

cond 1

```
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond1$ aarch64-linux-gnu-as  
cond1.s -o cond1.o  
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond1$ aarch64-linux-gnu-ld  
cond1.o -lc  
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond1$ qemu-aarch64 -L /usr/  
aarch64-linux-gnu/ a.out  
3
```

```
1|.text  
2.global _start  
3.extern printf  
4  
5_start:  
6        .global cond1_func  
7  
8  
9 cond1_func:  
10       ldr     x8, =i  
11       ldr     x1, [x8]  
12       ldr     x8, =g  
13       ldr     x2, [x8]  
14       ldr     x8, =f  
15       ldr     x3, [x8]  
16       sub     x1, x1, #4  
17       cbz     x1, Else  
18       sub     x1, x2, #2  
19       B       exit  
20 Else:   add     x1, x2, #1  
21       B       exit  
22 exit:   bl     cond1_end  
23  
24  
25  
26 cond1_end:  
27       ldr     x0, =print_num  
28       bl     printf  
29       mov     x0, #0  
30       mov     w8, #93  
31       svc     #0  
32  
33       .data  
34 i:  
35       .quad 4  
36 g:  
37       .quad 2  
38 f:  
39       .quad 0  
40  
41 print_num:  
42       .ascii "%d\n\0"  
43       .end
```

## Cond 2

```
1 .text
2 .global _start
3 .extern printf
4
5 _start:
6     .global cond2_func
7
8
9 cond2_func:
10     ldr    x8, =c
11     ldr    x1, [x8]
12     ldr    x8, =a
13     ldr    x2, [x8]
14     ldr    x8, =b
15     ldr    x3, [x8]
16     add    x2, x2, x3
17     sub    x2, x2, #14
18     cbz    x2, Else
19     sub    x1, x1, #2
20     B      exit
21 Else:    add    x1, x1, #3
22     B      exit
23 exit:    bl     cond2_end
24
25
26
27 cond2_end:
28     ldr    x0, =print_num
29     bl     printf
30     mov    x0, #0
31     mov    w8, #93
32     svc    #0
33
34     .data
35 a:
36     .quad 4
37 b:
38     .quad 11
39 c:
40     .quad 0
41
42 print_num:
43     .ascii "%d\n\0"
44     .end
```

```
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond2$ aarch64-linux-gnu-as
cond2.s -o cond2.o
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond2$ aarch64-linux-gnu-ld
cond2.o -lc
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/cond2$ qemu-aarch64 -L /usr/
aarch64-linux-gnu/ a.out
-2
```

## Loop 1

```
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop1$ aarch64-linux-gnu-as
loop1.s -o loop1.o
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop1$ aarch64-linux-gnu-ld
loop1.o -lc
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop1$ qemu-aarch64 -L /usr/
aarch64-linux-gnu/ a.out
55
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop1$
```

```
1|.text
2|.global _start
3|.extern printf
4
5_start:
6|.global loop1_func
7
8loop1_func:
9|.ldr    x8, =i
10|.ldr    x2, [x8]
11|.ldr    x8, =zero
12|.ldr    x1, [x8]
13Loop:   cbz    x2, Exit
14|.add    x1, x1, x2
15|.sub    x2, x2, #1
16|.B      Loop
17
18Exit:   bl     loop1_end
19
20
21
22loop1_end:
23|.ldr    x0, =print_num
24|.bl     printf
25|.mov    x0, #0
26|.mov    w8, #93
27|.svc    #0
28
29
30|.data
31i:
32|.quad 10
33zero:
34|.quad 0
35
36print_num:
37|.ascii "%d\n\0"
38|.end
```

## Loop2

```
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop2$ aarch64-linux-gnu-as  
loop2.s -o loop2.o  
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop2$ aarch64-linux-gnu-ld  
loop2.o -lc  
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop2$ qemu-aarch64 -L /usr/  
aarch64-linux-gnu/ a.out  
31  
maciej@maciej-VirtualBox:~/Desktop/CS382/Labs/Lab_6/loop2$
```

```
1 .text  
2 .global _start  
3 .extern printf  
4  
5 _start:  
6     adr     x19, CWID  
7     adr     x0, print_num  
8     mov     x1, #0  
9     mov     x2, #64  
10    mov     x3, #0  
11  
12 loop2_func:  
13 loop:    ldr     x4, [x19, x1]  
14         add     x3, x3, x4  
15         add     x1, x1, #8  
16         sub     x5, x1, x2  
17         cbnz    x5, loop  
18         mov     x1, x3  
19         bl      printf  
20         mov     x0, #0  
21         mov     w8, #93  
22         svc     #0  
23  
24  
25         .data  
26 CWID:  
27         .quad 1,0,4,5,4,7,5,5  
28  
29 print_num:  
30         .ascii "%d\n\0"  
31         .end
```