THUMB Instruction Related Programs

;Program to demonstrate thumb operation

```
 area reset,data,readonly
            export __Vectors
__Vectors
            dcd 0
             dcd Reset_Handler


  area mycode,code,readonly
  entry
  export Reset_Handler
Reset_Handler
start
   mov r1,#4 ; Encoded into its equivalent 32-bit opcode (F04F0104)
   add r1,#4 ; Encoded into its equivalent 32-bit opcode (F1010104)
   add r1,#2 ; Encoded into its equivalent 32-bit opcode (F04F0102)

   code16
start1
            mov r2,#4 ;Encoded into its equivalent 16-bit opcode (2204)
           add r2,#4 ;Encoded into its equivalent 16-bit opcode (3204)
           add r2,#2 ;Encoded into its equivalent 16-bit opcode (3202)

    ;addeq r3,r3,#0 ; not thumb instruction

stop b stop

  end
```

;ARM ALP to demonstrate division operation using thumb instruction

```
 area reset,data,readonly
            export __Vectors
__Vectors
             dcd 0
             dcd Reset_Handler

  area mycode,code,readonly
  entry
  export Reset_Handler
Reset_Handler
   mov r8,#50
   mov r9,#16

   mov r11,#0
loop subs r8,r8,r9
        addge r11,r11,#1
        bge loop
       add r10,r8,r9

   code16
start1
            mov r0,#50
            mov r1,#16

            mov r3,#0

loop1      sub r0,r1
             blt loop2
             add r3,#1
             b loop1
loop2     add r0,r1

            ldr r4,=data1
            ldr r5,=data2

            ldrh r6,[r4]
            strh r6,[r5]

            ;addeq r3,r3,#0 ; not thumb instruction

stop b stop
data1 dcw 0x1234
  area mydata,data,readwrite
data2 space 0
  end
```