Ft2Inches.s

```
# F2C.s
# An assembly program to calculate
temperature from C to F
    .text
    .global main

main:
# Save return to os on stack
    sub sp, sp, #4
    str lr, [sp, #0]

# Prompt For An Input
    ldr r0, =prompt1
    bl  printf

#Scanf
    ldr r0, =input1
    sub sp, sp, #4
    mov r1, sp
    bl  scanf
    ldr r0, [sp, #0]
    add sp, sp, #4
```

```
#Convert
    bl F2C
    mov r1, r0

# Printing The Message
    ldr r0, =format1
    bl printf

# Return to the OS
    ldr lr, [sp, #0]
    add sp, sp, #4
    mov pc, lr

.data
    prompt1: .asciz "Enter the Temp in F you want in C: \n"
    format1:  .asciz "\nThe temp in C is %d\n"
    input1: .asciz "%d"
```

objdump_1

```
F2C.o:     file format elf32-littlearm


Disassembly of section .text:


00000000 <main>:
   0:   e24dd004    sub    sp, sp, #4
   4:   e58de000    str    lr, [sp]
   8:   e59f0034    ldr    r0, [pc, #52]   ; 44 <main+0x44>
   c:   ebfffffe    bl     0 <printf>
  10:   e59f0030    ldr    r0, [pc, #48]   ; 48 <main+0x48>
  14:   e24dd004    sub    sp, sp, #4
  18:   e1a0100d    mov    r1, sp
  1c:   ebfffffe    bl     0 <scanf>
  20:   e59d0000    ldr    r0, [sp]
  24:   e28dd004    add    sp, sp, #4
  28:   ebfffffe    bl     0 <F2C>
  2c:   e1a01000    mov    r1, r0
  30:   e59f0014    ldr    r0, [pc, #20]   ; 4c <main+0x4c>
  34:   ebfffffe    bl     0 <printf>
  38:   e59de000    ldr    lr, [sp]
  3c:   e28dd004    add    sp, sp, #4
  40:   e1a0f00e    mov    pc, lr
  44:   00000000    .word  0x00000000
  48:   0000003b    .word  0x0000003b
  4c:   00000025    .word  0x00000025
```

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# Prompt For An Input
    ldr r0, =prompt1
    bl  printf

#Scanf
    ldr r0, =input1
    sub sp, sp, #4
    mov r1, sp
    bl  scanf
    ldr r0, [sp, #0]
    add sp, sp, #4

#Convert
    bl F2C
    mov r1, r0

# Printing The Message
    ldr r0, =format1
    bl printf

# Return to the OS
    ldr lr, [sp, #0]
    add sp, sp, #4
    mov pc, lr

    prompt1: .asciz "Enter the Temp in F you want in C: \n"
    format1:  .asciz "\nThe temp in C is %d\n"
    input1: .asciz "%d"

.data
```

Objdump

```
F2C.o:     file format elf32-littlearm


Disassembly of section .text:

00000000 <main>:
   0:    e24dd004     sub     sp, sp, #4
   4:    e58de000     str     lr, [sp]
   8:    e59f0078     ldr     r0, [pc, #120] ; 88
<num1+0x6>
   c:    ebfffffe     bl      0 <printf>
  10:    e59f0074     ldr     r0, [pc, #116] ; 8c
<num1+0xa>
  14:    e24dd004     sub     sp, sp, #4
  18:    e1a0100d     mov     r1, sp
  1c:    ebfffffe     bl      0 <scanf>
  20:    e59d0000     ldr     r0, [sp]
  24:    e28dd004     add     sp, sp, #4
  28:    ebfffffe     bl      0 <F2C>
  2c:    e1a01000     mov     r1, r0
  30:    e59f0058     ldr     r0, [pc, #88]   ; 90
<num1+0xe>
  34:    ebfffffe     bl      0 <printf>
  38:    e59de000     ldr     lr, [sp]
  3c:    e28dd004     add     sp, sp, #4
  40:    e1a0f00e     mov     pc, lr
```

```
00000044 <prompt1>:
  44:   65746e45    .word 0x65746e45
  48:   68742072    .word 0x68742072
  4c:   65542065    .word 0x65542065
  50:   6920706d    .word 0x6920706d
  54:   2046206e    .word 0x2046206e
  58:   20756f79    .word 0x20756f79
  5c:   746e6177    .word 0x746e6177
  60:   206e6920    .word 0x206e6920
  64:   0a203a43    .word 0x0a203a43
        ...

00000069 <format1>:
  69:   0a          .byte  0x0a
  6a:   6854        .short 0x6854
  6c:   65742065    .word 0x65742065
  70:   6920706d    .word 0x6920706d
  74:   2043206e    .word 0x2043206e
  78:   25207369    .word 0x25207369
  7c:   0a64        .short 0x0a64
        ...

0000007f <input1>:
  7f:   25          .byte  0x25
  80:   0064        .short 0x0064

00000082 <num1>:
  82:   0000        .short 0x0000
  84:   00000000    .word 0x00000000
  88:   00000044    .word 0x00000044
  8c:   0000007f    .word 0x0000007f
  90:   00000069    .word 0x00000069
```