

ASM Examples

What do the following functions return?

```
1. 0000000000000000 <foo>:
   0: 01 f7          add  %esi,%edi
   2: 89 f8          mov  %edi,%eax
   4: c3            retq
```

```
2. 0000000000000000 <bar>:
   0: 8b 17          mov  (%rdi),%edx
   2: 8b 06          mov  (%rsi),%eax
   4: 89 07          mov  %eax,(%rdi)
   6: 89 16          mov  %edx,(%rsi)
   8: c3            retq
```

```
3. 0000000000000000 <foo2>:
   0: 39 f7          cmp  %esi,%edi
   2: 0f 4e fe      cmovle %esi,%edi
   5: 89 f8          mov  %edi,%eax
   7: c3            retq
```

```
4. 0000000000000000 <bar2>:
   0: 31 c0          xor  %eax,%eax
   2: eb 02          jmp  6 <mult+0x6>
   4: 01 f8          add  %edi,%eax
   6: 85 f6          test %esi,%esi
   8: 7f fa          jg  4 <mult+0x4>
   a: c3            retq
```

```
5. 0000000000000000 <loop2>:
   0: 31 c0          xor  %eax,%eax
   2: 31 f6          xor  %esi,%esi
   4: 39 f8          cmp  %edi,%eax
   6: 7d 1c          jge  24 <loop2+0x24>
   8: 85 f6          test %esi,%esi
   a: 7e 12          jle  1e <loop2+0x1e>
   c: 8d 0c b5 00 00 00 00 lea  0x0(,%rsi,4),%ecx
  13: 89 f2          mov  %esi,%edx
  15: 01 c8          add  %ecx,%eax
  17: 83 c1 02       add  $0x2,%ecx
  1a: ff ca          dec  %edx
  1c: 75 f7          jne  15 <loop2+0x15>
  1e: ff c6          inc  %esi
  20: 39 fe          cmp  %edi,%esi
  22: 7c e4          jl   8 <loop2+0x8>
  24: c3            retq
```

```
int loop2(int n)
{
    int total = 0;
    int i, j;
    for (i = 0; i < n; i++)
    {
        for (j = 0; _____ ; j++)
        {
            total += _____;
        }
    }
    return total;
}
```