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1ª questão

```
1  .text
2  .globl add
3  add:
4      pushq %rbp
5      movq %rsp, %rbp
6      movq %rdi, -16(%rbp)
7
8      movl $0, -4(%rbp)
9
10     for:
11         cmpq $0, -16(%rbp)
12         je  end_for
13
14         movq -16(%rbp), %r11
15         movl (%r11), %r11d
16         addl %r11d, -4(%rbp)
17
18         movq -16(%rbp), %r12
19         movq 8(%r12), %r12
20         movq %r12, -16(%rbp)
21         jmp for
22
23     end_for:
24         movl -4(%rbp), %eax
25         movq %rbp, %rsp
26         popq %rbp
27         ret
```

Saída da questão 1:

```
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ gcc -no-pie -o lab9-ex1 add1.s main.c
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ ./lab9-ex1
  resultado de add: 45
○ (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$
```

2ª questão

```
1  .text
2  .globl add
3  add:
4      pushq %rbp
5      movq %rsp, %rbp
6      subq $16, %rsp
7      movq %rdi, -16(%rbp)
8
9      movl $0, -4(%rbp)
10
11  if:
12      cmpq $0, -16(%rbp)
13      je else
14
15      movq -16(%rbp), %r11
16      movl (%r11), %r11d
17      movl %r11d, -4(%rbp)
18
19      movq -16(%rbp), %r12
20      movq 8(%r12), %r12
21      movq %r12, -16(%rbp)
22      movq %r12, %rdi
23
24      call add
25
26      addl %eax, -4(%rbp)
27      jmp ret
28
29  else:
30      movl $0, -4(%rbp)
31      jmp ret
32
33  ret:
34      movl -4(%rbp), %eax
35      movq %rbp, %rsp
36      popq %rbp
37      ret
```

Saída da questão 2:

```
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ gcc -no-pie -o lab9-ex2 add2.s main.c
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ ./lab9-ex2
resultado de add: 45
○ (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$
```

3ª questão

```

1  .text
2  .globl boo
3  boo:
4      pushq %rbp
5      movq %rsp, %rbp
6      subq $16, %rsp
7      movq %rbx, -8(%rbp)
8      movq %r12, -12(%rbp)
9      movq %r13, -16(%rbp)
10
11     movq %rdi, %rbx
12     movl %esi, %r12d
13     movl %edx, %r13d
14
15     while:
16         cmpl $0, %r12d
17         je  end_while
18
19         movl (%rbx), %edi
20         movl %r13d, %esi
21
22         call f
23
24         movl %eax, 4(%rbx)
25
26         addq $8, %rbx
27         decl %r12d
28         jmp while
29
30     end_while:
31         movq -16(%rbp), %r13
32         movq -12(%rbp), %r12
33         movq -8(%rbp), %rbx
34         addq $16, %rsp
35         leave
36         ret

```

Saída da questão 3:

```

• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ gcc -no-pie -o lab9-ex3 boo.s mainboo.c
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ ./lab9-ex3
Antes: {1,0} {2,0} {3,0}
Depois: {1,2} {2,2} {3,3}
○ (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$

```

4ª questão

```

1  .text
2  .globl map2
3  map2:
4
5  map2:
6      pushq %rbp
7      movq %rsp, %rbp
8      subq $32, %rsp
9      movq %rbx, -8(%rbp)
10     movq %r12, -16(%rbp)
11     movq %r13, -20(%rbp)
12
13     movq %rdi, %rbx
14     movq %rsi, %r12
15     movl %edx, %r13d
16     movl $0, -24(%rbp)
17
18     for:
19         cmpl %r13d, -24(%rbp)
20         je  end_for
21
22         movl -24(%rbp), %r11d
23         imull $4, %r11d
24
25         addq %rbx, %r11
26         movq (%r11), %rdi
27         call f
28
29         movl -24(%rbp), %r11d
30         imull $4, %r11d
31
32         addq %r12, %r11
33         movl %eax, (%r11)
34
35         addl $1, -24(%rbp)
36
37         jmp for
38
39     end_for:
40     movq -8(%rbp), %rbx
41     movq -16(%rbp), %r12
42     movq -20(%rbp), %r13
43     addq $32, %rsp
44     leave
45     ret

```

Saída da questão 4:

```

• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ gcc -no-pie -o lab9-ex4 map2.s mainmap2.c
• (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$ ./lab9-ex4
2
3
4
5
6
7
8
9
10
11
○ (base) puc@notepuc07:~/Documentos/Pessoal/inf1018/inf1018-software-basico/LAB10$

```