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TOOLBOX

PICK UP PYTHON

A powerful programming language with huge community support.

ILLUSTRATION BY THE PROJECT OF

BY JEFFREY M. PERKEL

Last month, Adina Howe took up a post at Iowa State University in Ames. Officially, she is an assistant professor of agricultural and biosystems engineering. But she works not in the greenhouse, but in front of a keyboard. Howe is a programmer, and a key part of her job is as a 'data professor' — developing curricula to teach the next generation of graduates about the mechanics and importance of scientific programming.

Howe does not have a degree in computer science, nor does she have years of formal train-

Brown specializes in bioinformatics and uses computation to extract meaning from genomic data sets, and Howe had to get up to speed on the computational side. Brown's recommendation: learn Python.

Among the host of computer-programming languages that scientists might choose to pick up, Python, first released in 1991 by Dutch programmer Guido van Rossum, is an increasingly popular (and free) recommendation. It combines simple syntax, abundant online resources and a rich ecosystem of scientifically focused toolkits with a heavy emphasis on community.

is becoming ever more crucial. Researchers who can write code in Python can deftly manage their data sets, and work much more efficiently on a whole host of research-related tasks — from crunching numbers to cleaning up, analysing and visualizing data. Whereas some programming languages, such as MATLAB and R, focus on mathematical and statistical operations, Python is a general-purpose language, along the lines of C and C++ (the languages in which much commercial software and operating systems are written). As such, it is perhaps more complicated, Brown says, but also more capable: it is amenable to everything from

Nature 518
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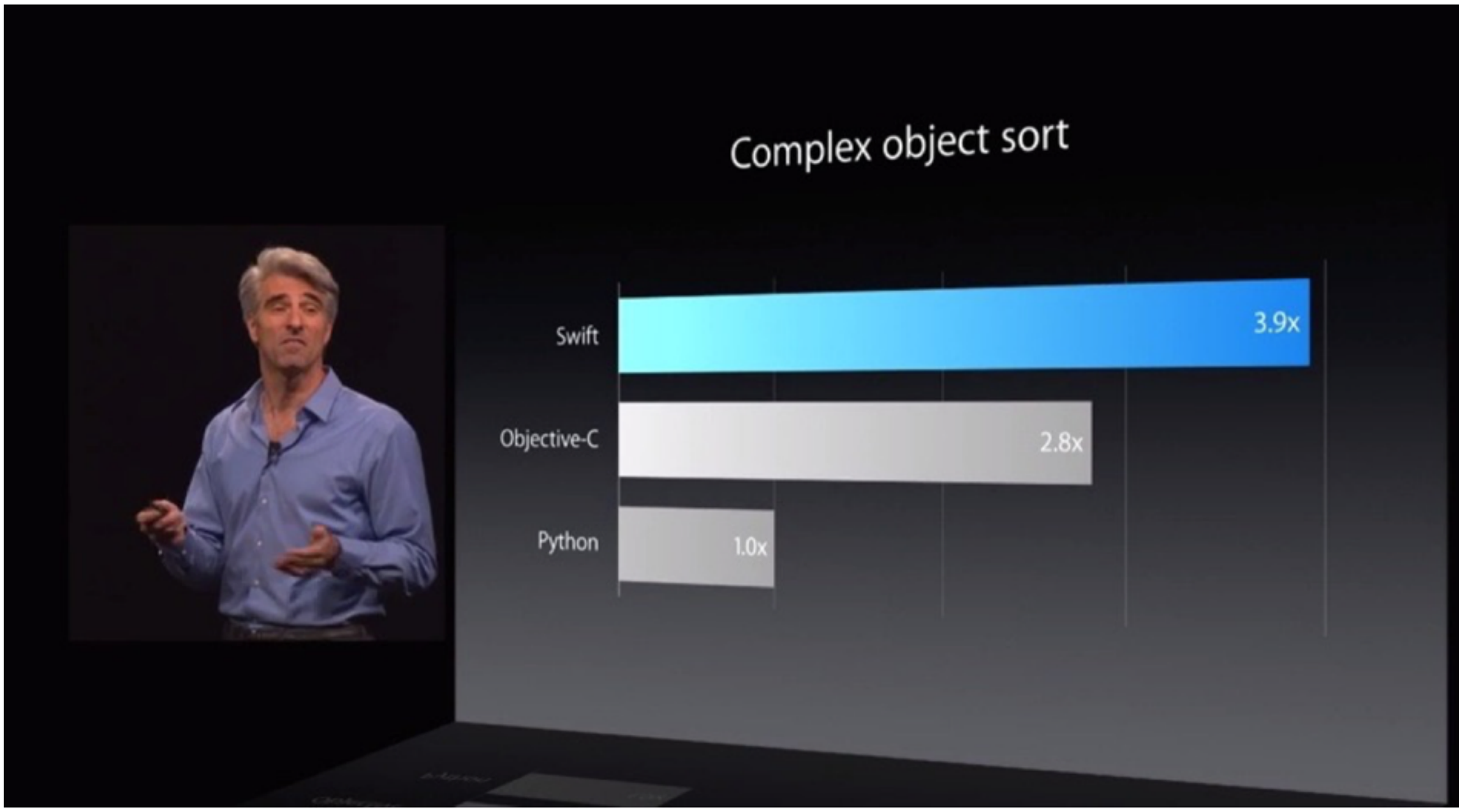

Complex object sort
Swift
3.9x
Objective-C
2.8x
Python
1.0x

IEEE Spectrum | Trending | **Jobs** | Open | Custom

Edit Ranking | Add a Comparison |

(click to hide)

Web | Mobile | Enterprise | Embedded

1.	Java	100.0
2.	C	99.1
3.	Python	95.8
4.	C++	95.7
5.	C#	91.9
6.	JavaScript	90.7
7.	PHP	86.6
8.	SQL	85.0
9.	Ruby	83.6
10.	Shell	79.1

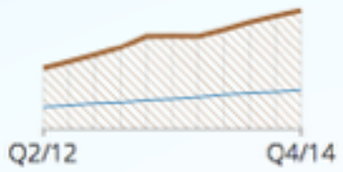
TOP ACTIVE LANGUAGES

A split by language view of active repositories

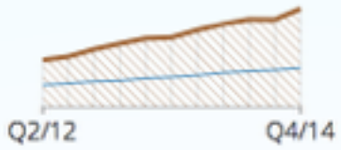
%

GitHub Average

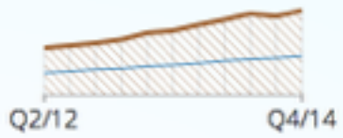
1. JavaScript



2. Java

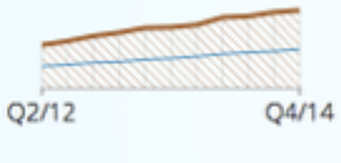


3. Python

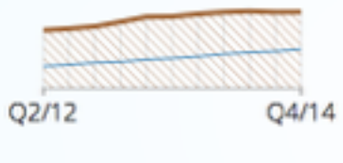


4. CSS

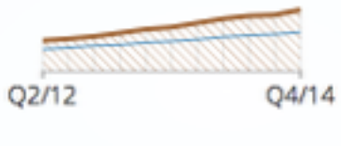
5. PHP



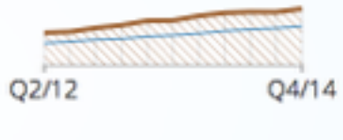
6. Ruby



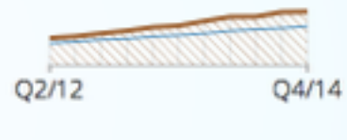
7. C++



8. C



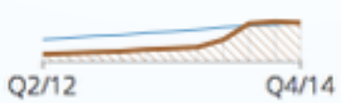
9. Shell



10. C#

11. Objective-C

12. R



13. VimL

14. Go

15. Perl

16. CoffeeScript

17. TeX

18. Swift

19. Scala

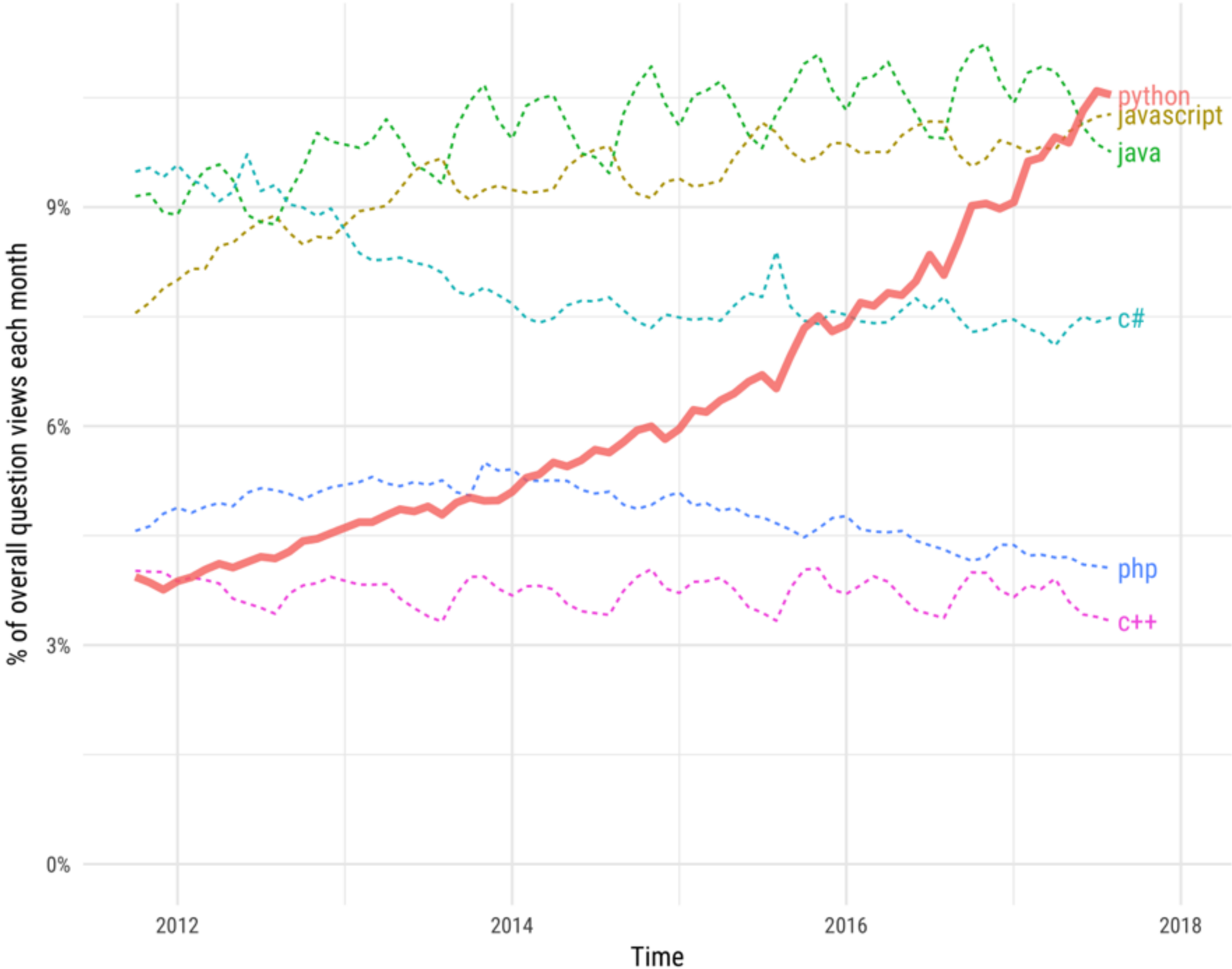
20. Emacs Lisp

21. Haskell

22. Lua

23. Clojure

24. Matlab

Growth of major programming languages

Based on Stack Overflow question views in World Bank high-income countries