Assignment #4.5

Problem: Consider four sets of integer numbers stored in the SRAM, with the starting addresses and number of integers specified as follows:
Set 1: Starting at address 0x2FF20000, contains 10 integers.
Set 2: Starting at address 0x2FF20100, contains 25 integers.
Set 3: Starting at address 0x2FF20700, contains 40 integers.
Set 4: Starting at address 0x2FF20A00, contains 30 integers.
Determine the largest value from each set and store these values sequentially in memory, starting at address 0x2FF20F00.
Solution:

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%Initializes the result address
LDR R2,#0X2FF20F00

% For set 1: Starting at address 0x2FF20000, contains 10 integers.
LDR R0,#0x2FF20000
MOV R1,#0XA
BL MAX_VALUE
STR R3,[R2],#4

%For Set 2: Starting at address 0x2FF20100, contains 25 integers.
LDR R0,#0x2FF20100
MOV R1,#0X19
BL MAX_VALUE
STR R3,[R2],#4

%For Set 3: Starting at address 0x2FF20700, contains 40 integers.
LDR R0,#00x2FF20700
MOV R1,#0X28
BL MAX_VALUE
STR R3,[R2],#4

%For Set 4: Starting at address 0x2FF20A00, contains 30 integers.
LDR R0,#0x2FF20A00
MOV R1,#0X1E
BL MAX_VALUE
STR R3,[R2],#4

MAX_VALUE:
    LDR R3,[R0],#4
    MOV R4,#0X00
    BRANCH1:
        LDR R5,[R0],#4
        CMP R5,R3
        IT GT
        MOVGT R3,R5
```

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36          ADD R4,R4,#1
37          CMP R4,R1
38          IT LT
39          BLT BRANCH1
40      BX LR
```