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

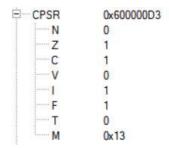
END

SRAM Memory Locations:

Memory 1	Memory 1												
Address: 0x4000	0004						Address: 0x4000	0008					
0x40000004:	15	00	00	00	63	(0x40000008:	63	00	00	00	00	C
0x4000001E:	00	00	00	00	00	(0x40000022:	00	00	00	00	00	0
0x40000038:	00	00	00	00	00	(0x4000003C:	00	00	00	00	00	0
0x40000052:	00	00	00	00	00	(0x40000056:	00	00	00	00	00	0
0x4000006C:	00	00	00	00	00	(0x40000070:	00	00	00	00	00	0
0x40000086:	00	00	00	00	00	(0x4000008A:	00	00	00	00	00	0
0x400000A0:	00	00	00	00	00	(0x400000A4:	00	00	00	00	00	0
0x400000BA:	00	00	00	00	00	(0x400000BE:	00	00	00	00	00	0
0x400000D4:	00	00	00	00	00	(0x400000D8:	00	00	00	00	00	0
O¥400000FF.	00	00	nn	00	00	1	0x400000F2 .	00	00	00	00	00	0

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:

Register	Value		
Current			
R0	0x00000000		
R1	0x40000004		
R2	0x40000008		
R3	0x00000000		
R4	0x00000000		
R5	0x00000000		
R6	0x00000000		
R7	0x00000063		
R8	0x00000015		
R9	0x000000D8		
R10	0x000000D8		
R11	0x00000042		
R12	0x00000042		
R13 (SP)	0x00000000		
R14 (LR)	0x00000000		
R15 (PC)	0x00000D8		
	0x600000D3		
⊕ SPSR	0x00000000		

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.