Amrita Vishwa Vidyapeetham
Amrita School of Computing, Bangalore
Department of Computer Science and Engineering

19CSE303 Embedded Systems
Lab Worksheet - 4
Array Of Numbers

Exercise Problems

1. Write a ARM assembly language program to count the number of negative numbers in an array of 32-bit numbers stored in memory location "num" and the length of the array is stored in memory location "len". Store the final count in a memory location "result".

```
 AREA data, DATA, READONLY
num dcd 1, 2, 3, -4
len dcd 4
 AREA data1, DATA, READWRITE
result dcw 0
 AREA exp1, CODE, READONLY
 ldr r1, =num
 ldr r2, =len
 ldr r3, =result
 mov r4, #0         ;intializing the result register
 ldr r5, [r2]       ;loading len
loading ldr r6, [r1]       ;loading a byte for addition
 movs r6, r6               ; Setting flags
 addmi r4, r4, #1          ; Checking for N-flag
 add r1, r1, #0x04  ; incrementing the address to point to next
byte
 sub r5, r5, #0x01  ; decrementing length by 1
 cmp r5, #0x00      ; checking for length to be zero
 bne loading
 str r4, [r3]
e b e
 end
```

Assignment Problem

1. Write ARM assembly language program to find the biggest number in an array of 8-bit number in location "num". Store the result in location "biggest".