**Exp-3 Simulation to find smallest and largest number using Assembly language**

**Aim:** Write an assembly language program to find smallest/ largest number from a series of hexadecimal numbers.

**Software used:** Keil MDK

**Smallest Number Program**

AREA myprog, code

ENTRY

main

ldr r0,=data1

ldr r3,=0x40000000

ldr r4,=0x05 ;//length of loop

ldr r1,[r0],#04

sub r4,r4,#01

back

ldr r2,[r0]

cmp r1,r2

bls less ;// branch on low

mov r1,r2

less

add r0,r0,#04

sub r4,r4,#01

cmp r4,#00

bne back

str r1,[r3] ;// smallest value stored in memory location

stop b stop

data1 dcd &64,&05,&96,&10,&65

END

**Observations:**

**Largest Number**

AREA myprog, code

ENTRY

main

ldr r0,=data1

ldr r3,=0x40000000

ldr r4,=0x05 ;//length of loop

ldr r1,[r0],#04

sub r4,r4,#01

back

ldr r2,[r0]

cmp r1,r2

bhs large ;// branch on high

mov r1,r2

large

add r0,r0,#04

sub r4,r4,#01

cmp r4,#00

bne back

str r1,[r3] ;// largest value stored in memory location

stop b stop

data1 dcd &64,&05,&96,&10,&65

END

**Observations:**

**Results:**