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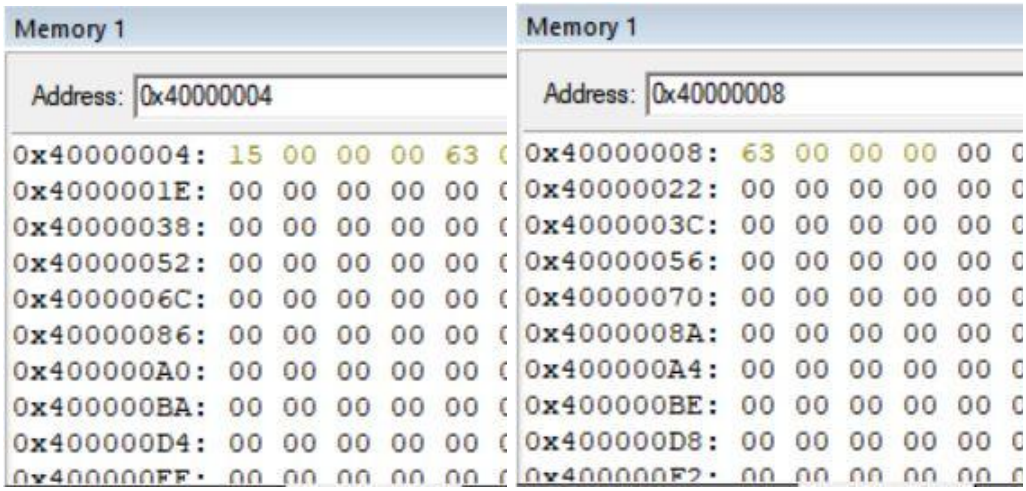
ECE425#16103
Project 1

## Program Assembly Code:

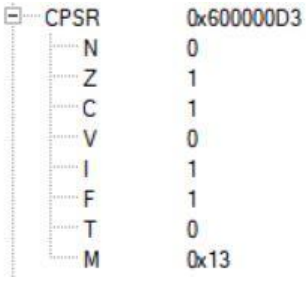
```
        AREA Reset, CODE, Readonly
ENTRY
;declarations
ADD1  EQU 0x40000004
ADD2  EQU 0x40000008
COUNT RN R5
COUN2 RN R6
MAX   RN R7
MIN   RN R8
POINT RN R9
POIN2 RN R10
NEXT  RN R11
NEX2  RN R12
                LDR R1,=ADD1
                LDR R2,=ADD2

                MOV COUNT, #30
                MOV COUN2, #30

                MOV MAX,#0
                MOV MIN,#100

                LDR POINT ,=GRADES
                LDR POIN2 ,=GRADES

;max loop
AGAIN   LDR NEXT,[POINT]
                CMP MAX, NEXT

                BHS CNTU

                MOV MAX, NEXT
CNTU    ADD POINT,POINT, #4

                SUBS COUNT,COUNT,#1
                BNE AGAIN

;min loop
AGAI2   LDR NEX2,[POIN2]
                CMP MIN, NEX2

                BLO CNT2

                MOV MIN, NEX2
CNT2    ADD POIN2,POIN2, #4

                SUBS COUN2,COUN2,#1
                BNE AGAI2

                STR MIN, [R1]
                STR MAX, [R2]

GRADES  DCD 67,45,88,90,89,21,98,85,55,34,67,87,77,99,23,44,66,77,88,99,67,83,82,64,37,98,91,73,58,66

stop B stop
        END
```

**SRAM Memory Locations:**



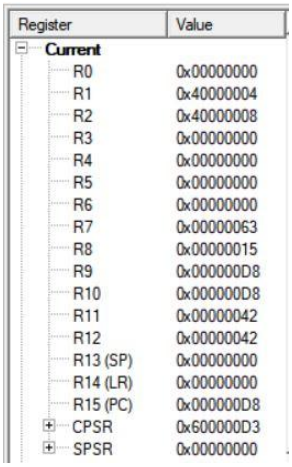

Minimum value stored in SRAM location 0x40000004 and maximum value is stored in SRAM location 0x40000008

**CPSR Register:**




The CPSR register after execution of the program

**Used Registers after Code Execution:**




Registers used after the program execution. I used R1 and R2 to hold the SRAM locations where the min and max values would be stored. R7 and R8 hold the min and max values that get changed by the loop. R5, R6 are counters for the two loops. R9, R10 are pointers for the loops. R11, R12 store the next value in the list to use a comparison for the loops.