

2017

Developer Hiring Landscape

GLOBAL REPORT

Introduction

Developers are writing the script for the future. With the demand for technical talent far exceeding the supply, every company is searching for its next developer. By understanding how developers think, what they care about, and what makes them tick, you can effectively hire the talent your company needs.

As home to the world's developers, Stack Overflow is visited by over 40 million developers every month. Each year, we survey the programming community on topics ranging from their favorite technologies to how they found their current jobs. Over 64,000 respondents from 213 countries and territories participated this year, making it the world's largest and most comprehensive developer survey.

Discover what it really takes to hire great developers in a competitive market with the 2017 edition of our Global Developer Hiring Landscape.



62%

of developers are open to new opportunities, and an additional 13% of developers are actively looking for a job.



90%

of developers say they are at least partially self-taught.



87%

of developers are employed at least part-time.



Table of Contents



CHAPTER I Developer Demographics / 04

Where They Live

Gender



CHAPTER II Developer Types / 07

Developer Status

Types of Developers

Non-Developer Occupations



CHAPTER III Developer Education / 10

Years Spent Coding

Formal Education

Non-Formal Education

Self-Taught Developers

Hobbies & Open Source



CHAPTER IV Developer Compensation / 15

Average Salaries

Salary Expectations Compared to Market Value



CHAPTER V Developer Employment / 18

Employment Status

Industry

Company Size

Type of Company



CHAPTER VI Current Jobs of Developers / 22

Job Discovery

Remote Work

How Often Developers Work From Home

Career Satisfaction



CHAPTER VII The Developer Job Search / 26

Current Job-Seeking Status

Time Spent Looking for Job Opportunities

Last Time Developers Took a New Job

Why a CV Was Last Updated

Job Evaluation Criteria

Importance of Benefits

Tips for Tech Hiring



CHAPTER VIII Technologies, Languages, and Tools Languages / 33

Languages

Frameworks, Libraries, and Tools

Database Technologies

Platforms

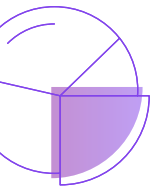


CHAPTER I
DEVELOPER DEMOGRAPHICS

Where They Live

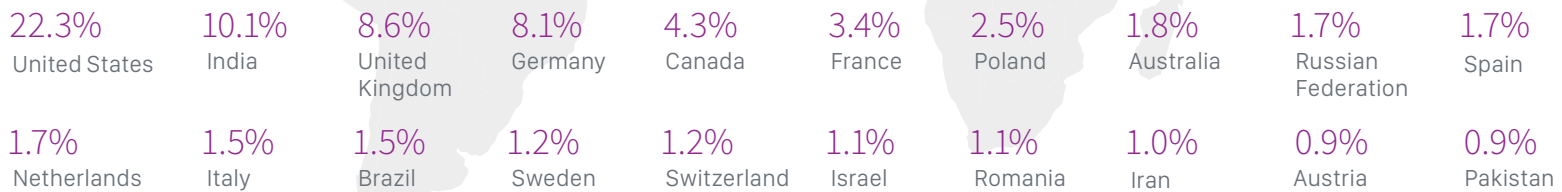
Gender

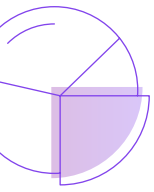




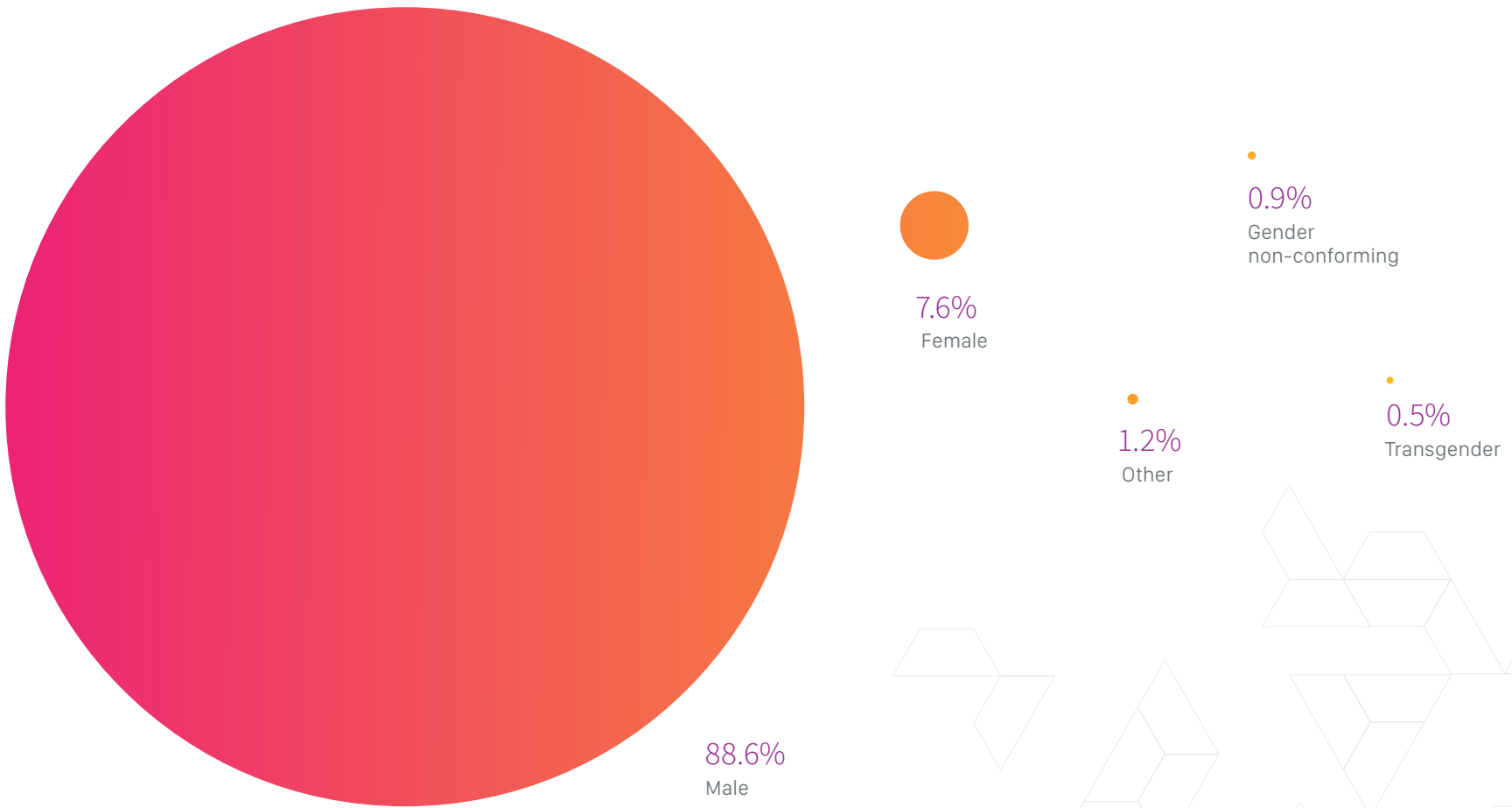
Where They Live

Developers live and work all over the globe. Respondents represented 213 countries and territories, ranging from the United States to Pakistan.





Gender





CHAPTER II

DEVELOPER TYPES

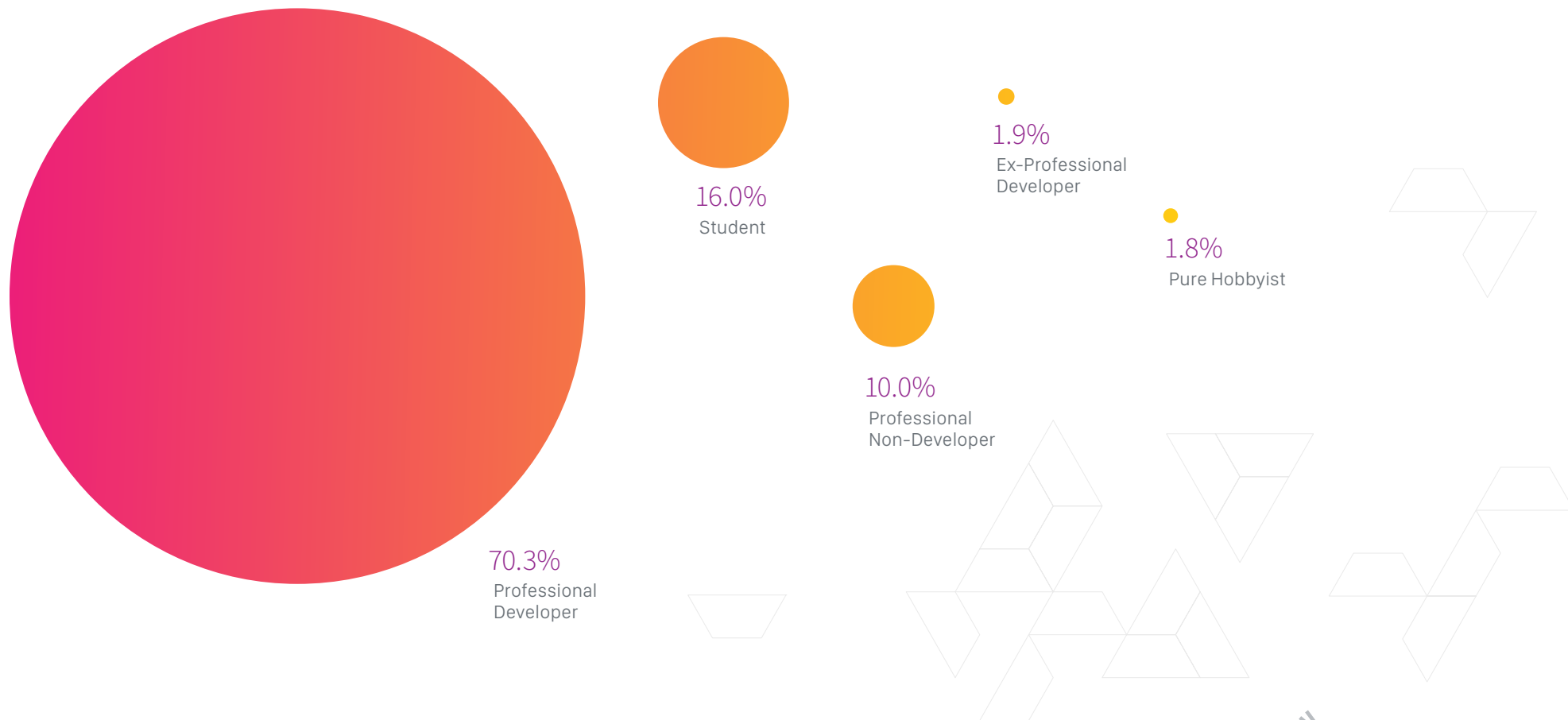
Developer Status

Types of Developers

Non-Developer Occupations

Developer Status

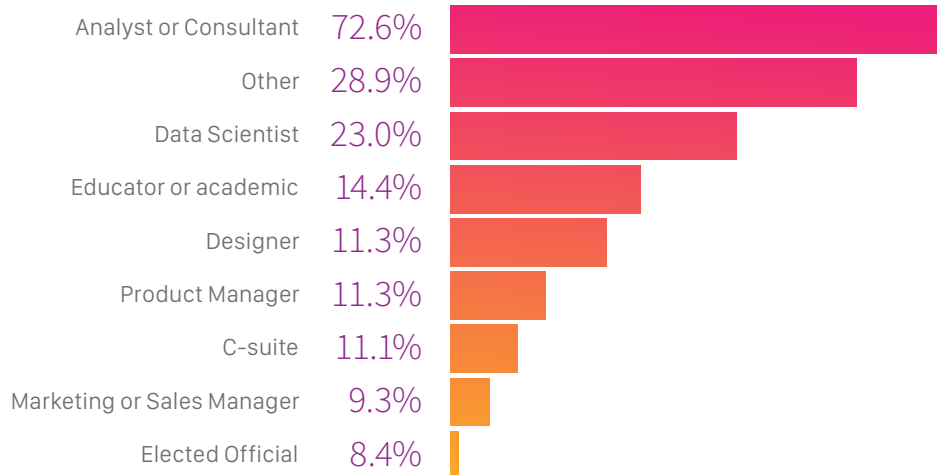
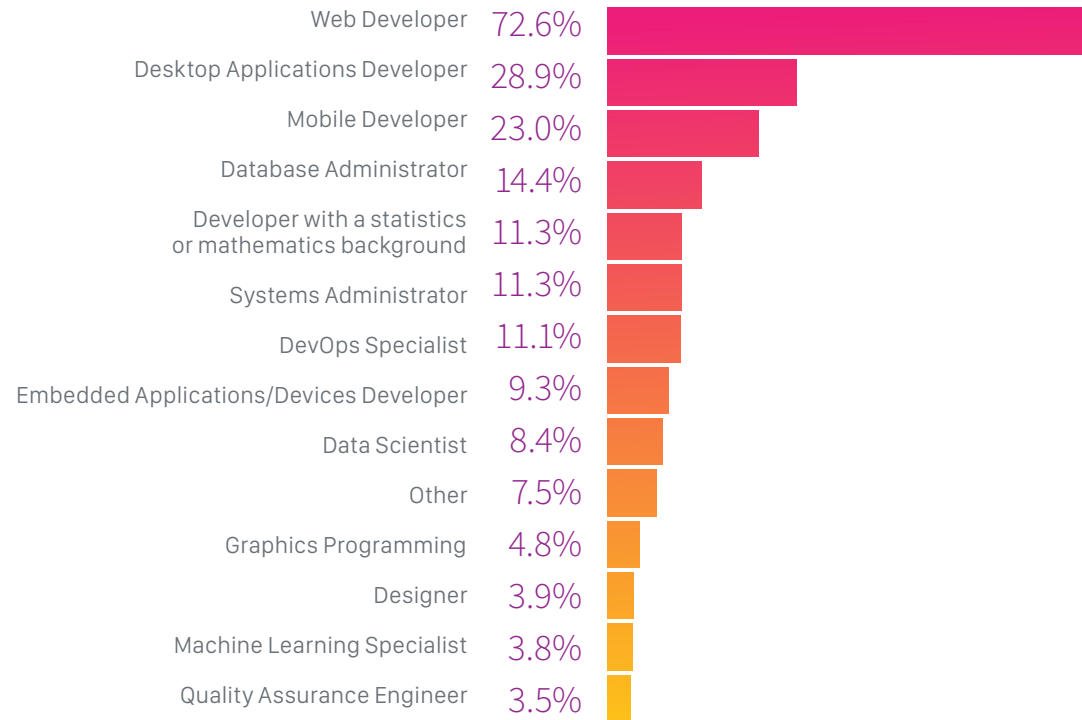
The term “developer” can be [highly subjective](#) depending on who you’re talking to. Some developers are students who work on open source projects when they’re not in class. Others are working for Fortune 500 companies with job titles like Senior Engineer. Nevertheless, one thing’s for certain: if you spent part of your life coding, you can call yourself a developer.



Types of Developers

We've established how broad the term "developer" can be, so let's get more specific. Here are what developers identify themselves as, whether it's their official job title or their preferred designation.

About three-fourths of respondents identify as Web Developers, with many developers also working to build desktop apps and mobile apps.



Non-Developer Occupations

Professional developers aren't the only ones writing code as a hobby—or even as part of their jobs. Respondents also identified themselves as Analysts, Data Scientists, Educators, and Graphic Designers.



CHAPTER III

DEVELOPER EDUCATION

Years Spent Coding

Formal Education

Non-Formal Education

Self-Taught Developers

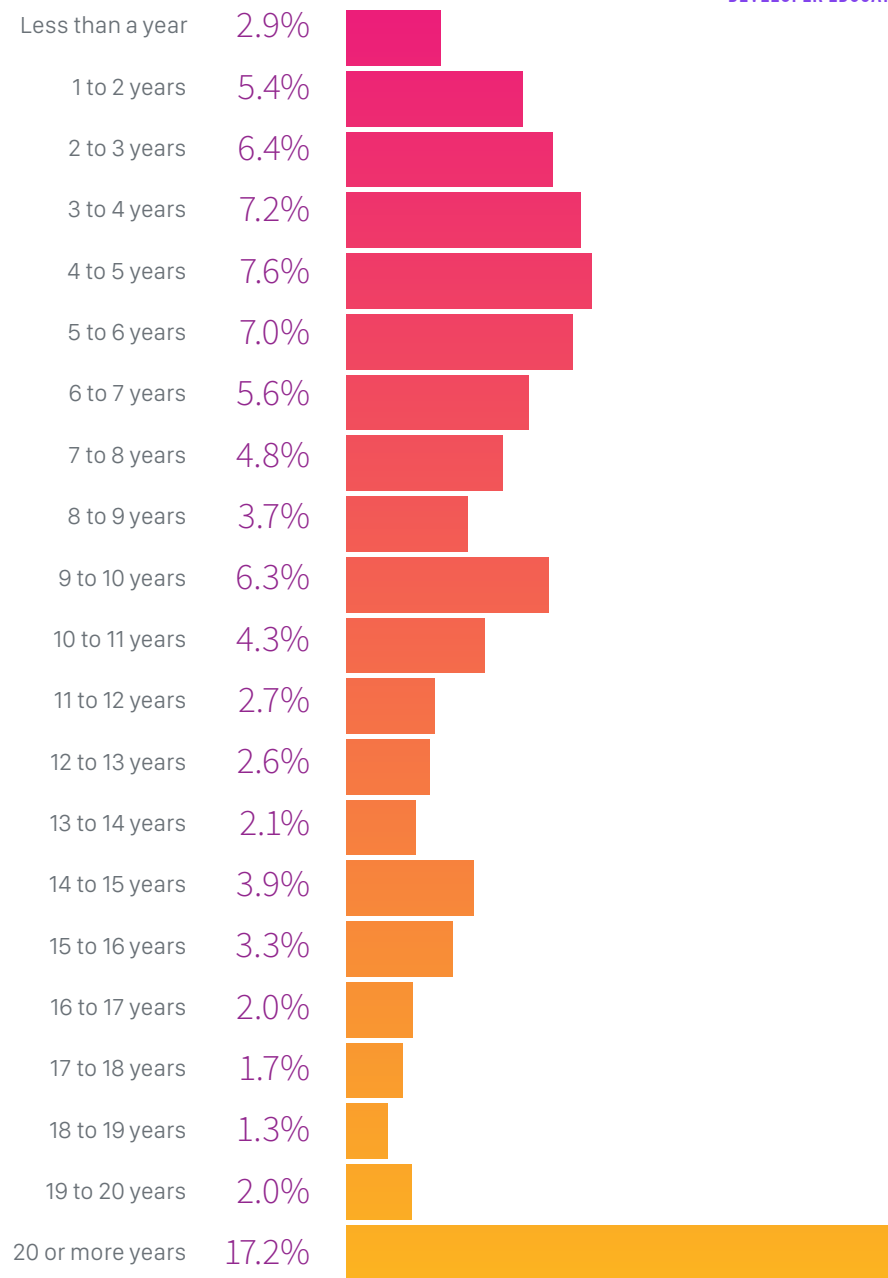
Hobbies & Open Source



Years Spent Coding

Ask any developer how long they've been coding, and their answer will likely surprise you (for example, 17% of respondents globally have 20+ years of experience). A common misconception about developers is that they've all been programming since childhood. In fact, we see a wide range of experience levels. Among professional developers, 11.3% got their first coding jobs within a year of first learning how to program. A further 36.9% learned to program between one and four years before beginning their careers as developers.

Bottom line: you can't simply look at a developer's age or graduation date and infer their coding experience.



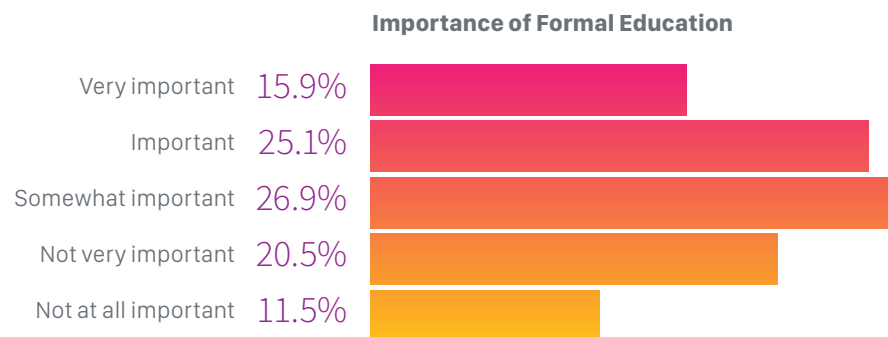
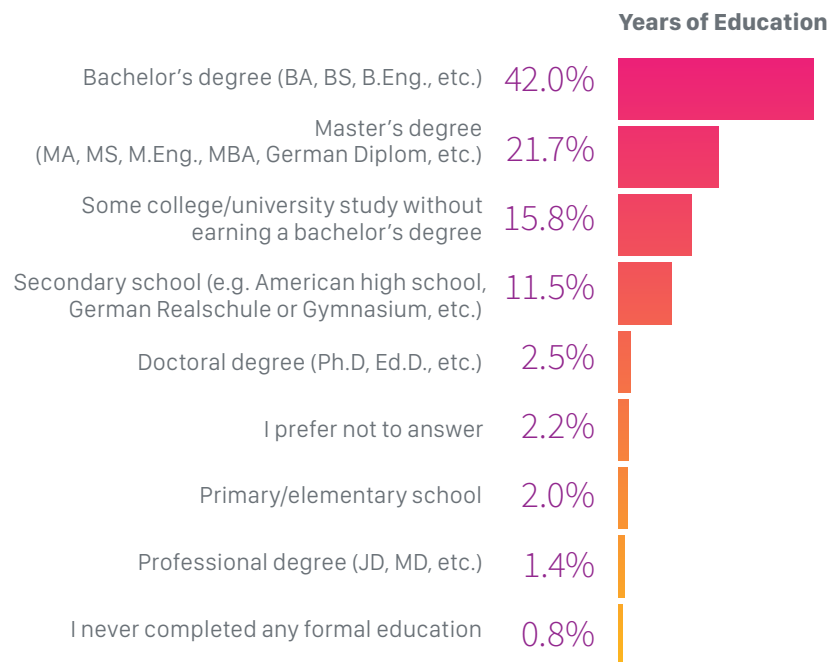


Formal Education

About two-thirds of developers worldwide have at least a bachelor’s degree, with about a quarter having a graduate degree. Among professional developers, 77% of respondents said they had a bachelor’s degree or higher.

32% of current professional developers said that their formal education was “not very important” or “not at all important” to their career success. This is not entirely surprising given that 90% of developers overall consider themselves at least somewhat self-taught: a formal degree is only one aspect of their education.

Developers with a computer science or computer engineering major were the most likely to say their education was “important” or “very important” (49% globally).

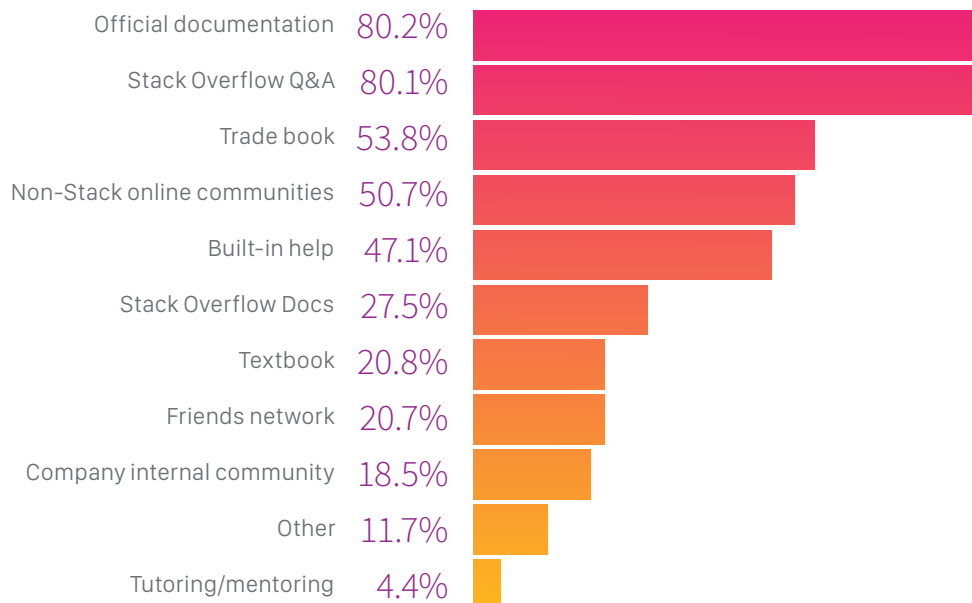
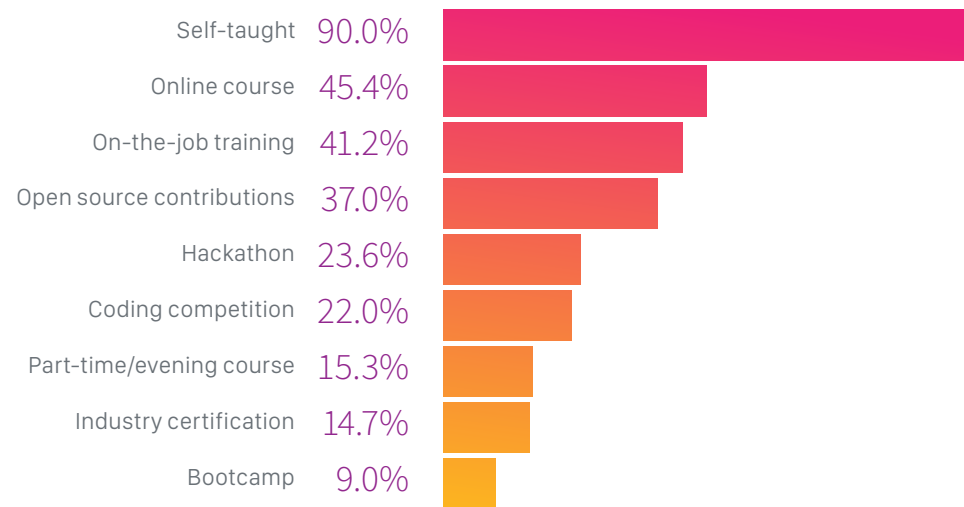




Non-Formal Education

Developers love to learn. In fact, 89% of respondents said they “agree” or “strongly agree” with the statement “learning new technologies is fun.”

Among professional developers, 56% say they’ve taken an online course, and 53% say they’ve received on-the-job training.



Self-Taught Developers

If 90% of developers are at least partially self-taught, how are they teaching themselves? The two most common ways developers teach themselves are through official documentation and Stack Overflow Q&A (each at 80%).

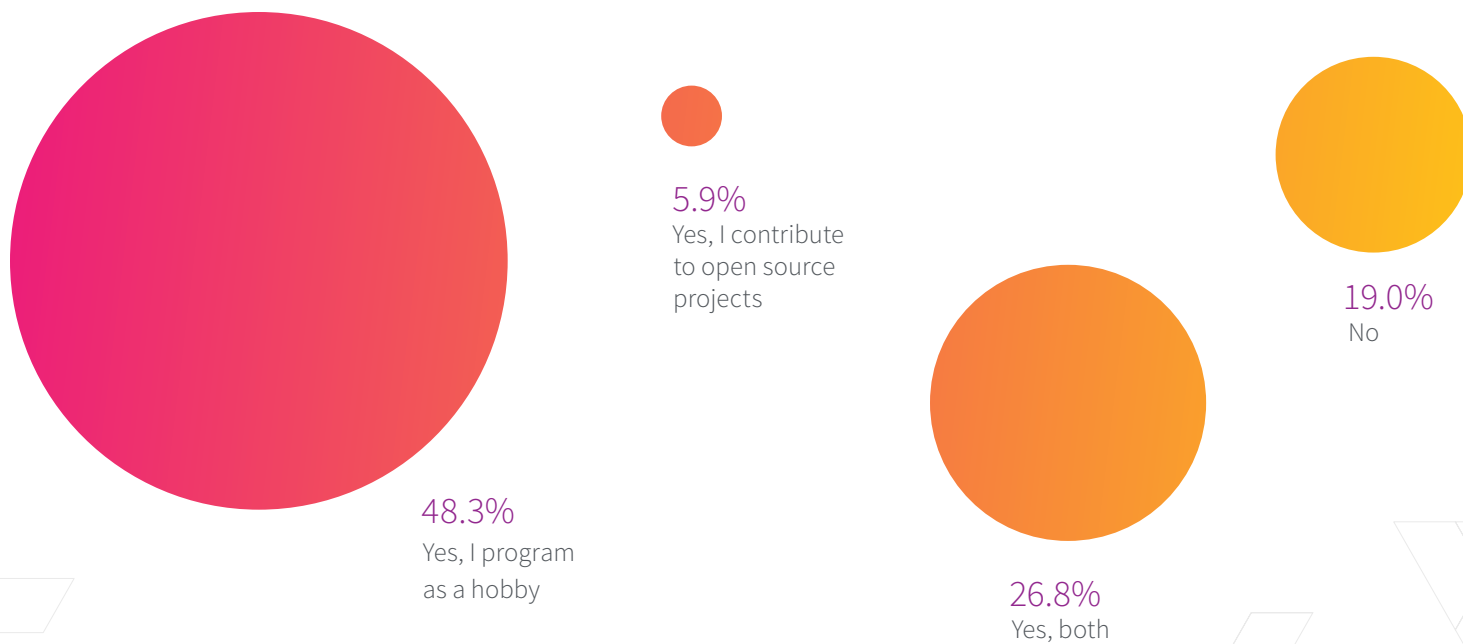


Hobbies & Open Source

For many developers, coding isn't just a career; it's a passion. That's why many developers create their own side projects and contribute to Open Source in their spare time.

Among all developers, 75% code as a hobby, (for professional developers, this number is 73%).

About one-third of all developers contribute to open source projects. Developers who do both? They make up about 27% of total respondents.





CHAPTER IV
DEVELOPER COMPENSATION

Average Salaries

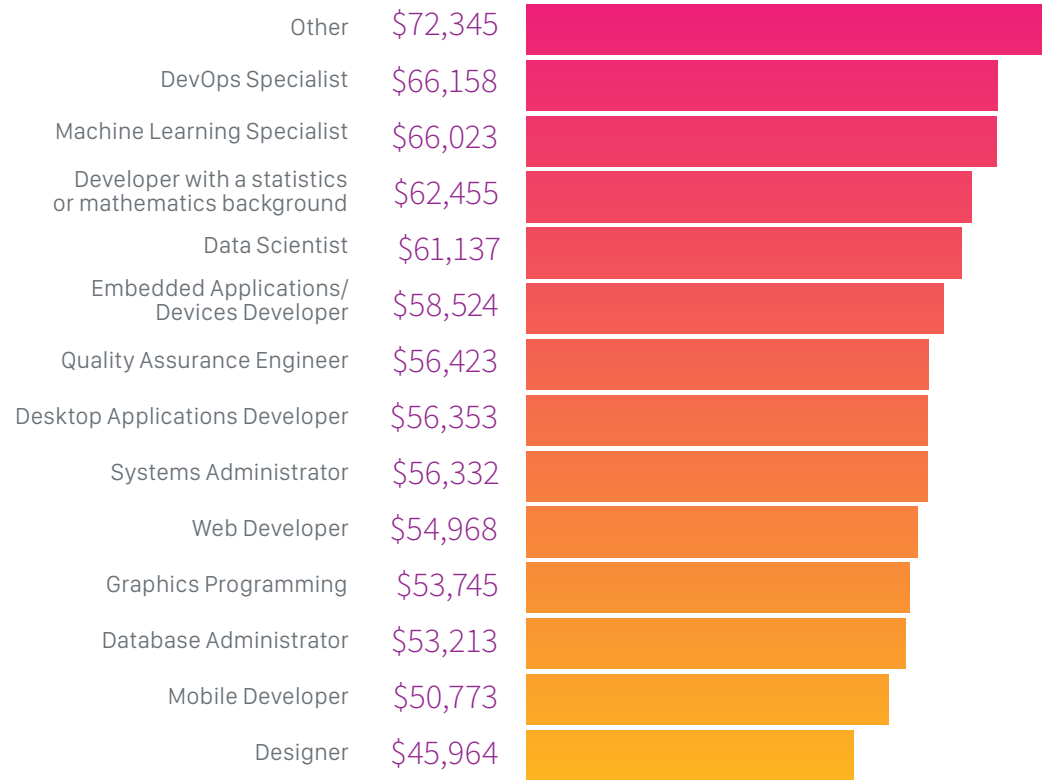
Salary Expectations Compared to Market Value



Average Salaries

There are three main markets for most types of developers: the United States, where developers command very high salaries; Western Europe, where their services come at slightly less of a premium; and the rest of the world, where their salaries tend to be much lower. A lot of this has to do with supply and demand for talent, as well as the cost of living in these markets.

In general, more specialized roles such as data science and DevOps command higher salaries, while more general roles such as web development command lower salaries. Mobile Developers saw the highest variation across regions in terms of salary earned.



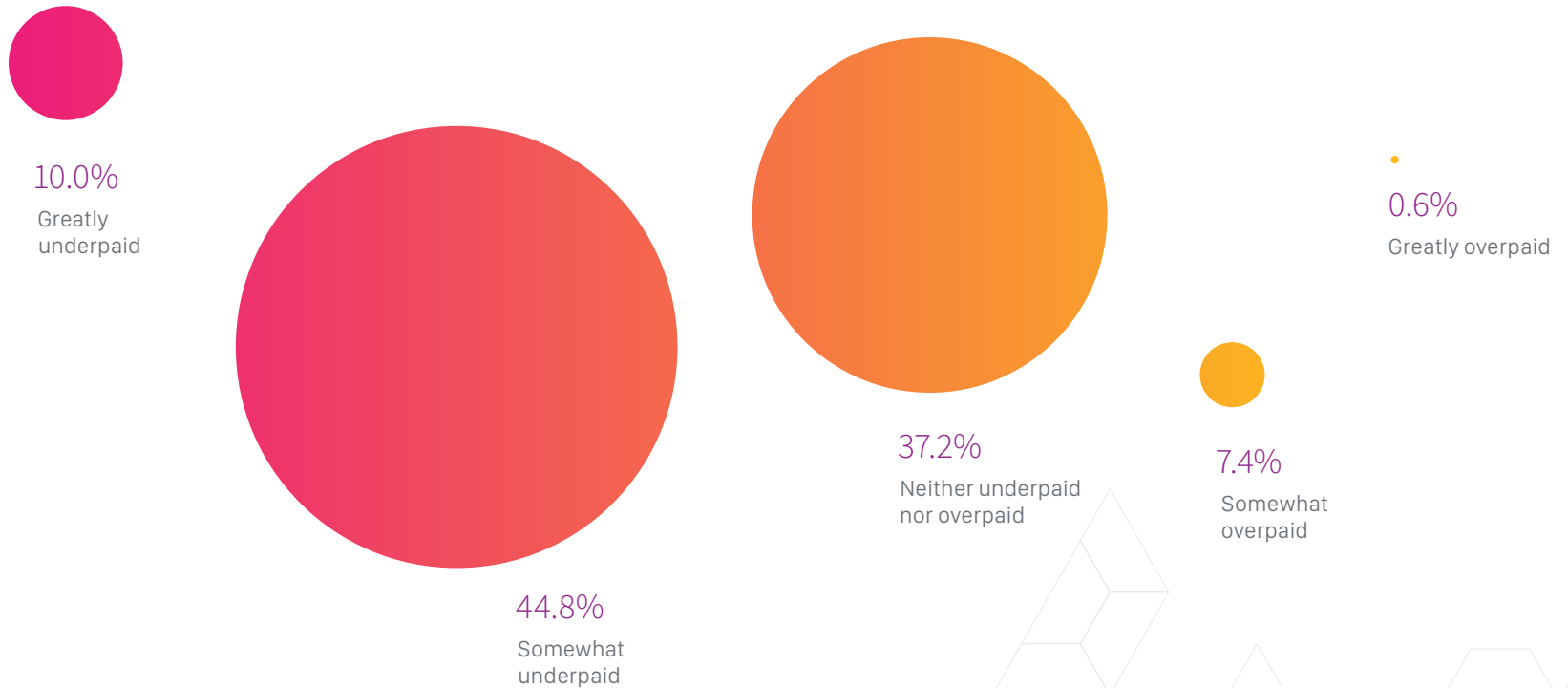
	North America	UK & Ireland	DACH	France	Rest of Europe	Rest of World
95%	\$155,000	\$97,500	\$106,000	\$70,968	\$75,269	\$90,206
75%	\$115,000	\$62,500	\$66,387	\$49,462	\$44,444	\$38,710
50%	\$87,275	\$50,000	\$53,763	\$40,860	\$28,395	\$14,682
25%	\$62,879	\$37,500	\$43,011	\$34,409	\$15,468	\$5,096
5%	\$37,879	\$25,000	\$5,400	\$15,054	\$1,253	\$514

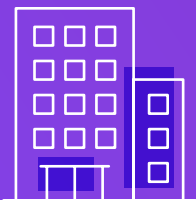




Salary Expectations Compared to Market Value

Overall, most developers feel underpaid. Developers who work in Government and Non-Profits feel the most underpaid (about 65%). In contrast, 9% of developers who work in Finance feel overpaid.





CHAPTER V
DEVELOPER EMPLOYMENT

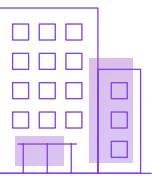
Employment Status

Industry

Company Size

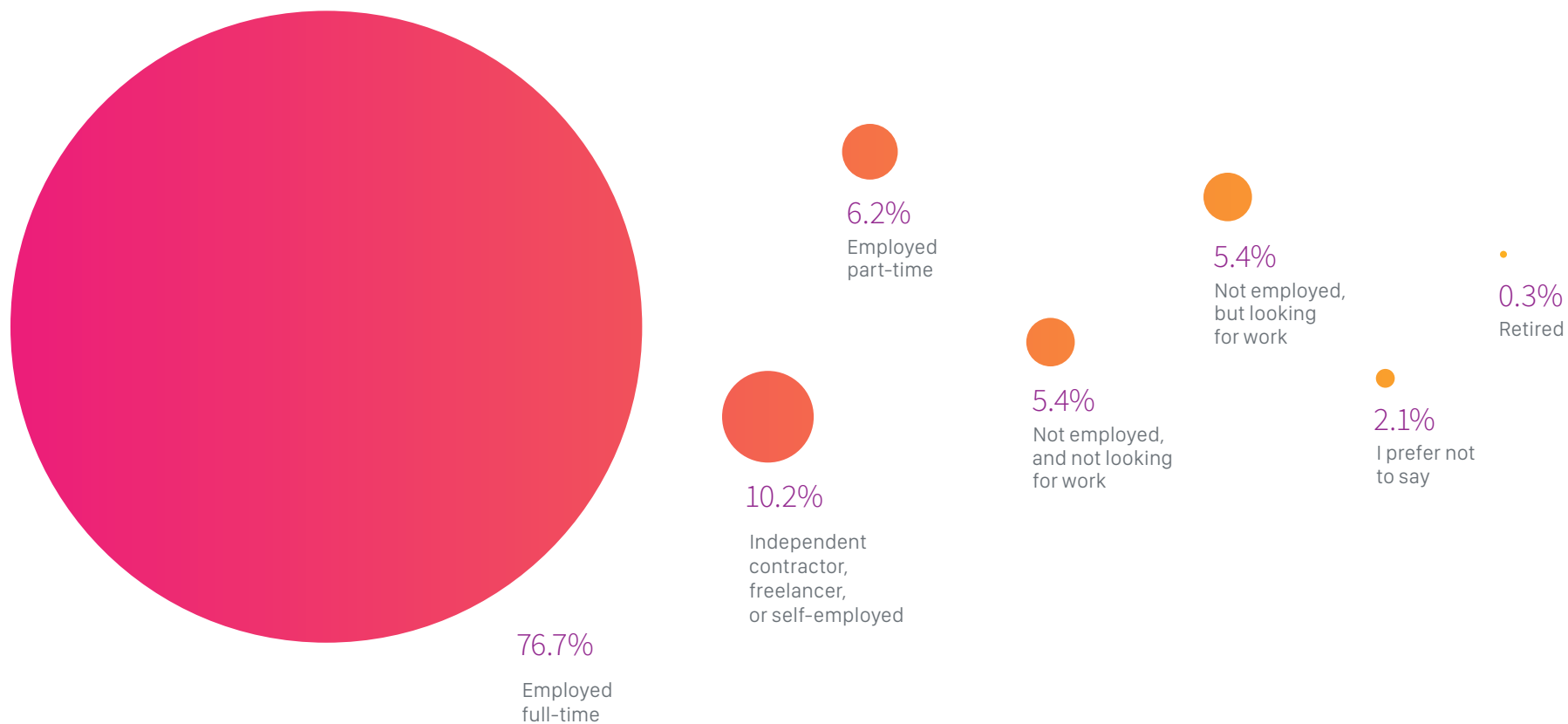
Type of Company

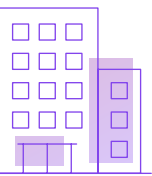




Employment Status

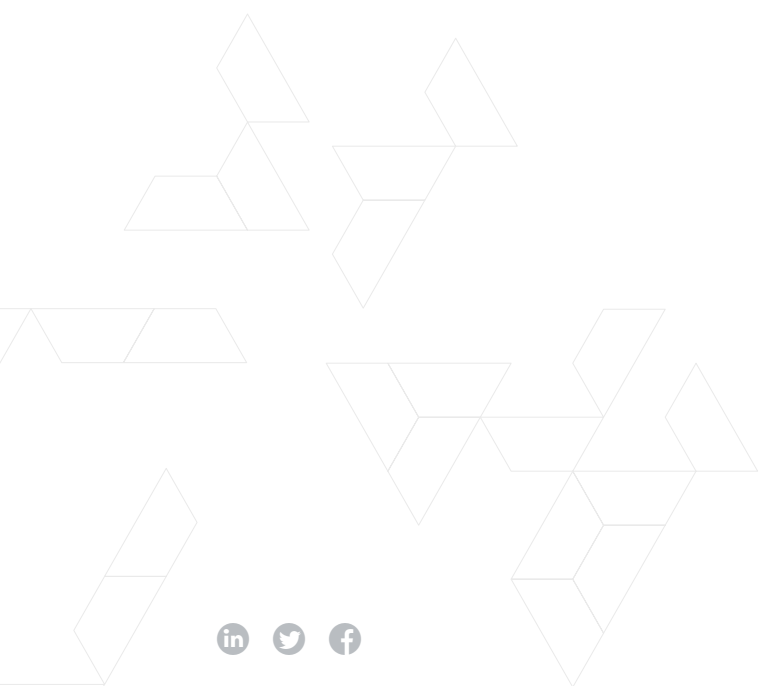
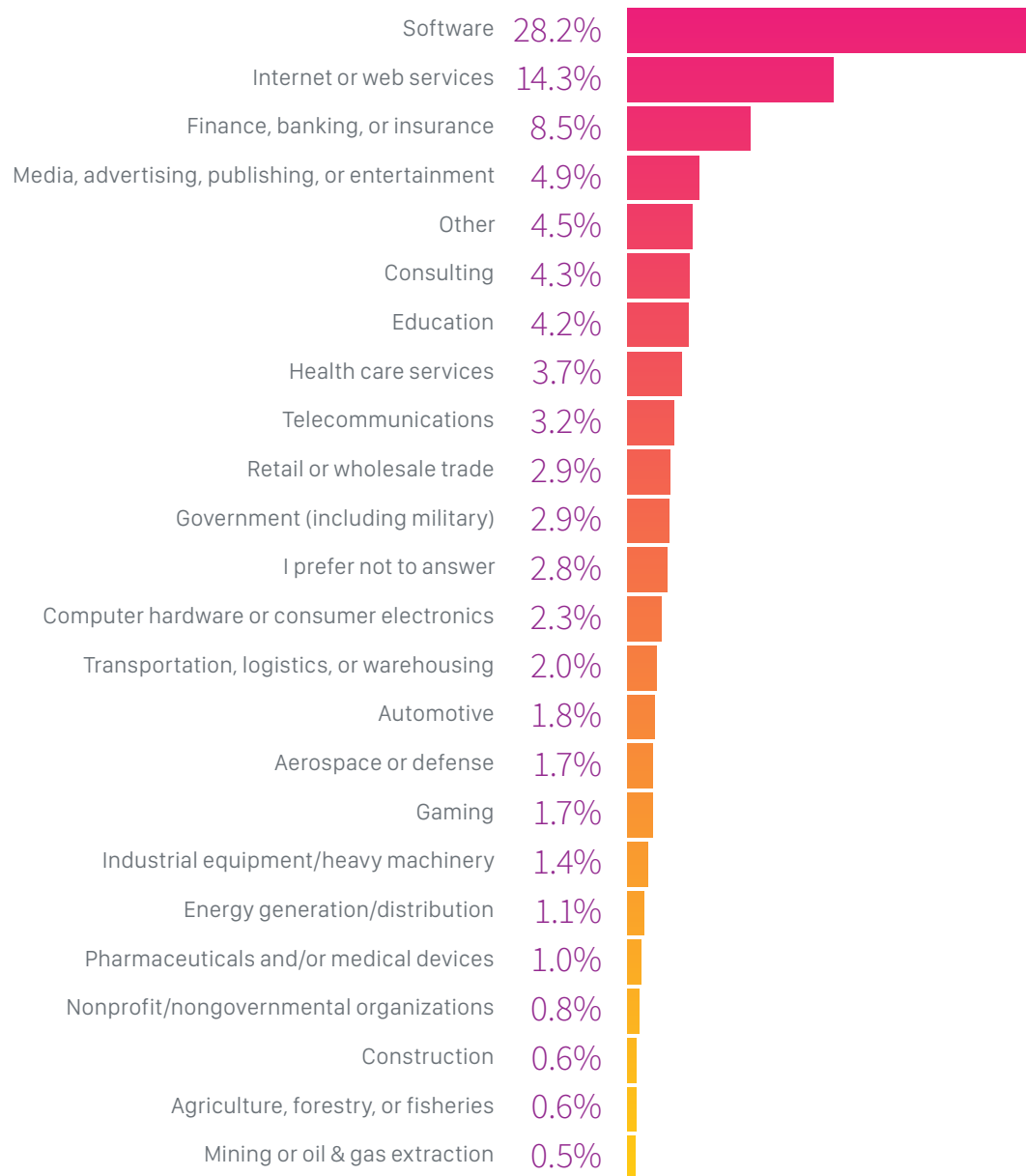
We've said it before and we'll say it again — the demand for technical talent far exceeds the supply. A majority of developers (70%) are employed full-time, while 10% classify themselves as an independent contractor, freelancer, or self-employed. Adding in developers who are employed part-time (6%), we see that 86% of developers are employed in some capacity.

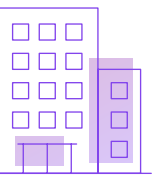




Industry

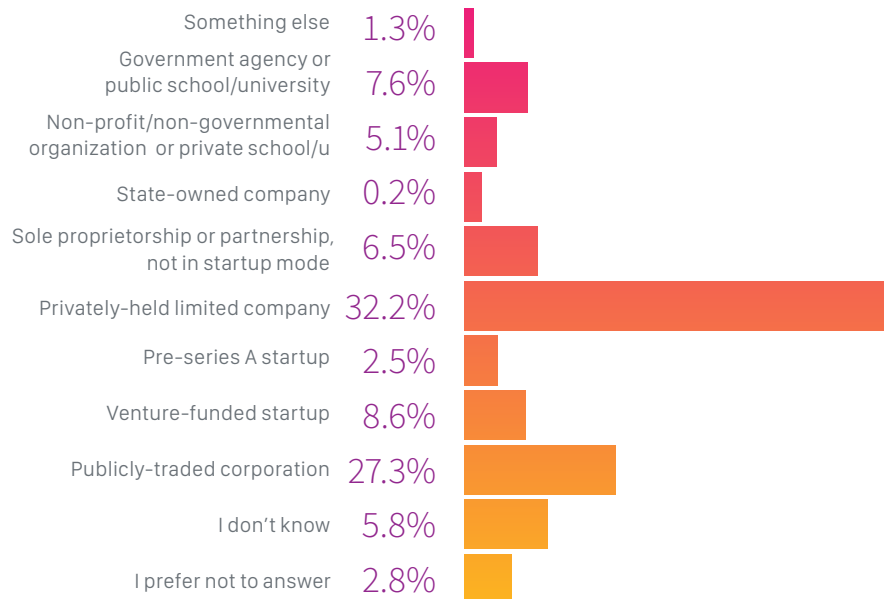
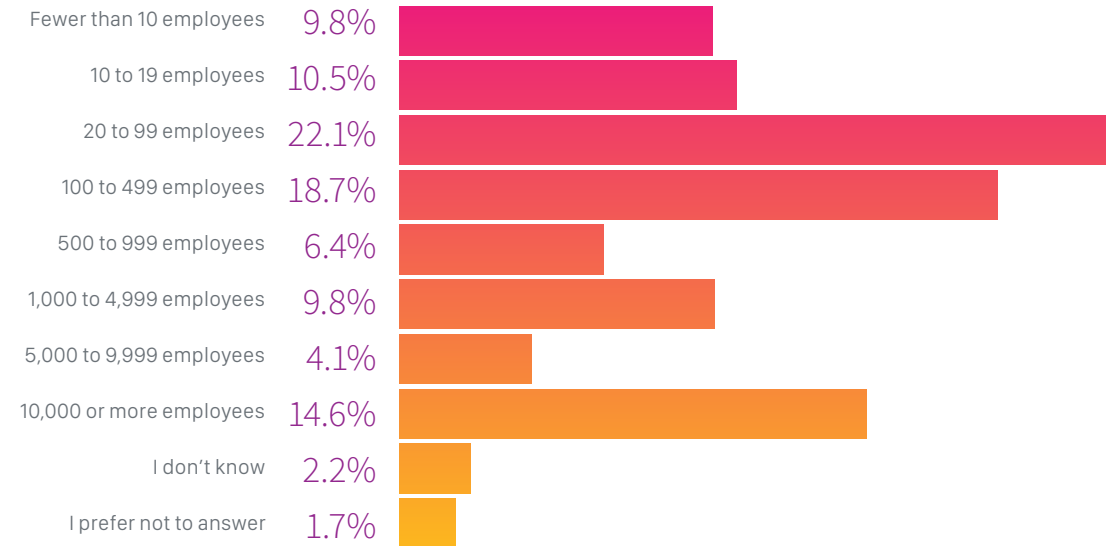
While a substantial number of developers work for software and internet/web companies (43%), they are also employed in diverse industries across the economy including finance, media, education, and healthcare.





Company Size

Developers work at companies ranging from the smallest startup to large name-brand businesses. The plurality of developers (41%) worldwide work for a company that has between 20 and 500 employees.



Type of Company

You may picture the average developer working at a tech startup, but developers are employed at many different types of companies. Worldwide, only 9% of developers work at a startup, while a majority work at privately-held companies (43%) or publicly-traded corporations (15%).



CHAPTER VI

CURRENT JOBS OF DEVELOPERS

Job Discovery

Remote Work

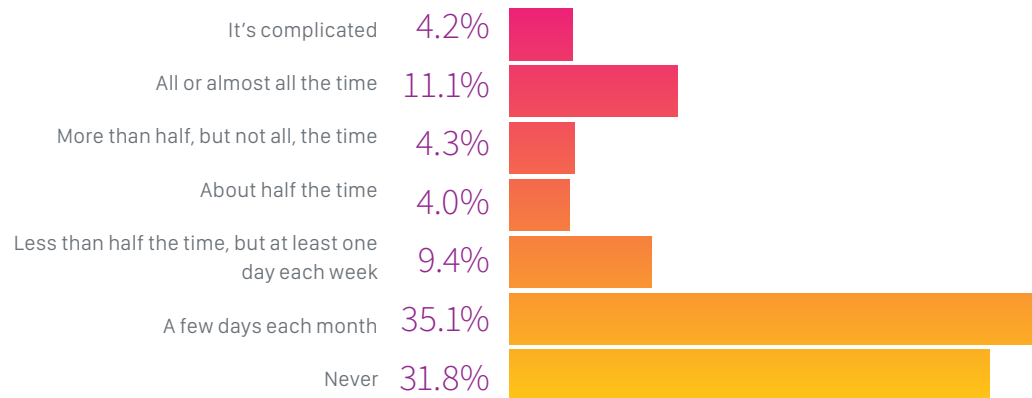
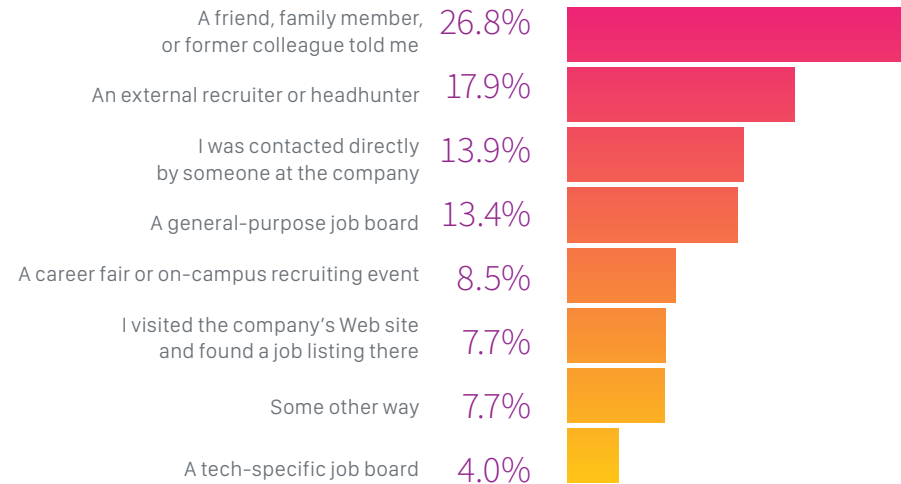
Career Satisfaction



Job Discovery

To get to the bottom of how developers discover new job opportunities, we asked respondents to think back to when they first applied to work at their current employer. More than a quarter (27%) found their job at their employer through a friend, family member, or former colleague. Developers working at private startups were more likely to have found their job through a friend than those working at other for-profit companies.

31% of developers found their current job through a recruiter of some sort (either internal or external). If you include campus recruiting events, this number rises to 39%.



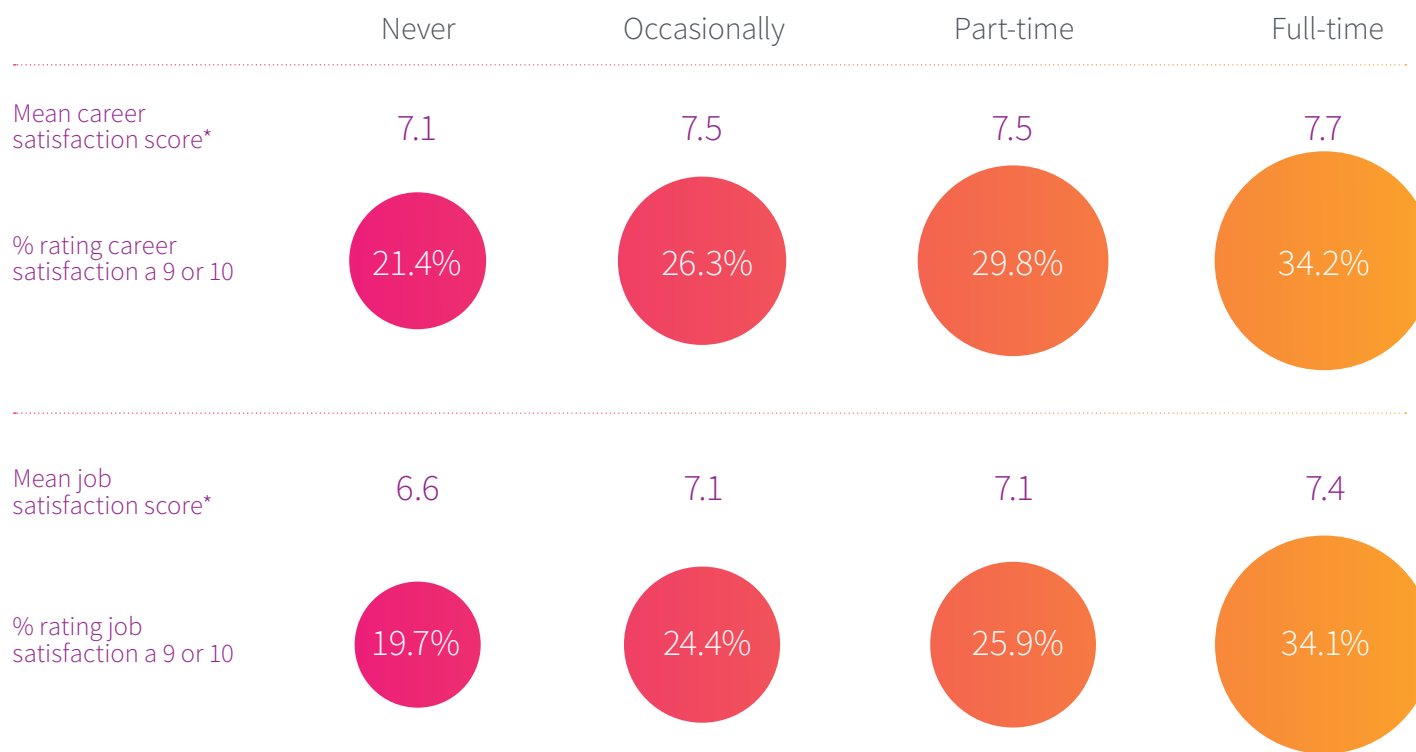
Remote Work

Globally, 15% of developers work either full-time remote or at least half-time remote. The proportion is significantly higher in the USA (16%) versus the UK (12%), France (12%), and Germany (9%).



How Often Developers Work From Home

Both job and career satisfaction are correlated with the degree to which developers work from home. If you aren't offering remote work options, it may be time to rethink your decision.



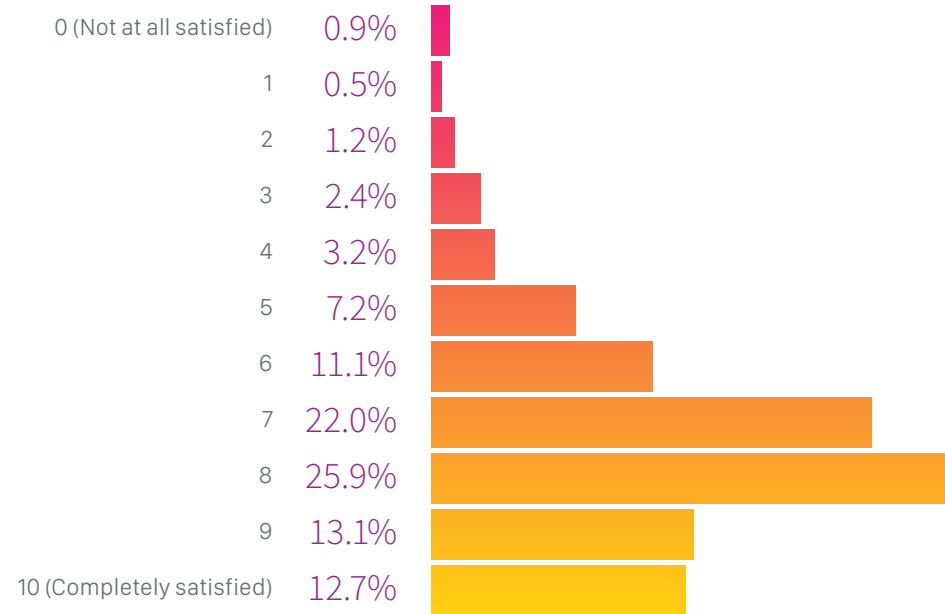
*On a scale from 0 to 10, where 0 is "Not at all satisfied" and 10 is "Completely satisfied".



Career Satisfaction

Career satisfaction can be hard to measure since every developer's situation is so unique. However, there were a few trends that stood out from the data.

- ✓ Average career satisfaction “jumps” to a slightly higher level after a developer has more than 4 years of experience. This suggests that employee training and retention efforts should especially focus on junior developers, who are more likely to consider transitioning to a different career.
- ✓ In general, developers are more satisfied with their career overall than with their current job.
- ✓ Career satisfaction is much lower among developers who are actively looking for a job (the mean satisfaction rating for those actively looking is 6.3, versus 7.2 for those passively receptive, and 8.1 for those not interested in new opportunities).
- ✓ Overall career satisfaction does not vary significantly by industry.





CHAPTER VII

THE DEVELOPER JOB SEARCH

Current Job-Seeking Status

Time Spent Looking for Job Opportunities

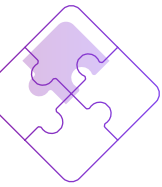
Last Time Developers Took a New Job

Why a CV Was Last Updated

Job Evaluation Criteria

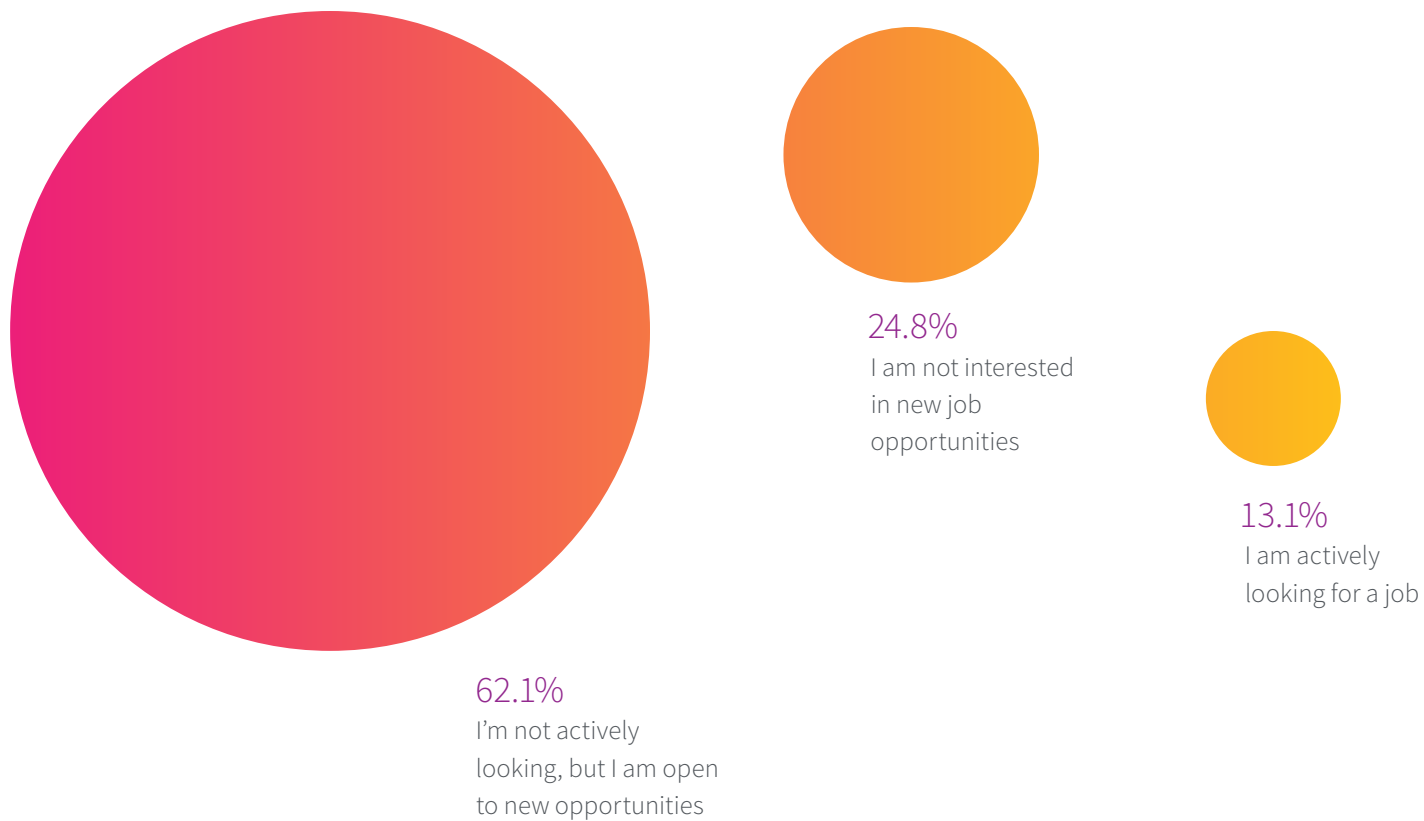
Importance of Benefits

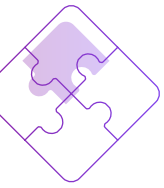
Tips for Tech Hiring



Current Job-Seeking Status

While a large majority of developers are currently employed, that doesn't necessarily mean they aren't open to new job opportunities. In fact, although 62% of developers aren't actively looking, they are open to hearing about new job opportunities. Additionally, 13% of developers globally are actively looking for a job, while 25% are not interested in new opportunities at all.

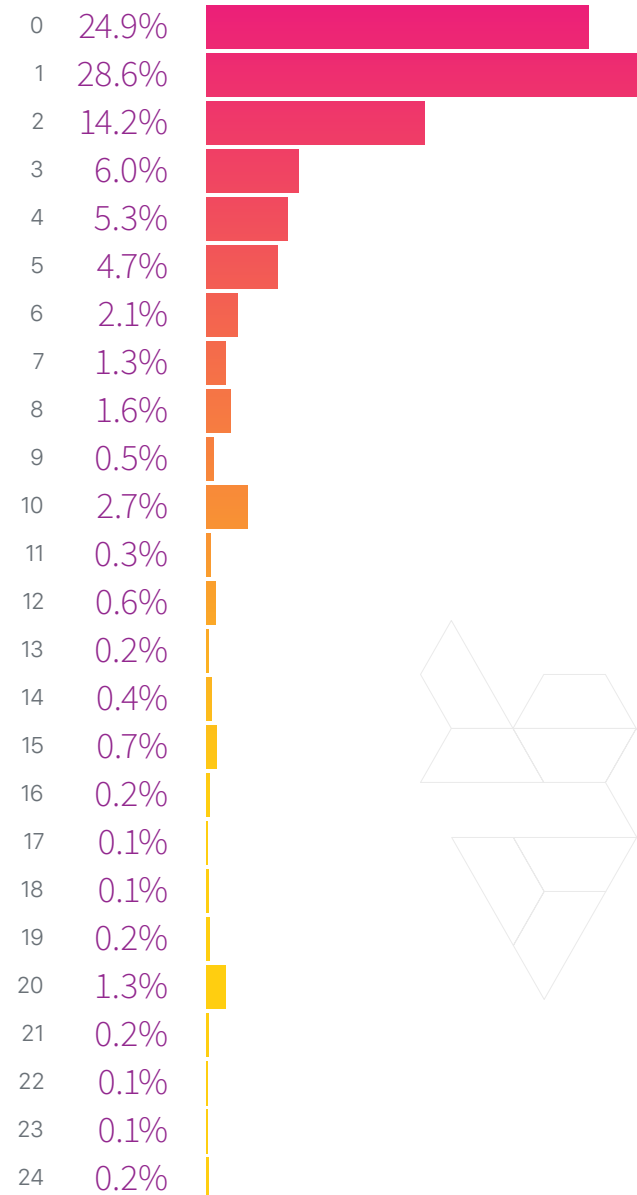


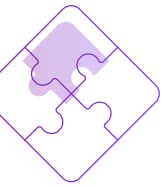


Time Spent Looking for Job Opportunities

Even though many developers are open to hearing about new opportunities, a large percentage of them don't spend much (or any) time looking for their next opportunity. Around 43% of developers spend between 1 and 2 hours per week searching for jobs—and about 25% of developers don't spend any time searching for jobs.

However, if we look at developers who are actively looking for a new job, the median number of hours spent jumps to 5 per week. Those who are open to new opportunities (but not actively looking) spend about 1 hour per week looking.

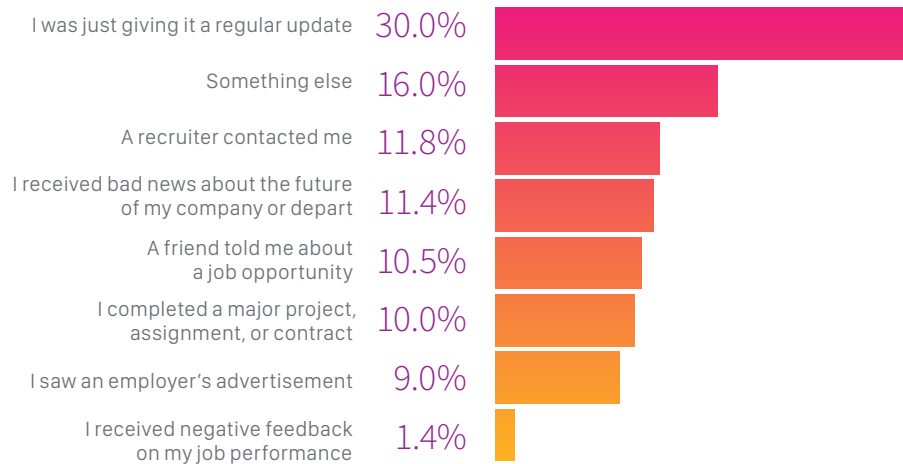
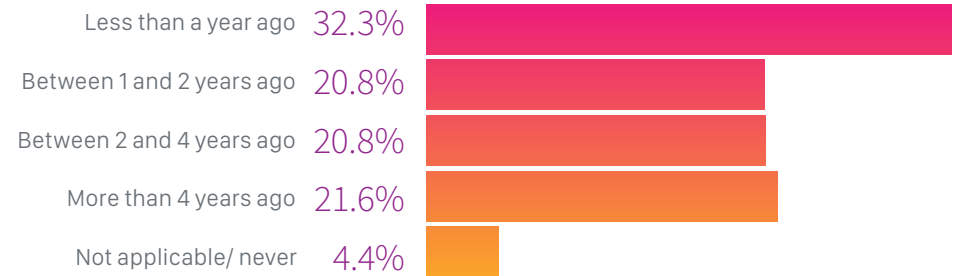




Last Time Developers Took a New Job

Developers change jobs for a variety of reasons. In some cases, they may be looking for a new set of challenges. In others, they might receive a better salary at another company. Since developers are more in-demand than ever, they have the freedom to switch jobs more frequently than other professionals.

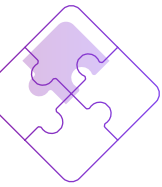
32% of developers took a new job less than a year ago, while 22% have been in their current role for more than four years.



Why a CV Was Last Updated

In [last year's survey](#), we asked developers about the annoying parts of searching for a job. Maintaining an up-to-date CV was at the top of their list. This year, we asked developers to think back to last time they updated their CV and tell us why they made the update.

Almost 48% of developers updated their CV/resume because of something related to a potential job opportunity, while 30% said, "I was just giving it a regular update."



Job Evaluation Criteria

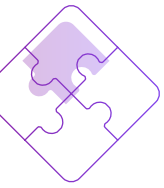
When assessing potential jobs, developers (specifically those who are either actively looking or passively receptive to job offers) look for a few unique aspects. At the top of the list is opportunities for professional development, the compensation and benefits offered, the office environment, and the technologies/languages they'd be working with.

There were a few interesting geographical differences to note in these results.

- ✓ The reputations of a company's senior leaders are much more important to developers in the United States than they are to developers in Germany (it's below the global average in Germany, and above the global average in the USA).
- ✓ The flexibility to work from home was much less important to developers in Germany and France than it was for programmers in the UK and United States.



*On a 0-4 scale, where 0 indicates 'Not at all important' and 4 indicates 'Very important'

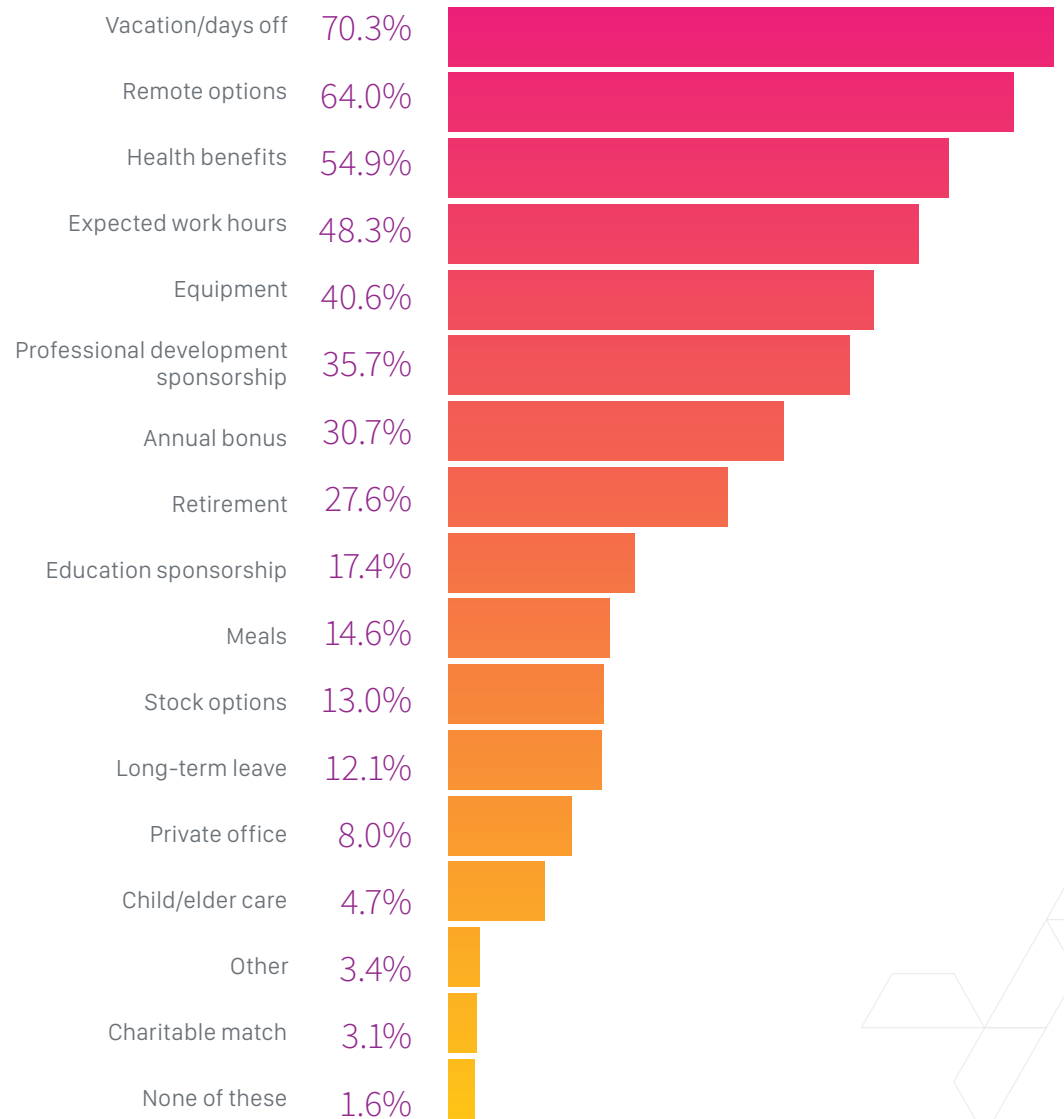


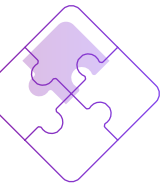
Importance of Benefits

We asked developers what they value in their compensation/benefits packages aside from their salary. Globally, the most important benefits were vacation days, the option to work remotely, health benefits, expected work hours, equipment, and professional development sponsorship.

Not sure what developers in your location care about most? Just ask them!

**For this question respondents were allowed to select up to five of 16 responses, including an "other" write-in.*

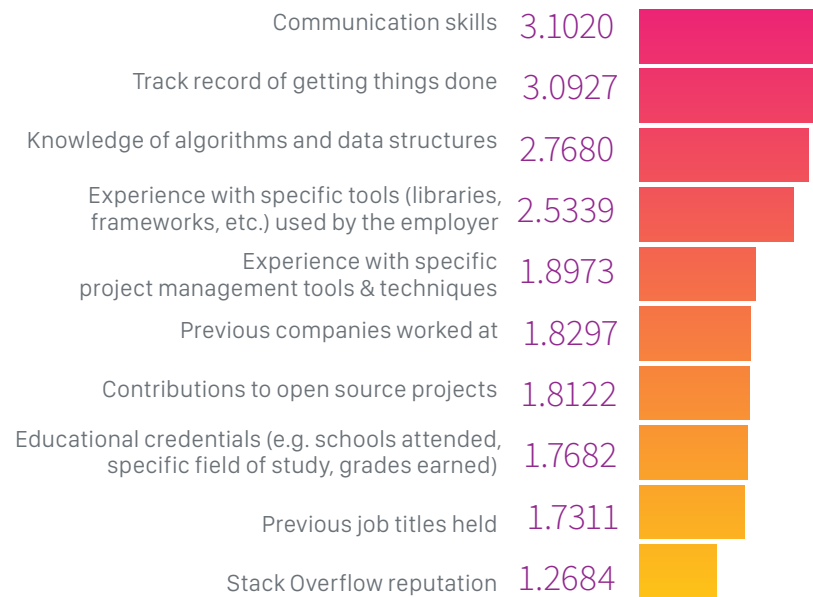




Tips for Tech Hiring

Some companies consider the feedback from their developers as vital to their recruiting and hiring process. Others simply rely on hiring managers and HR teams to get the job done. Either way, we asked developers what they think employers should prioritize when hiring a developer.

Our main takeaway? Developers say that it shouldn't matter where you went to school or what your previous job title was, but moreso that you can get things done and communicate well while doing it.



**On a 0-4 scale, where 0 indicates 'Not at all important' and 4 indicates 'Very important'*





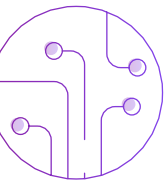
CHAPTER VIII
TECHNOLOGIES, LANGUAGES, AND TOOLS

Languages

Frameworks, Libraries, and Tools

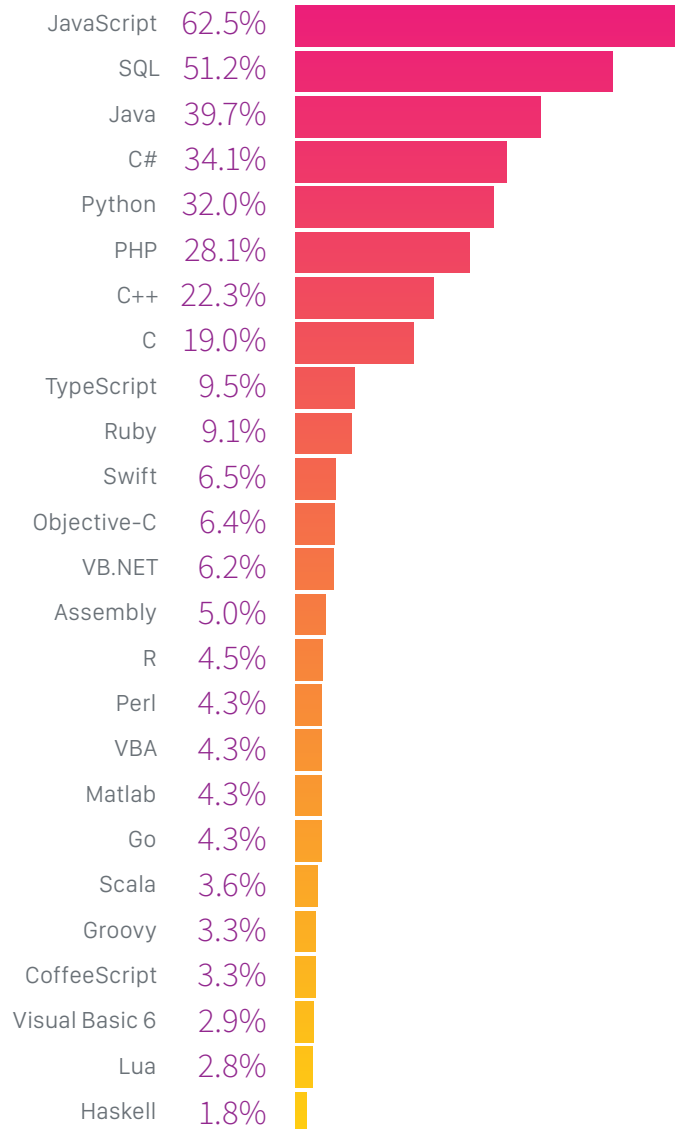
Database Technologies

Platforms

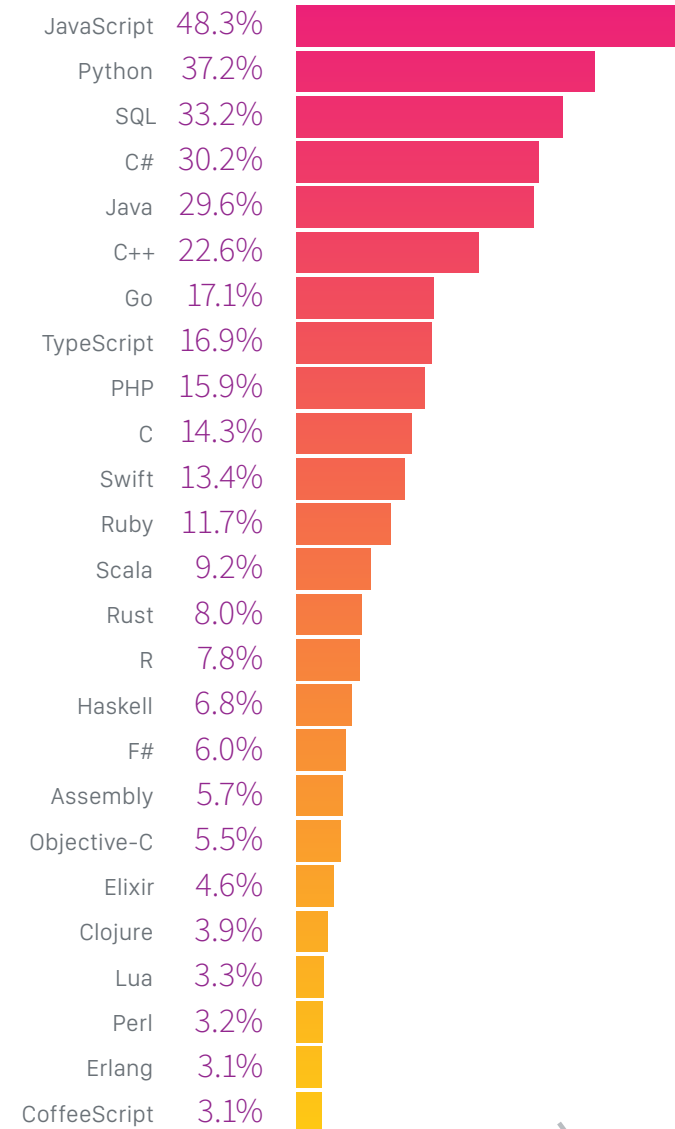


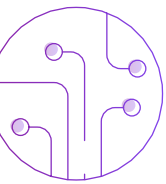
Languages

Most Used Languages



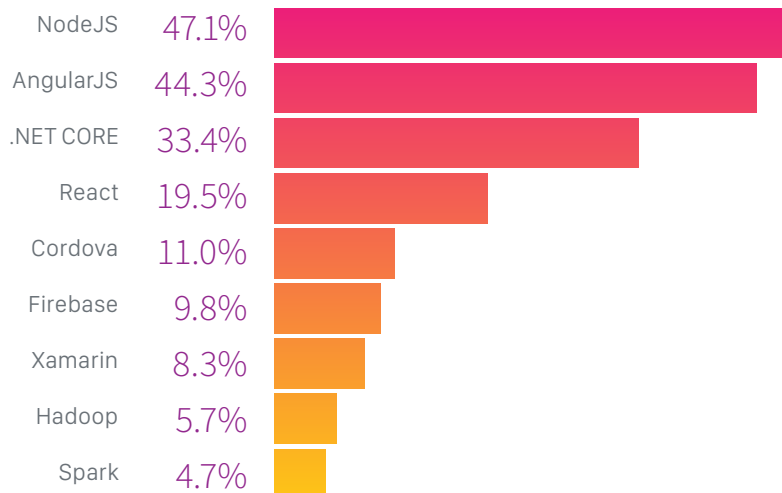
Most Wanted Languages



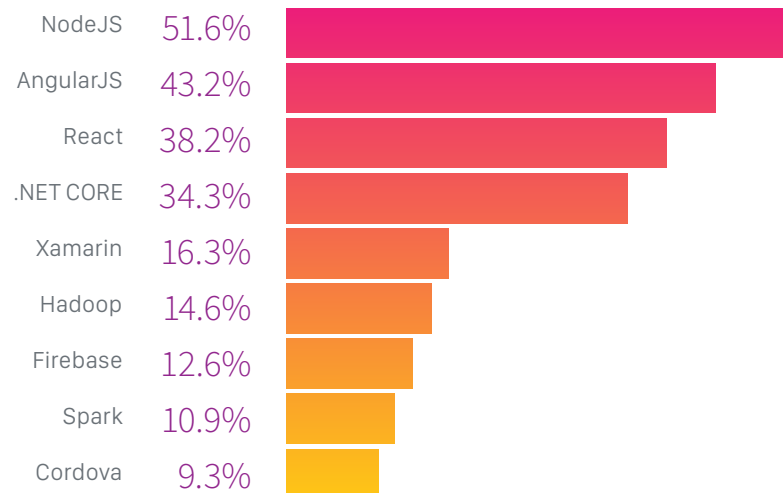


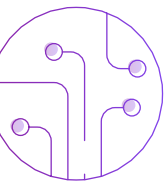
Frameworks, Libraries, and Tools

Most Used Frameworks



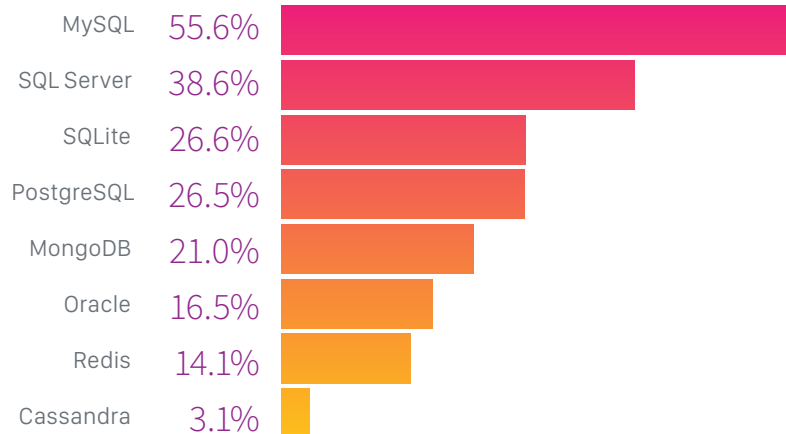
Most Wanted Frameworks



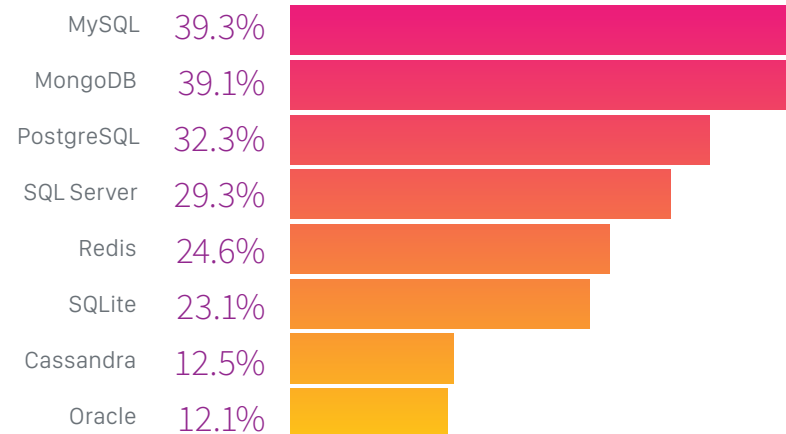


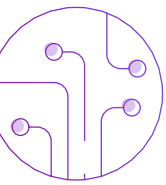
Database Technologies

Most Used Databases



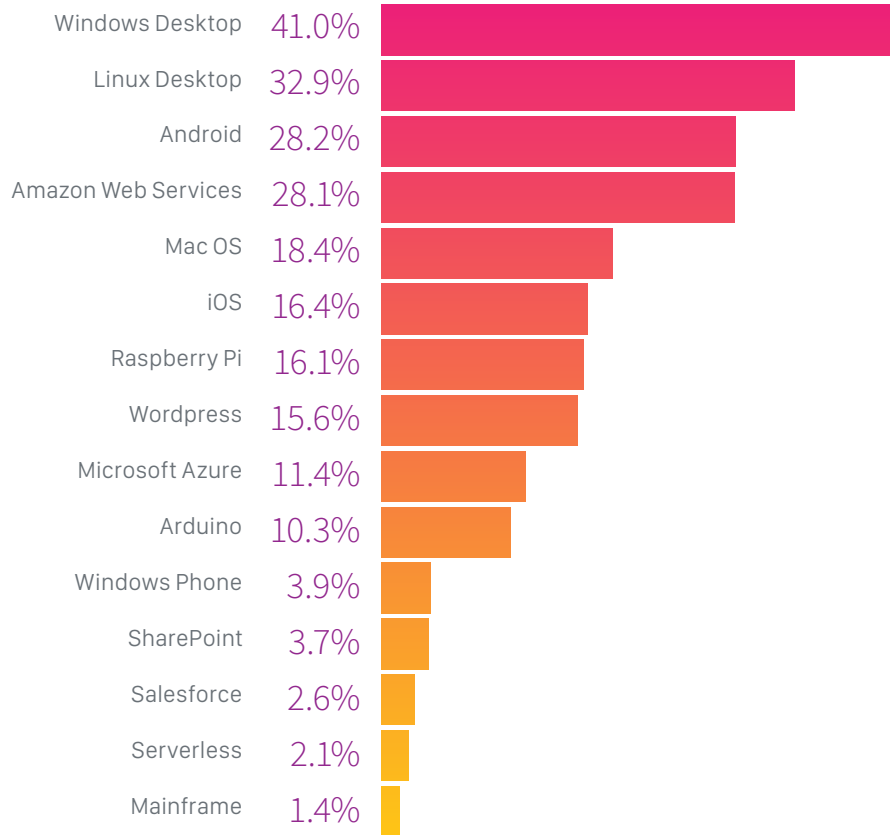
Most Wanted Databases



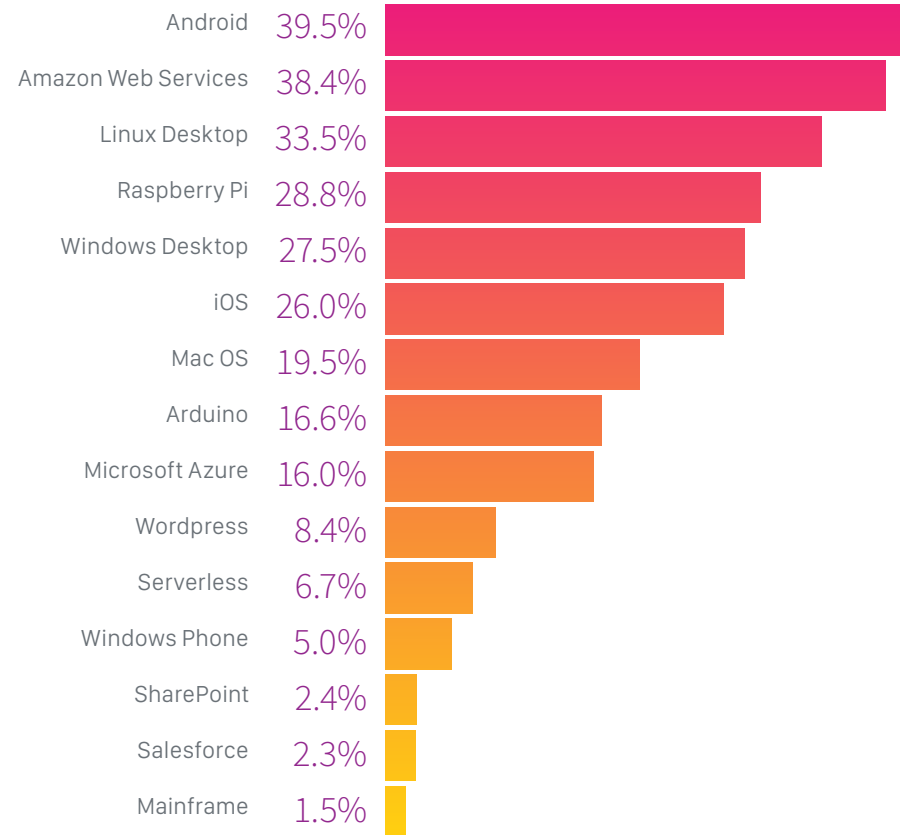


Platforms

Most Used Platforms



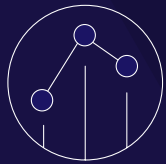
Most Wanted Platforms





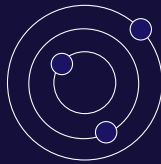
Hiring Developers is Hard. We Make it Easier.

With Stack Overflow Talent, you can:



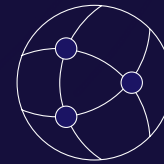
UNDERSTAND

Learn all about developers and the industry they work in.



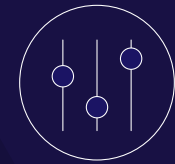
BUILD

Nail your employer branding and messaging to resonate with developers.



SOURCE

Find technical talent with a combination of our tools.



MANAGE

Get help managing your hiring process.

[Talk to an Expert](#)

