Experiment 8

Aim:

To write an ARM Assembly Language program for division using repeated subtraction.

Tool Used:

Keil uVision4

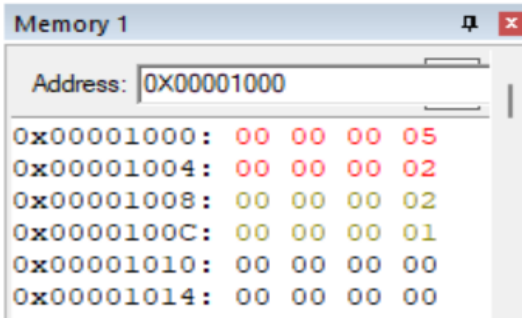
Theory:

LDR loads the register with some value. One register can be used as a counter. The first number can be subtracted by second number. On every loop the counter register is incremented on to the result.

Code:

```
 AREA PROGRAM, CODE, READONLY
 ENTRY
MAIN
     LDR R0, =0X00001000
     LDR R1, =0X00001004
     LDR R4, =0X00001008
     LDR R6, =0x0000100C
     LDR R2, [R0]
     LDR R3, [R1]
LOOP
        SUB R2, R2, R3
        ADD R5,R5,#1
        CMP R2,R3
        BGE LOOP
        STR R5, [R4]
        STR R2, [R6]
LOOP1   B LOOP1
        END
```

Output:

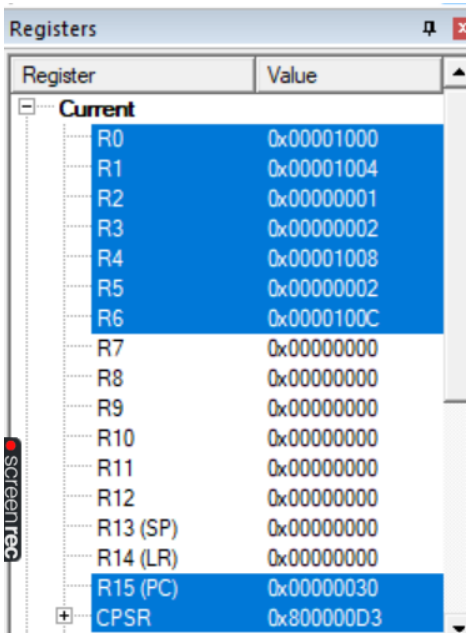


Dividend Location – 0x00001000
Divisor location - 0x00001004
Quotient location – 0x00001008
Remainder Location – 0x0000100C

```
Command
Running with Code Size Limit: 32K
Load "C:\\Users\\singh\\Documents\\keil embedded system\\experiment 8\\exp8.axf"

*** Restricted Version with 32768 Byte Code Size Limit
*** Currently used: 64 Bytes (0%)
```

Register Content



Result:

The experiments on Division operation using repeated subtraction have been performed and verified to be correct.