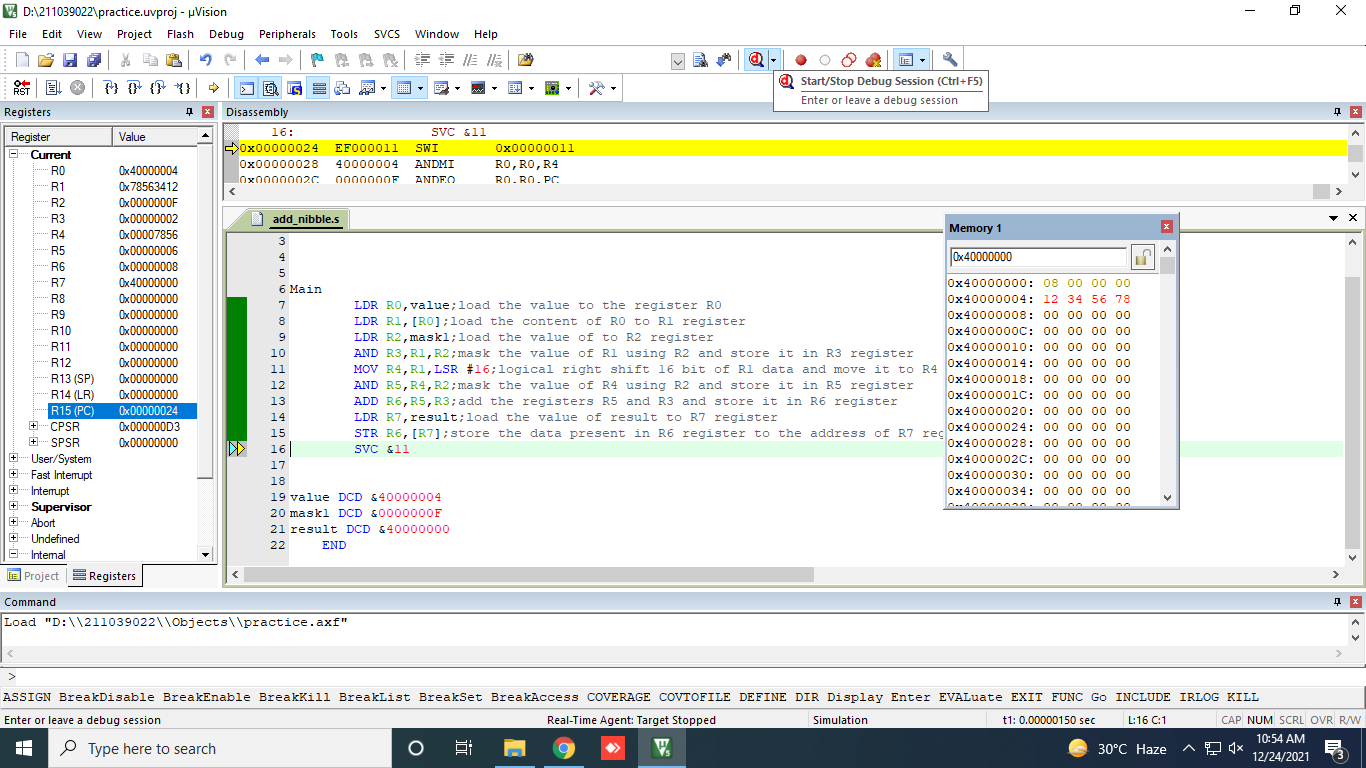
value DCD &40000004

mask1 DCD &0000000F

result DCD &40000000

END

Result:



2)  Consider an array of number present from 40000000H. Add only if the numbers are positive. 40000000H has the count of the array.

AREA ADD\_ARRAY,CODE,READONLY   
ENTRY   
MAIN   
LDR R0,TABLE ; In the table first value is count followed by array elements   
LDR R2,[R0] ;Load the count   
EOR R3,R3,R3 ;Clear Register R3 for storing sum of positive elements   
LOOP   
CMP R2,#0  ; Compare count with Zero   
BEQ DONE   
LDR R1,[R0,#4]!  ;Load the array elements to R1 register   
CMP R1,#0  ;Compare R1 register content with 0   
BMI LOOP1  ;If the number is negative then Branch to Loop1 and   
;decrement the count   
;BMI - Branch if minus ; It checks the Negative Flag if it is set Branch to Loop1   
ADD R3,R3,R1  ;If the number is positive Add it with R3 register content   
SUB R2,R2,#1  ;Decrement the count   
B LOOP   
LOOP1   
SUB R2,R2,#1   
CMP R2,#0   
BEQ DONE   
BNE LOOP   
DONE LDR R4,RESULT   
STR R3,[R4]  ;Load the Result in R3 to desired location   
STOP B STOP   
   
TABLE DCD &40000000   
RESULT DCD &4000003C   
END

Result:

