

Nicholas Cali

I pledge my Honor that I have abided by the Stevens Honors system.

Program 1:

```
.text
.extern printf
.global _start

_start:
adr x15, i
adr x16, f
adr x17, g
ldr x20, [x15, #0]
ldr x21, [x16, #0]
ldr x22, [x17, #0]
sub x20, x20, #4
cbnz x20, Else
add x19, x22, #1
B Exit

Else:
sub x19, x22, #2
BL Exit

Exit:
adr x0, message
mov x1, x19
BL printf
mov x0, #0
mov w8, #93
SVC #0

.data
i: .quad 6
f: .quad 4
g: .quad 10
```

```
message: .ascii "Value of f: %d\n\0"
```

```
.end
```

Program 2:

```
.text
```

```
.extern printf
```

```
.global _start
```

```
_start:
```

```
adr x15, a
```

```
adr x16, b
```

```
adr x0, message
```

```
ldr x1, [x15]
```

```
ldr x2, [x16]
```

```
add x18, x2, x1
```

```
subs x18, x18, #14
```

```
cbnz x18, L1
```

```
mov x18, #3
```

```
mov x1, x18
```

```
B L2
```

```
L1:
```

```
mov x19, #2
```

```
mov x18, #0
```

```
sub x18, x18, x19
```

```
mov x1, x18
```

```
B L2
```

```
L2:
```

```
BL printf
```

```
mov x0, #0
```

```
mov w8, #93
```

```
SVC #0
```

```
.data
a: .quad 9
b: .quad 5
message: .ascii "Value of c: %d\n"

.end
```

Program 3:

```
.text
.global _start
#.extern printf
```

```
_start:
mov x2, #10
mov x3, #0
mov x1, #0
bl loop
```

```
loop:
cmp x3, x2
beq Exit
add x3, x3, #1
add x1, x1, x3
bl loop
```

```
Exit:
adr x0, msg
bl printf
mov x0, #0
mov w8, #93
SVC #0
```

```
.data
x: .quad 0
y: .quad 0
z: .quad 10
```

```
msg: .ascii "Sum: %d\n\0"
```

```
.end
```

Program 4:

```
.text
```

```
.global _start
```

```
#.extern printf
```

```
_start:
```

```
    mov x2, #8  
    mov x3, #0  
    mov x4, #0  
    ldr x5, =array  
    bl loop
```

```
loop:
```

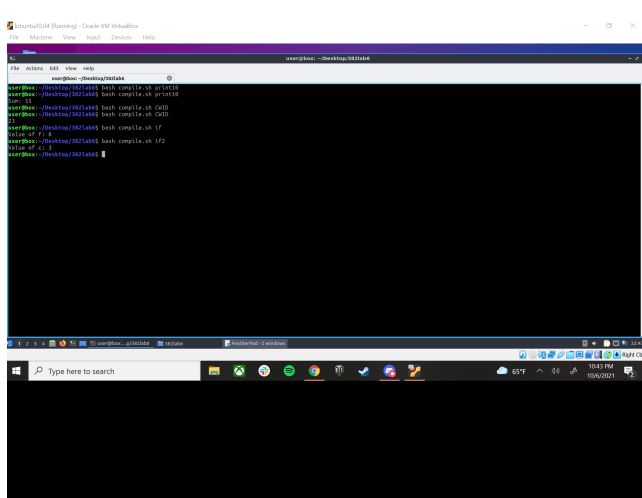
```
    cmp x3, x2  
    beq Exit  
    lsl x10, x3, #3  
    add x10, x10, x5  
    ldr x9, [x10, #0]  
    add x3, x3, #1  
    add x4, x4, x9  
    bl loop
```

```
Exit:
```

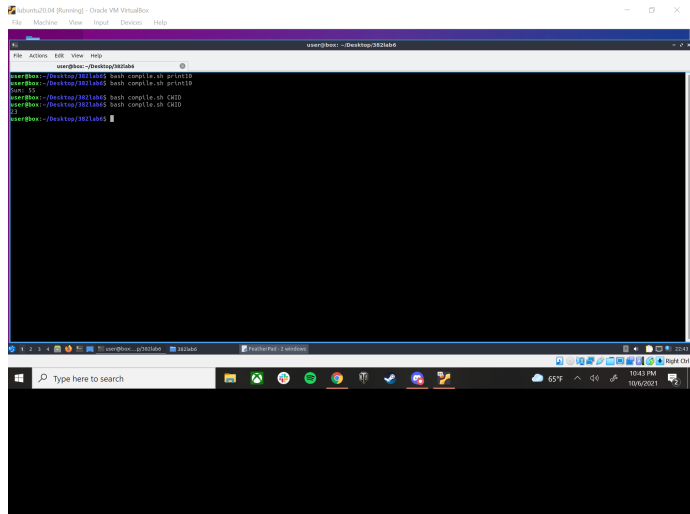
```
    adr x0, msg  
    mov x1, x4  
    bl printf  
    mov x0, #0  
    mov w8, #93  
    SVC #0
```

```
.data
```

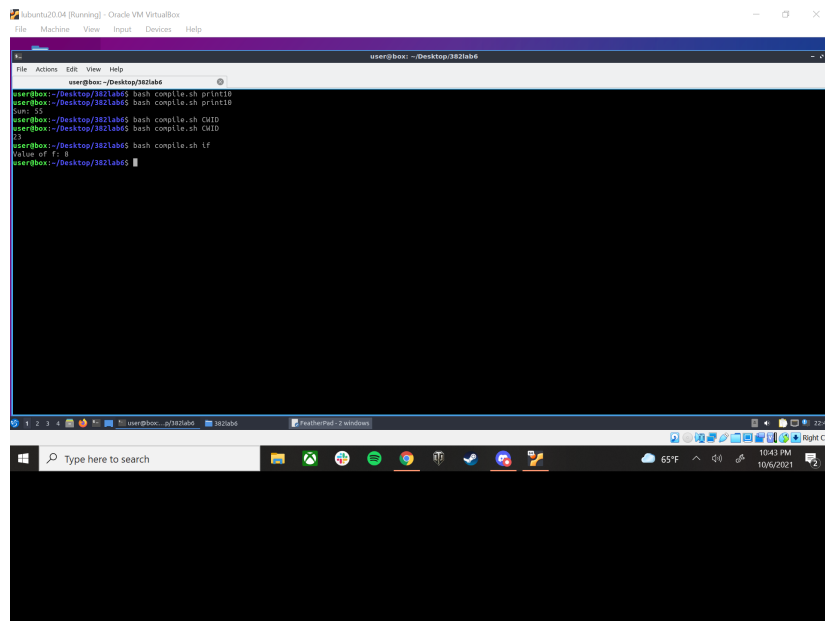
array: .quad 1, 0, 4, 5, 3, 5, 0, 5
msg: .ascii "%d\n\0"



```
user@box: ~/Desktop/3821ab6
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$ bash compile.sh lf
user@box:~/Desktop/3821ab6$ bash compile.sh lf2
value of f: 1
user@box:~/Desktop/3821ab6$
```



```
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$
```



```
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh print10
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$ bash compile.sh QUID
user@box:~/Desktop/3821ab6$ bash compile.sh lf
value of f: 1
user@box:~/Desktop/3821ab6$
```