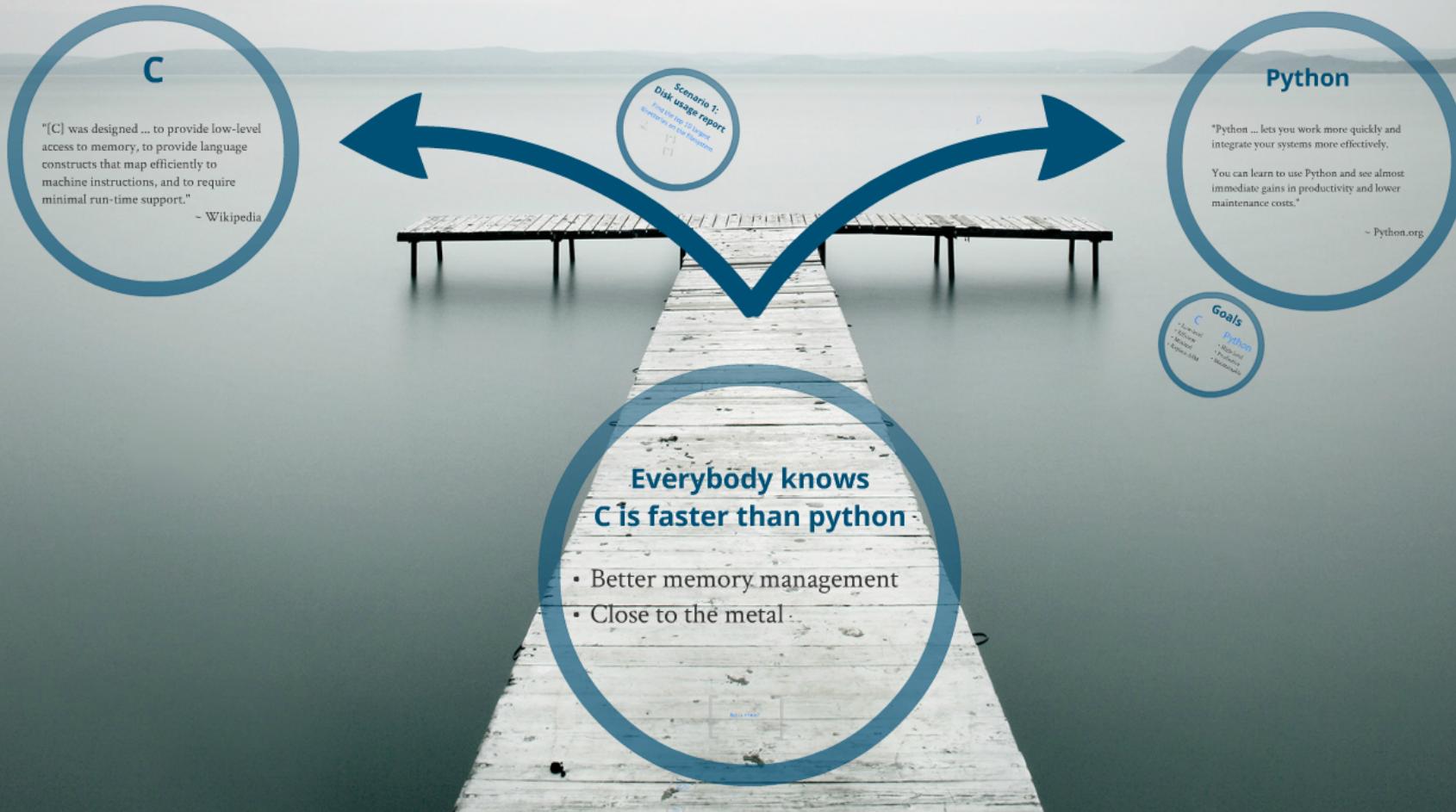


Coding Performance

Why C is not faster than Python

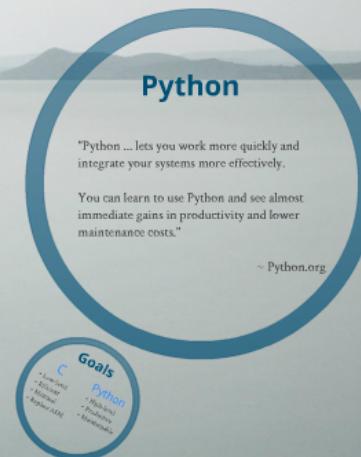
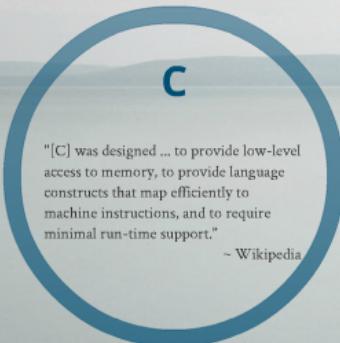
Darren Wurf



Coding Performance

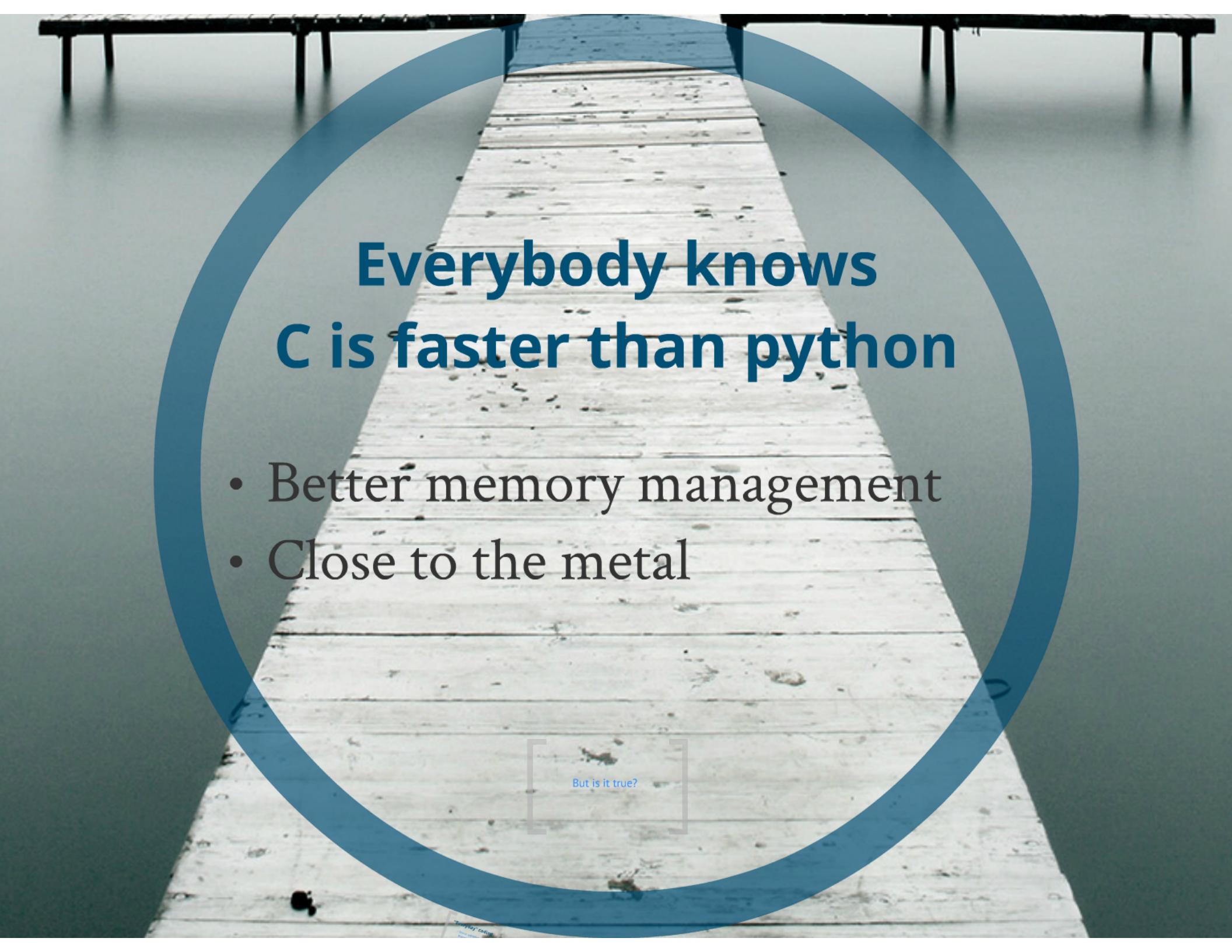
Why C is not faster than Python

Darren Wurf



**Everybody knows
C is faster than python**

- Better memory management
- Close to the metal



Everybody knows C is faster than python

- Better memory management
- Close to the metal

[But is it true?]



But is it true?

"Everyday" coding

- Server administration
- Process automation
- Data processing
- Reporting

Not "Performance" coding

- Device drivers
- Embedded systems (somewhat)
- Graphics/physics engines
- Database engines

C

"[C] was designed ... to provide low-level access to memory, to provide language constructs that map efficiently to machine instructions, and to require minimal run-time support."

~ Wikipedia

Python

"Python ... lets you work more quickly and integrate your systems more effectively.

You can learn to use Python and see almost immediate gains in productivity and lower maintenance costs."

~ Python.org

Goals

C

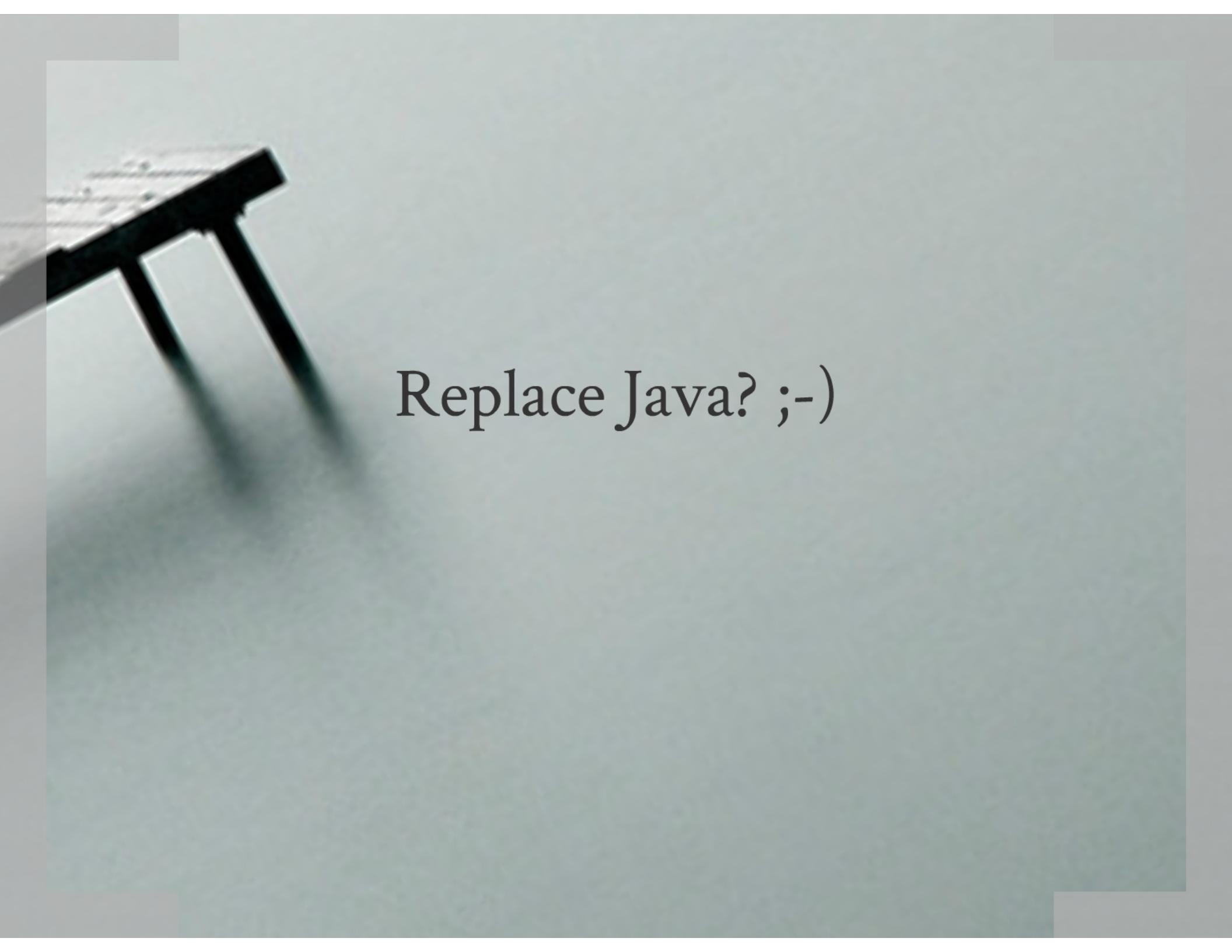
- Low-level
- Efficient
- Minimal
- Replace ASM

Python

- High-level
- Productive
- Maintainable

Replace Java? :-)





Replace Java? ;-)

Scenario 1: Disk usage report

Find the top 10 largest
directories on the filesystem



du -Sk

```
8      /media
45468  /boot
264    /boot/grub
(... 30k lines)
```

Final report

```
/path/to/dir1 (1512 MB)
/path/to/dir2 (1125 MB)
/path/to/dir3 (965 MB)
(... top 10)
```

```
for line in file:  
    split line into size, path  
    if size > 10MB:  
        append (size, path) to list  
end for  
  
sort list desc on size  
for size, path in list[1] to list[10]:  
    print "{path} ({size} MB)"  
end for
```

Results

	Time taken	Lines of code
C	9ms	41
Python	58ms	18
Shell	32ms	5

Results

Time taken

C

9ms

Python

58ms

Shell

32ms

du -Sk

109,974ms



What does it mean?



We are bound by I/O

Code takes <0.01%
of the execution
time

C ~= Python

Next time, just use sh

The end