```
2
    3
4
    5
         Code developer : Mr. Vaibhav Sugandhi
                                                            //
                          01FE16BEC437
                                                            //
    ;//
   ;//
7
                           4TH SEM ( A DIVISION )
                                                            //
8
    ;//
                       KLE TECHNOLOGICAL UNIVERSITY - HUBLI
9
    ;//
   ;//
10
                                                            //
11
    ;// This code is developed for LPC2148 ARM processor using keil v4
    13
    AREA ADD_BYTES, code, readonly
                                       ;Declaration of code area
                                       ;Begining of the program
14
   ENTRY
15
       MOV R0, #0X05
                                       ;Counter for repeating the loop
16
       LDR R1,=DATA
                                       ;Loads the address of the data field
17
                                       ;Lable for branching
   Again
                                       ;Loads the first data in R2 and increments
18
       LDRB R2, [R1], #01
       the value of R1 for next data
                                       ;Adds R3 with R2 and store the result in R3
19
       ADDS R3,R3,R2
                                       ;Decrement the counter by one
20
       SUBS R0, R0, #01
                                       ;Branch/repeats the itaration till R0
21
       BNE Again
       becomes ZERO
22
   STOP
                                       ;Lable for branching
23
                                       ;Loops infinite times
       B STOP
24
   DATA DCB 0X01,0X01,0X01,0X01,0X04
                                       ;Datas on which we are computing
                                       ; End of the ARM code
25
    END
26
27
    ______
28
29
    30
    ;//
         Code developer : Mr. Vaibhav Sugandhi
31
   ;//
                          01FE16BEC437
                                                            //
32
                          4TH SEM ( A DIVISION )
   ;//
                                                            //
33
   ;//
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                                                            //
34
   ;//
                                                            //
35
    ;//
                                                            //
36
    ;// This code is developed for LPC2148 ARM processor using keil v4
37
   ;Declaration of code area
38
    AREA ADD_HALF_WORDS,code,readonly
39
                                       ;Begining of the program
40
       MOV R0, #0X05
                                       ; Counter for repeating the loop
                                       ;Loads the address of the data field
41
       LDR R1,=DATA
42
                                       ;Lable for branching
   Again
                                       ;Loads the first data in R2 and increments
43
       LDRH R2,[R1],#02
       the value of R1 for next data
44
       ADDS R3,R3,R2
                                       ; Adds R3 with R2 and store the result in R3
       SUBS R0, R0, #01
45
                                       ;Decrement the counter by one
       BNE Again
                                       ; Repeart the process till Counter become ZERO
46
47
   STOP
                                       ;Lable for branching
48
      B STOP
                                       ;Loops infinite times
49
   DATA DCW 0X1234,0X1111,0X3333,0X4444,0X6655 ; Datas on which we are computing
50
                                       ; End of the ARM code
51
52
53
54
    55
         Code developer : Mr. Vaibhav Sugandhi
   ;//
                                                            //
56
                                                            //
   ; / /
                          01FE16BEC437
57
   ;//
                          4TH SEM ( A DIVISION )
                                                            //
58
    ;//
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59
   ;//
                                                            //
60
   ;//
                                                            //
61
    ;// This code is developed for LPC2148 ARM processor using keil v4
   62
                                       ;Declaration of code area
63
    AREA ADD_WORDS, code, readonly
```

```
64
    ENTRY
                                         ;Begining of the program
 65
        MOV R0,#0X05
                                         ;Used as a counter
 66
        LDR R1,=DATA
                                         ;Loads the address of the value 1 or
        starting adress of the datas
                                         ;Lable for looping
 67
        LDR R2, [R1], #04
                                         ;Loads the first value in array
68
                                         ;Successive addition with status update
 69
        ADDS R3,R3,R2
70
        SUBS R0, R0, #01
                                         ;Counter for iteration
 71
                                         ; Repeate the execution if condition is true
        BNE Again
72
                                         ;Lable for looping
    STOP
73
        B STOP
                                         ;Infinite loop
74
    DATA DCD 0X12345678,0X11112222,0X22223333,0X33334444,0X88556655 ;List of data on which
     we are computing
75
     END
                                         ; End of the ARM code
 76
 77
    ______
78
79
     Code developer : Mr. Vaibhav Sugandhi
    ;//
 80
 81
    ;//
                            01FE16BEC437
                                                              //
 82
    ;//
                            4TH SEM ( A DIVISION )
                                                              //
 83
                        KLE TECHNOLOGICAL UNIVERSITY - HUBLI
   ;//
                                                              //
 84
   ;//
                                                              //
85
    ; / /
                                                              //
     ;// This code is developed for LPC2148 ARM processor using keil v4
86
 87
    88
    AREA Subtraction, code, readonly
 89
     ;Declaration of code area
90 ENTRY
91
    ;Begining of the program
92
        MOV R0,#0X05
 93
        ; Counter for repeating the loop
 94
        LDR R1,=DATA
95
        ;Loads the address of the data field
96 Again
97
   ;Lable for branching
98
        LDR R2,[R1],#04
99
        ;Loads the first data in R2 and increments the value of R1 for next data
100
        SUBS R3,R3,R2
101
        ;Subtracts R2 from R3 and store the result in R3
102
        SUBS R0, R0, #01
103
        ;Decrement the counter by one
104
        BNE Again
105
        ;repeats loop untill counter become ZERO
   STOP
106
107 ;Lable for branching
108
        B STOP
109
        ;Loops infinite times
110 DATA DCD 0x10000000,0x00000001,0x00000001,0x00000001,0x00000001
111
    ;Datas on which we are computing
112
    END
113
     ; End of the ARM code
114
115
    ______
116
117
     118
          Code developer : Mr. Vaibhav Sugandhi
    ; / /
                                                              //
119
   ;//
                            01FE16BEC437
                                                              //
120
                            4TH SEM ( A DIVISION )
    ; / /
                                                              //
121
                        KLE TECHNOLOGICAL UNIVERSITY - HUBLI
                                                              //
    ;//
122
     ;//
                                                              //
123
    ; / /
                                                              //
124
    ;// This code is developed for LPC2148 ARM processor using keil v4
                                                              //
125
   AREA MULTIPLICATION, CODE, READONLY
126
     ;Declaration of code area
127
```

```
128
     ENTRY
     ;Begining of the program
129
130
        MOV R0,#04
        ;Used as a counter
131
132
        LDR R1,=DATA1
133
        ;Loads the address of the value 1 or starting adress of the datas
134
        LDR R5,=RESULT
135
        ;Loads the address of the result memory
136
        LDR R2, [R1], #4
137
        ;Loads the first data in R2 and increments the value of R1 for next data
138
    LOOP
139 ;Lable for looping
140
        LDR R3,[R1],#4
        ;Loads the first data in R3 and increments the value of R1 for next data
141
142
        MUL R4,R3,R2
143
        ;Multiplies the R3 with R2 and store result in R4
144
        MOV R2,R4
145
        ;Successive multiplication pupose coping the result into R2
146
        SUBS R0,R0,#01
147
        ;Decrementing the value of counter
148
        BNE LOOP
149
        ; Repeats till Counter become ZERO
150
        STR R2,[R5]
151
        ;Stores the result in result memory
152 STOP
    ;Lable for looping
153
154
        B STOP
155
        ;Loops infinite times
DATA1 DCD 0x00000002,0x00000002,0x00000002,0x00000002,0x00000002
ipatas on which we are computing
    AREA RESULT_MEMORY, DATA, READWRITE
158
159
     ;Declaration of Result_Memory area
160 RESULT DCD 0x00
161 ; Result initially 00
162
        END
163
        ; End of the ARM code
164
165
     ______
166
167
    168 ;//
           Code developer : Mr. Vaibhav Sugandhi
                                                                 //
169 ;//
                             01FE16BEC437
                                                                 //
170
     ;//
                             4TH SEM ( A DIVISION )
                                                                 //
171
                         KLE TECHNOLOGICAL UNIVERSITY - HUBLI
     ;//
                                                                 //
172
    ;//
                                                                 //
173 ;//
                                                                 //
174
     ;// This code is developed for LPC2148 ARM processor using keil v4
175
     176
     AREA Dividation, code, readonly
                                         ;Declaration of code area
177
                                         ;Begining of the program
    ENTRY
178
        MOV R4,#00
                                         ; Result is held in this register after
        computation
                                         ; Put your numerator here
179
        MOV R0, #0x40
180
                                         ; Put your denominator here
        MOV R1,\#0x02
181
    LOOP
                                         ;Lable for looping
182
        SUB R0,R0,R1
                                         ; successive subtraction for multiplication
183
                                         ;Result is count value
        ADD R4,R4,#01
184
                                         ;Comparing to take decision
        CMP R0,R1
185
        BPL LOOP
                                         ;Branch or repeat utill condition is true
186 STOP
                                         ;Lable for looping
187
        B STOP
                                         ;infinite loop
                                         ; End of the ARM code
188
        END
189
     *************************
190
```