

The Julia Programming Language – a quick intro



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Getting started

- Hosted in-browser notebook at <https://www.juliabox.org/>
- Or download an installer from <http://julialang.org/downloads/>
- For local install, open Julia REPL then run

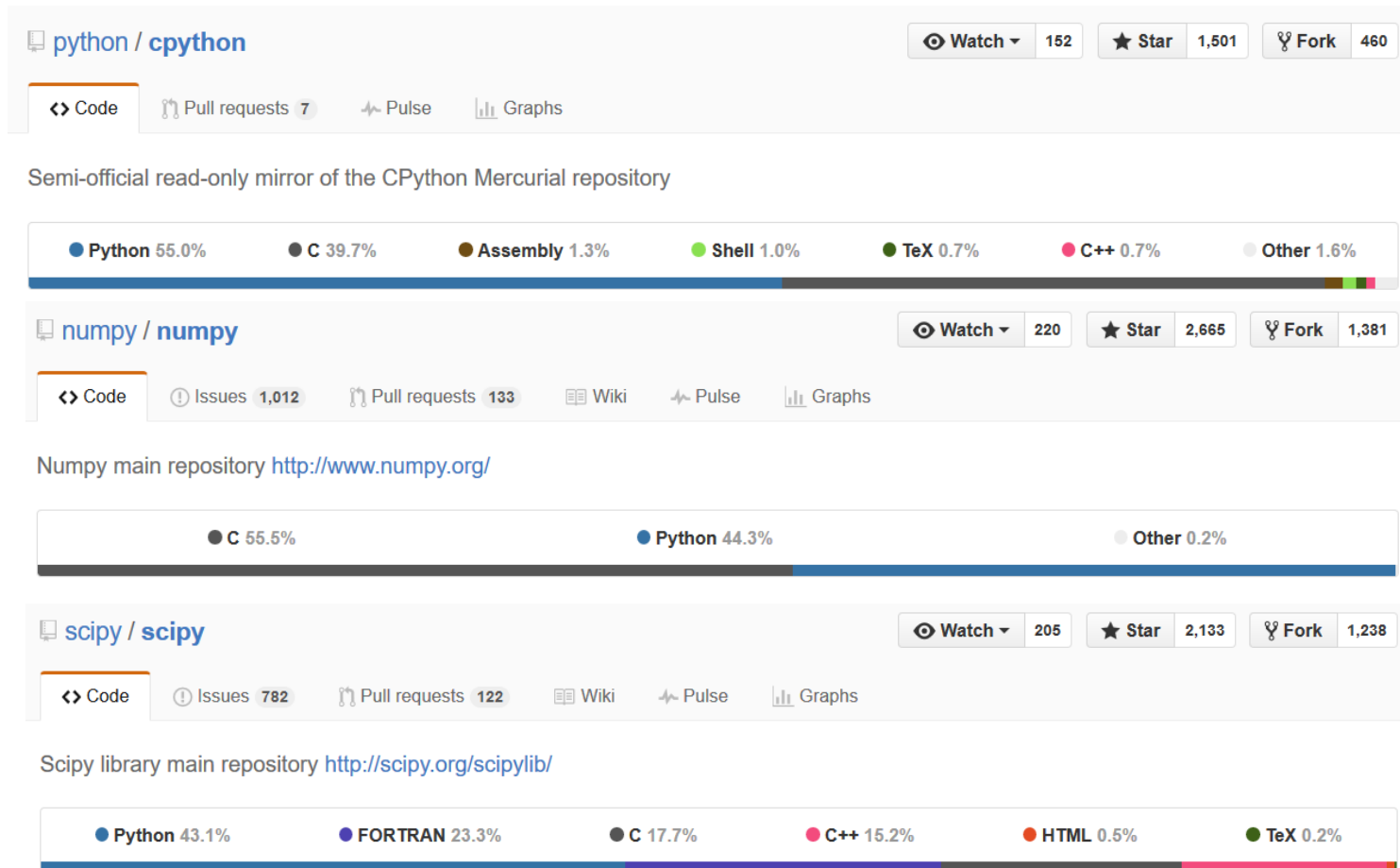
```
Pkg.add("IJulia")  
using IJulia  
notebook()
```
- If you already have Jupyter installed it should use that, this creates a new Julia kernel profile

Why a new language?

- Have a problem to solve and want a computer to do the work
- Has anyone else already solved the exact same problem and shared their code? Use it!
- Does that code meet your requirements?
 - Easy enough to use?
 - Good enough performance?
 - Can you understand the code if you find a bug?
 - Can it be extended to handle new data structures or modified algorithms?
- (if so, you're lucky, thank the author and help fix a bug or something)

2-language problem

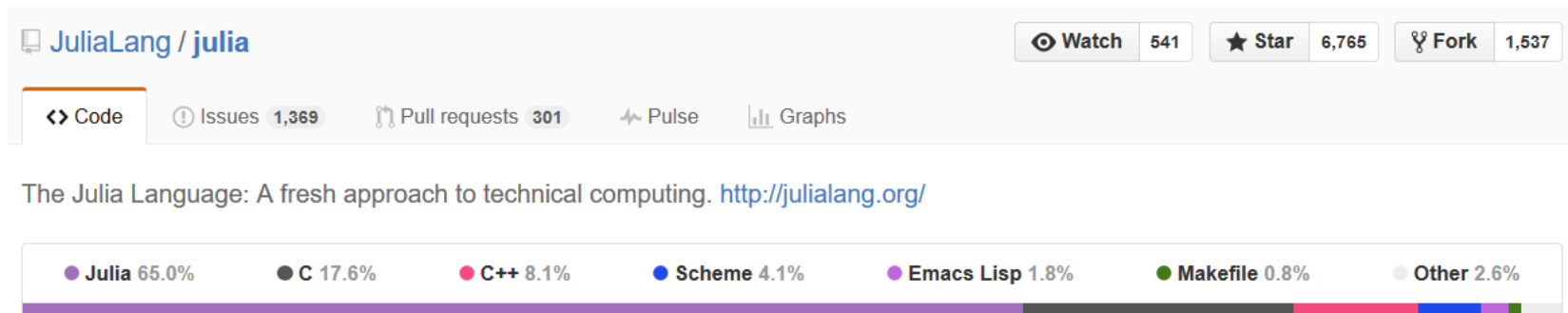
- Performance critical parts in C, user friendly wrappers in Python



Can we do better?



- Python, Numpy, Scipy, etc have been around a long time
- Many new technologies for making dynamic languages fast
- Just in time compilation to native code
- LLVM compiler framework, used by Clang etc
- Julia's goal: write like Python, run like C, easily access existing libraries and legacy code



Demo