

Princeton University

COS 217: Introduction to Programming Systems

Linker Output for powerfunction via gdb

```
$ gcc -o powerfunction powerfunction.o
```

```
$ gdb powerfunction
```

```
(gdb) x/17i power
0x804835c <power>:      push   %ebp
0x804835d <power+1>:      mov    %esp,%ebp
0x804835f <power+3>:      push  $0x1
0x8048361 <power+5>:      push  $0x0
0x8048363 <power+7>:      movl  $0x1,0xffffffff(%ebp)
0x804836a <loop1>:         mov    0xffffffff8(%ebp),%eax
0x804836d <loop1+3>:        cmp   0xc(%ebp),%eax
0x8048370 <loop1+6>:        jg    0x8048380 <loopend1>
0x8048372 <loop1+8>:        mov    0xffffffffc(%ebp),%eax
0x8048375 <loop1+11>:   imull 0x8(%ebp)
0x8048378 <loop1+14>:      mov    %eax,0xffffffffc(%ebp)
0x804837b <loop1+17>:     incl  0xffffffff8(%ebp)
0x804837e <loop1+20>:     jmp   0x804836a <loop1>
0x8048380 <loopend1>:  mov    0xffffffffc(%ebp),%eax
0x8048383 <loopend1+3>:  mov    %ebp,%esp
0x8048385 <loopend1+5>:  pop   %ebp
0x8048386 <loopend1+6>:  ret
```

```
(gdb) x/43b power
0x804835c <power>:      0x55    0x89    0xe5    0x6a    0x01    0x6a    0x00    0xc7
0x8048364 <power+8>:      0x45    0xf8    0x01    0x00    0x00    0x00    0x8b    0x45
0x804836c <loop1+2>:      0xf8    0x3b    0x45    0x0c    0x7f    0x0e    0x8b    0x45
0x8048374 <loop1+10>:   0xfc    0xf7    0x6d    0x08    0x89    0x45    0xfc    0xff
0x804837c <loop1+18>:   0x45    0xf8    0xeb    0xea    0x8b    0x45    0xfc    0x89
0x8048384 <loopend1+4>: 0xec    0x5d    0xc3
```

```

(gdb) x/36i main
0x8048387 <main>:      push   %ebp
0x8048388 <main+1>:     mov    %esp,%ebp
0x804838a <main+3>:      push   $0x0
0x804838c <main+5>:     push   $0x0
0x804838e <main+7>:      push   $0x0
0x8048390 <main+9>:     push   $0x80484a8
0x8048395 <main+14>:    call   0x804829c <printf>
0x804839a <main+19>:    add    $0x4,%esp
0x804839d <main+22>:    lea   0xffffffff(%ebp),%eax
0x80483a0 <main+25>:    push   %eax
0x80483a1 <main+26>:    push   $0x80484d0
0x80483a6 <main+31>:    call   0x804827c <scanf>
0x80483ab <main+36>:      add    $0x8,%esp
0x80483ae <main+39>:    push   $0x80484ba
0x80483b3 <main+44>:    call   0x804829c <printf>
0x80483b8 <main+49>:    add    $0x4,%esp
0x80483bb <main+52>:    lea   0xffffffff8(%ebp),%eax
0x80483be <main+55>:    push   %eax
0x80483bf <main+56>:    push   $0x80484d0
0x80483c4 <main+61>:    call   0x804827c <scanf>
0x80483c9 <main+66>:      add    $0x8,%esp
0x80483cc <main+69>:    pushl 0xffffffff8(%ebp)
0x80483cf <main+72>:    pushl 0xffffffffc(%ebp)
0x80483d2 <main+75>:    call  0x804835c <power>
0x80483d7 <main+80>:      add    $0x8,%esp
0x80483da <main+83>:      mov    %eax,0xffffffff4(%ebp)
0x80483dd <main+86>:      pushl 0xffffffff4(%ebp)
0x80483e0 <main+89>:      pushl 0xffffffff8(%ebp)
0x80483e3 <main+92>:      pushl 0xffffffffc(%ebp)
0x80483e6 <main+95>:      push   $0x80484d3
0x80483eb <main+100>:     call   0x804829c <printf>
0x80483f0 <main+105>:    add    $0x10,%esp
0x80483f3 <main+108>:    mov    $0x0,%eax
0x80483f8 <main+113>:    mov    %ebp,%esp
0x80483fa <main+115>:    pop   %ebp
0x80483fb <main+116>:    ret

```

```

(gdb) x/117b main
0x8048387 <main>:      0x55    0x89    0xe5    0x6a    0x00    0x6a    0x00    0x6a
0x804838f <main+8>:      0x00    0x68    0xa8    0x84    0x04    0x08    0xe8    0x02
0x8048397 <main+16>:   0xff    0xff    0xff    0x83    0xc4    0x04    0x8d    0x45
0x804839f <main+24>:   0xfc    0x50    0x68    0xd0    0x84    0x04    0x08    0xe8
0x80483a7 <main+32>:   0xd1    0xfe    0xff    0xff    0x83    0xc4    0x08    0x68
0x80483af <main+40>:   0xba    0x84    0x04    0x08    0xe8    0xe4    0xfe    0xff
0x80483b7 <main+48>:   0xff    0x83    0xc4    0x04    0x8d    0x45    0xf8    0x50
0x80483bf <main+56>:   0x68    0xd0    0x84    0x04    0x08    0xe8    0xb3    0xfe
0x80483c7 <main+64>:   0xff    0xff    0x83    0xc4    0x08    0xff    0x75    0xf8
0x80483cf <main+72>:   0xff    0x75    0xfc    0xe8    0x85    0xff    0xff    0xff
0x80483d7 <main+80>:   0x83    0xc4    0x08    0x89    0x45    0xf4    0xff    0x75
0x80483df <main+88>:   0xf4    0xff    0x75    0xf8    0xff    0x75    0xfc    0x68
0x80483e7 <main+96>:   0xd3    0x84    0x04    0x08    0xe8    0xac    0xfe    0xff
0x80483ef <main+104>:  0xff    0x83    0xc4    0x10    0xb8    0x00    0x00    0x00
0x80483f7 <main+112>:  0x00    0x89    0xec    0x5d    0xc3

```

```
(gdb) quit
```

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