Experiment 12

Aim:

To write an ARM Assembly Language to find the number of times a character is repeated in a string.

Tool Used:

Keil uVision4

Theory:

The value of string is loaded using DCB and DCD values and compared until the value is 0.

Code:

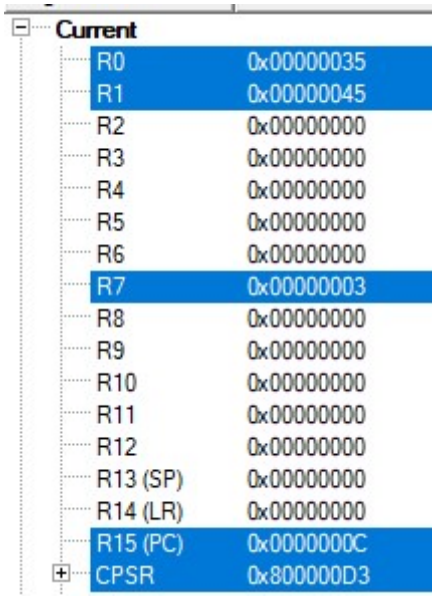
```
    AREA PROGRAM, CODE, READONLY
    ENTRY
MAIN
        LDR R0, VALUE1
        MOV R1, #'E'
LOOP2   LDRB R3,[R0],#1
        CMP R3,R1
        BNE LOOP2
        ADDS R3,R3,#0
        BEQ LOOP1
        ADD R7,R7,#1
        B LOOP2
LOOP1   SWI &11
    AREA PROGRAM, DATA, READONLY
VALUE1 DCD STRING ; DCD = Define Constant Double word
STRING DCB "EMBEDDED" ; DCB = Define Constant Byte
    END
```

Output:

```
Running with Code Size Limit: 32K
Load "C:\\Users\\User\\Documents\\Code-sync\\Keil\\ARM\\Experiment 12\\exp 12.axf"

*** Restricted Version with 32768 Byte Code Size Limit
*** Currently used: 52 Bytes (0%)
```

The word Embedded has 3 E in it which is displayed in R7.



Result:

The experiments to find the number of times a character is repeated in a string has been performed and verified to be correct.