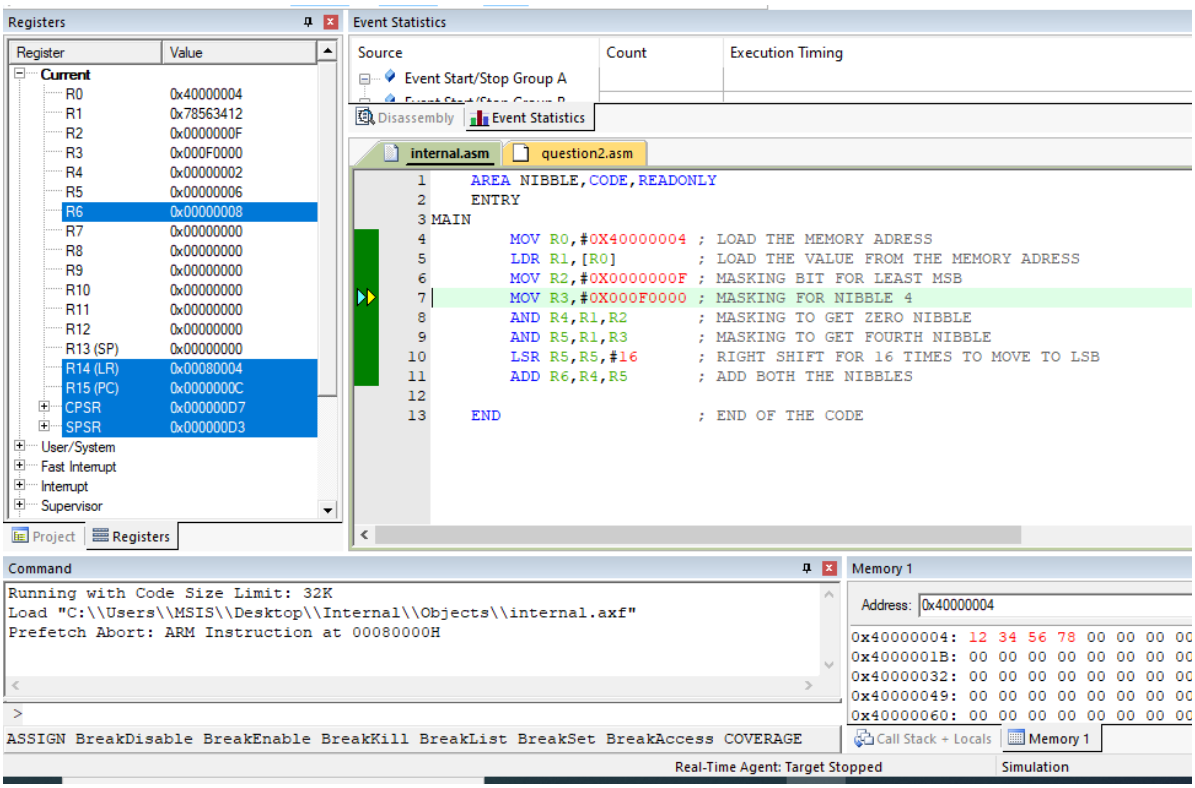
Q1.

```
   AREA NIBBLE,CODE,READONLY
   ENTRY
MAIN
      MOV R0,#0X40000004 ; LOAD THE MEMORY ADRESS
      LDR R1,[R0]                ; LOAD THE VALUE FROM THE MEMORY ADRESS
      MOV R2,#0X0000000F       ; MASKING BIT FOR LEAST MSB
      MOV R3,#0X000F0000       ; MASKING FOR NIBBLE 4
      AND R4,R1,R2               ; MASKING TO GET ZERO NIBBLE
      AND R5,R1,R3               ; MASKING TO GET FOURTH NIBBLE
      LSR R5,R5,#16              ; RIGHT SHIFT FOR 16 TIMES TO MOVE TO LSB
      ADD R6,R4,R5               ; ADD BOTH THE NIBBLES

   END                           ; END OF THE CODE
```



Q2.

```
  AREA ADD_ARRAY,CODE,READONLY
   ENTRY
MAIN
      LDR R0,VALUE              ;LOAD THE MEMORY ADDRESS TO R0
      LDR R2,[R0]               ;LOAD THE CONTENT OF THE MEMORY ADRESS
      MOV R3,#0X00              ;CLEAR THE REQISTER TO STORE THE RESULT
JUMP    CMP R2,#0               ;COMPARE THE COUNTER VALUE WITH 0
      BEQ EXIT                  ;IF IT IS EQUAL TO ZERO JUMP TO THE LABEL EXIT
      LDR R1,[R0,#4]!           ;LOAD THE CONTENT OF R0 TO R0 AND ALSO INCREMENT THE ADRESS
BY 32BITS
      CMP R1,#0                 ;CHECK THE VALUE OF R1 WHETHER IT IS POSITIVE OR NEGITIVE
VALUE?
      BMI NEXT                  ;IF THE VALUE IS NEGITIVE INGORE THE VALUE AND JUMP TO NEXT
                                VALUE, THIS CAN BE DONE BY CHECK THE N FLAG IN CPSR.
      ADD R3,R3,R1              ;IF VALUE IS POSITIVE ADD THE VALUE WITH PREVIOUS
      ADD R2,R2,#-1             ;DECREMENT THE COUNTER BY ONE NUMBER
      B JUMP                    ;REPEAT THE LOOP IF COUNTER VALUE IS NOT EQUAL TO ZERO;

;IF VALUE IS NEGATIVE THIS LOOP WILL EXCECUTE

NEXT
      SUB R2,R2,#1              ;DECREMENT THE COUNTER BY ONE NUMBER
      CMP R2,#0                 ;COMPARE THE COUNTER VALUE WITH ZERO
      BEQ EXIT                  ;IF IT IS EQUAL TO ZERO EXIT THE LOOP
      BNE JUMP                  ;IF COUNTER VALUE IS NOT EQUAL TO ZERO JUMP BACK AND REPEAT
THE PROCESS
EXIT LDR R4,RESULT              ;LOAD 40000000 TO R4
    STR R3,[R4]                 ;SOTRE THE RESULT IN MEMORY ADDRESS 40000000
```

STOP B STOP **;TERMINATION OF THE PROCESS**

VALUE DCD &40000000 **;ASSIGNING 40000000 TO VARIABLE VALUE AND ACT AS A POINTER**

RESULT DCD &4000003C **;ASSIGNING 40000003 TO VARIABLE VALUE**

END **;END OF THE CODE**