

Devskiller Global Technical Hiring & Skills Report 2019

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Introduction

The importance of the digital revolution means that the demand for skilled software developers is only going to continue to grow. With that growth will come a greater need to discover which developers have the technical skills you need.

When we started Devskiller, we had one simple goal in mind, find the best way to determine if a developer candidate has the right technical skills for the job. Pretty soon it became clear that providing a tool wasn't enough. We also had to give recruiters the information they needed to hire the best developers. Our [Tech Recruitment Certification Course](#) furthered our mission. It did this by providing the technical hiring community with the information it needed to hire the right developers to fill their open positions. That effort showed us that success with technical hiring goes hand in hand with actionable information.

To continue supporting our mission of helping the technical hiring community, we have decided to open the doors to our platform. For the first time ever, we are sharing the insights we have learned from a year of testing 112,654 developers from over 120 countries for companies in over 40 countries throughout 2018. From this, we were able to get technical hiring geographical insights which shed light on the international flow of tech recruitment.

I look forward to seeing you use this data to further your technical hiring efforts in the years to come.

Jakub Kubrynski

Devskiller CEO

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I. Technical recruitment insights



1

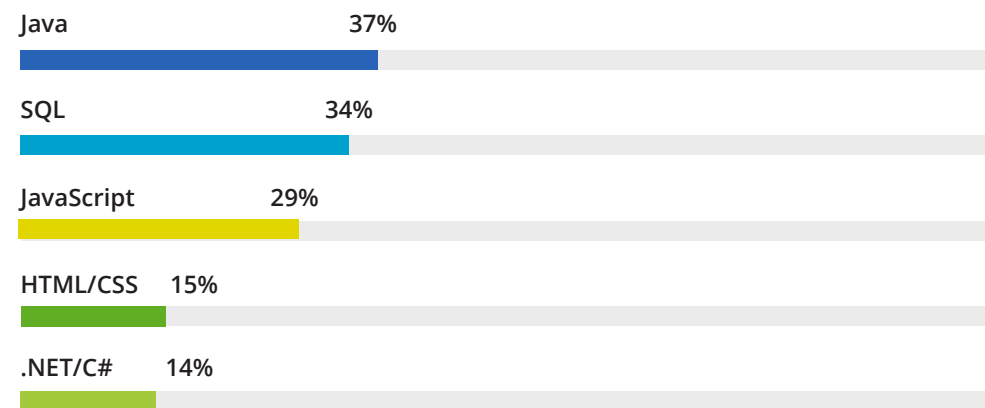
Java is the most popular language devs are tested in (37%)

If you look at all the technical skills tests sent to developers, you will see that Java leads the pack. Following close in its footsteps is SQL, with JavaScript rounding out the top 3. Below that, HTML/CSS come in fourth and .NET/C# come in fifth, rounding out the top 5.

Multiple technologies can go into each test so it is possible that some of the Java tests and SQL tests are the same. Don't worry, we will go a bit further into the most common pairings of technical skills later in the report. Needless to say, what you see is a lot of front-end technologies paired with HTML/CSS and a lot of back-end technologies paired with SQL. This accounts for these two languages' prominent positions on the list.

But the continuing dominance of Java is no surprise to anyone. This mirrors broader trends which are reflected in the TIOBE rankings. Companies use the [TIOBE Programming Community Index](#) to make strategic decisions regarding language choice for building new software systems. It can also be used to check whether a developer has the most up-to-date technical coding skills. Java has dominated this ranking for a good portion of the last 20 years and continues to maintain its position.

The top 5 languages tested on Devskiller (based on test invites)



Why don't the percentages add up to 100%?

2

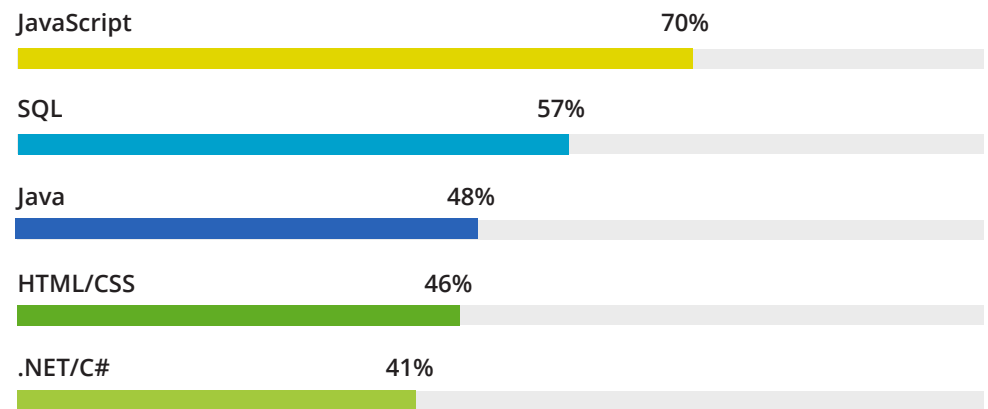
70% of companies want to hire a JavaScript developer

While Java is by far the most tested language, it is not in the top two technical skills that most companies are looking for. We took a look at the technologies tested by the highest number of companies and were surprised that the answer wasn't Java. Instead, that title goes to JavaScript. As you can see, over 70% of the companies on the platform test JavaScript technical skills.

What this shows is that Java is used by a smaller group of large enterprises. On the other hand, it is clear that more companies of all sizes are looking for developers with JavaScript technical skills. Database skills are important for both back-end and front-end developers so SQL stays in the second place. Front-end skills like HTML and CSS come in fourth.

It is no surprise then that you see the same top 4 technologies here advertised for on the job board of [Hacker News](#). Our findings also support the [2018 Stack Overflow Developer Survey](#) results which indicate that JavaScript is the most commonly used language for the sixth time in a row. In fact, the top 5 list contains the same technologies as the top technologies used by professional developers in that survey (HTML and CSS are counted separately) with the exception of Bash/Shell.

The top 5 technologies the most companies are looking for technical skills in



Why don't the percentages add up to 100%?

3

Most developers will get a database skills assessment, regardless of their main focus

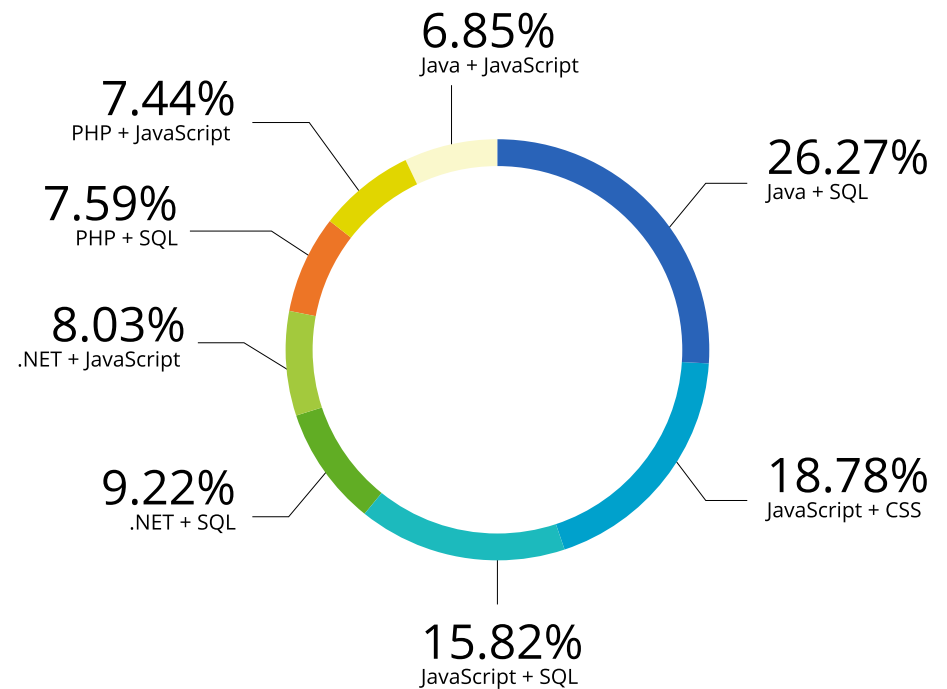
If I were to ask you what technology integrates with the most others, what would you guess? If you said it was JavaScript, then you would be correct. We looked at the top 8 technologies that are tested together and found that 5 of them of them are combinations with JavaScript.

For instance, this shows the importance of front-end skills with JavaScript being paired with CSS and HTML. Together, these technical skills make up the foundation of a solid front-end development stack.

But that is not the whole story, JavaScript is frequently paired with .NET, PHP, and Java. A combination of front-end and back-end technologies, this shows that there is a lot of demand for full-stack developers in a number of tech stacks. All of these stacks use JavaScript as their front-end language.

Coming up right behind JavaScript with 4 mentions is SQL. This proves the importance of database technical skills in addition to the main skill set needed for the position. Whether you are filling a back-end Java developer role or a front-end JavaScript developer role, database technical skills are clearly very important.

The top 8 technologies tested together

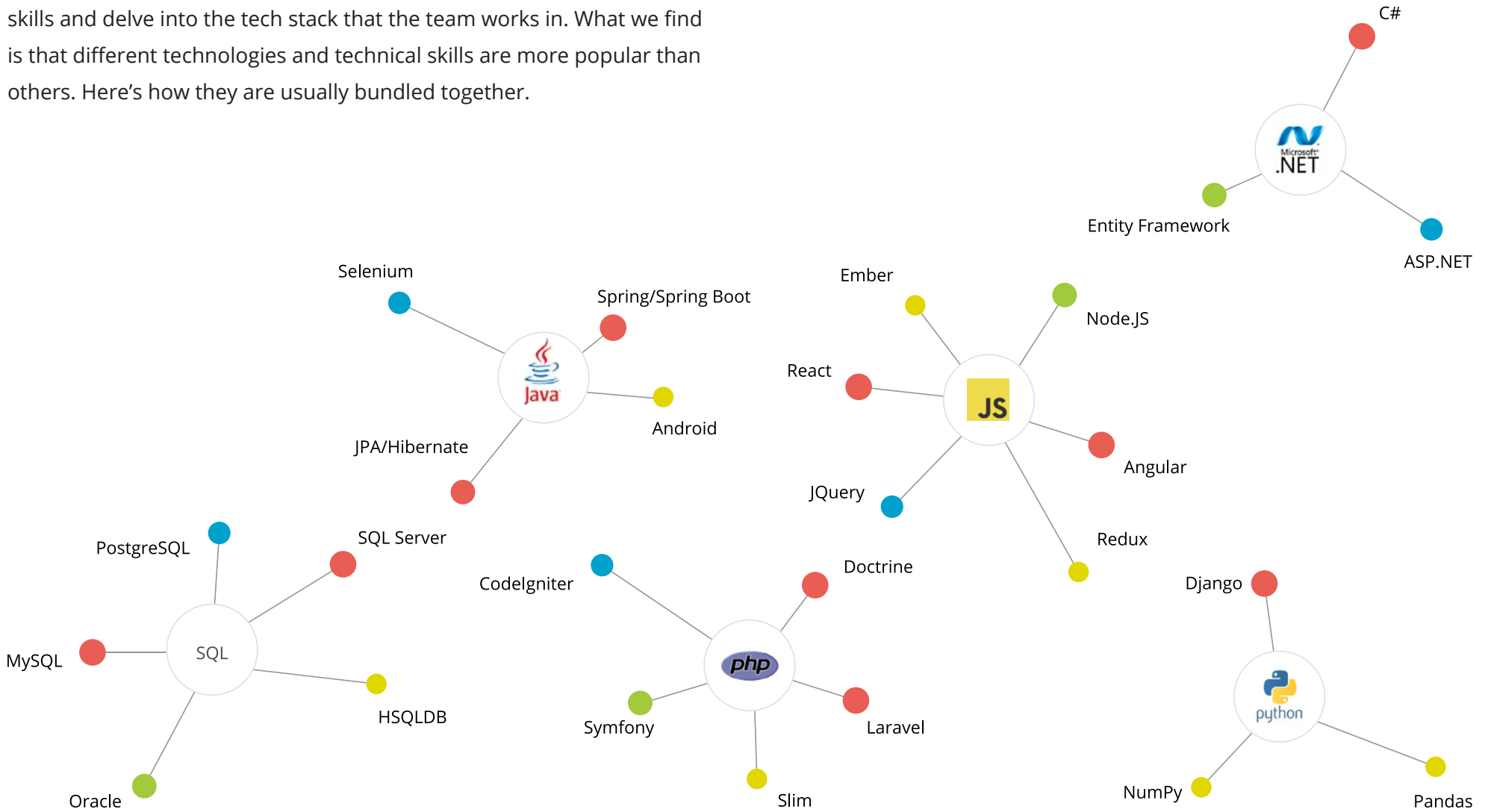


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Languages are frequently tested with other technologies in their environment

Devskiller allows recruiters and hiring managers to go beyond language skills and delve into the tech stack that the team works in. What we find is that different technologies and technical skills are more popular than others. Here's how they are usually bundled together.

The most popular tech stacks we test



5

Candidates wait on average 2.88 days to take a coding test

2.88 days

Tests sent on Tuesdays tend to take the least amount of time to be completed by the candidates (2 Days 13.91 hours). Those sent on Wednesdays usually take candidates the longest to complete (3 Days 6.44 hours). This shows that developers prefer to do take-home tests during the week and save their weekend for themselves.

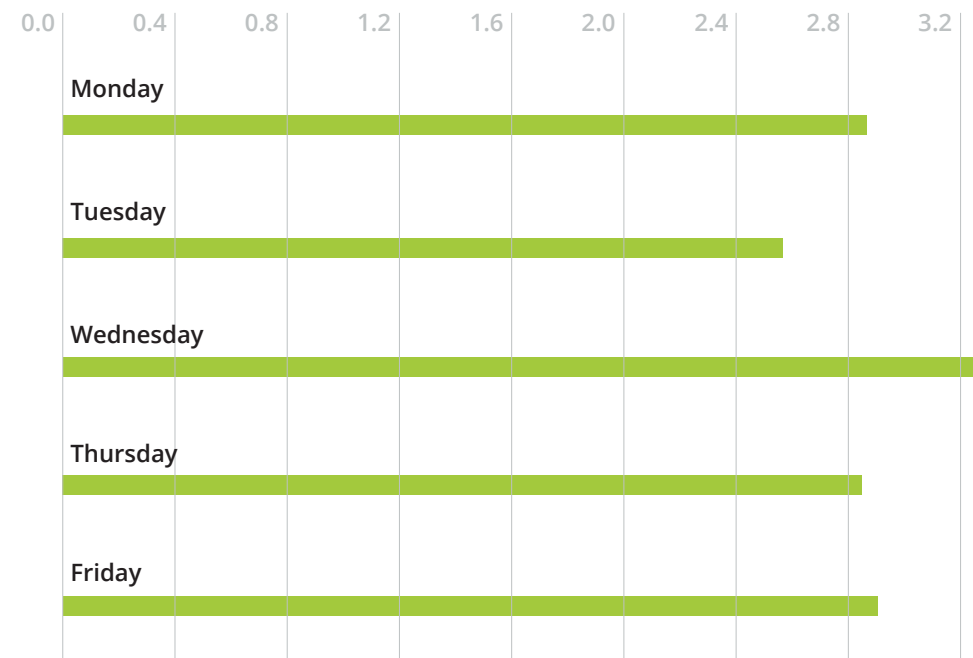
It takes on average 69.23 hours or 2.88 days for the candidate to complete a test.

6

Coding tests sent on Tuesdays get the fastest response

Coding test invitations sent on Tuesdays get the fastest response and those sent on Wednesdays typically get the slowest response. To get the fastest response from your candidates, try inviting them to take your coding test earlier in the week rather than later.

The average wait in days based on the day of the week the invite is sent



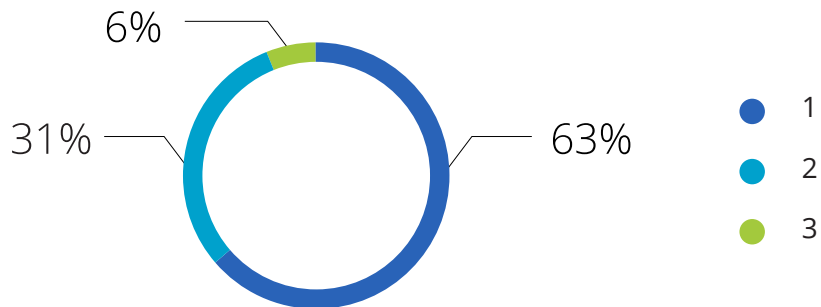
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Tech recruiters are taking some extra time to inform themselves by getting our Tech HR certificate

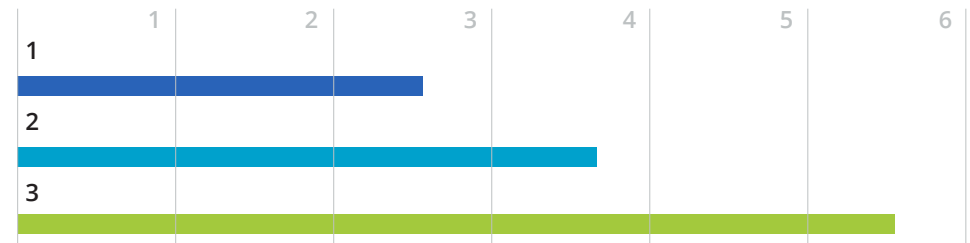
Devskiller's Tech Recruitment Certification Course is proving to be a hugely valuable resource for tech recruiters. And one of the most heartening things we have learned is that most recruiters are passing the certification on the first try.

But what we see is that candidates are taking the time they need to pour over the course materials. The average time it takes to pass the test on the first try is 18 days. What this shows is that candidates are really taking their time to study and internalize the course materials. If they pass on the second try, they usually spend another week studying. If they pass on the third try, they take about another 2 weeks to really make sure they have the right information.

The number of tries it takes recruiters to become tech recruitment certified



The time in weeks it takes recruiters to become tech recruitment certified depending on the number of tries they need to pass



Of course, we will be the first to admit that tech recruiters aren't allocating their entire day to preparing for our certification course. Still, we are glad to see that the value for this course doesn't only come from the shiny badge but from the actual content contained within. Of course, a tech recruitment certification badge looks great on a LinkedIn profile. But the most important thing is recruiters that pass now have the skills and knowledge to effectively recruit technical candidates.

8

The vast majority (73%) of candidates take the coding tests sent to them

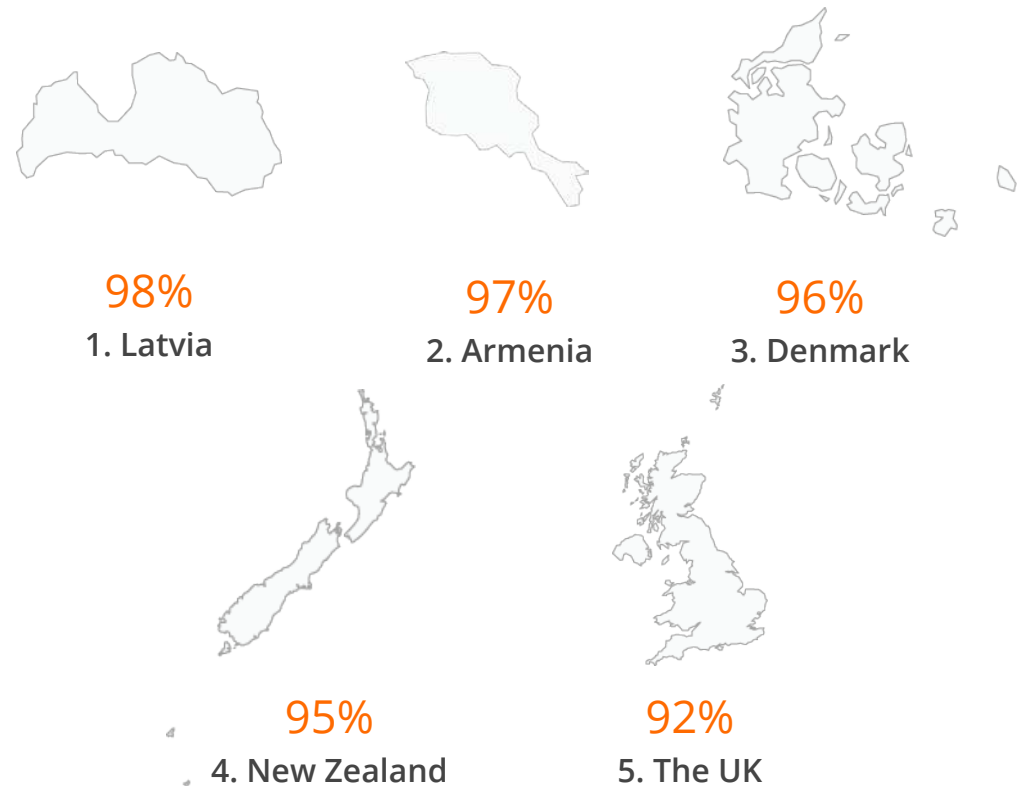
It doesn't matter what level of technical skills they have, most developers will finish a coding test based on real work principles. This shows that developers respond consistently well to the RealLifeTesting™ methodology.

A full 73% of the tests that are sent to candidates are taken. This is across the entire system and in some countries, completion rates are almost universal.

So are you worried that a developer test will cause you to lose developers from your pipeline? You probably shouldn't be. The information you gain from a work sample technical skills test is essential to hiring the best candidates. And the trade-off is quite light with most of your candidates completing the test.

What this shows is that despite the backlash against ineffective and outdated methods of developer technical skills testing, a methodology which reflects the actual work being done will be accepted by candidates. This is true no matter at what level they are at.

The countries with the top completion rates



II. The geography of technical hiring



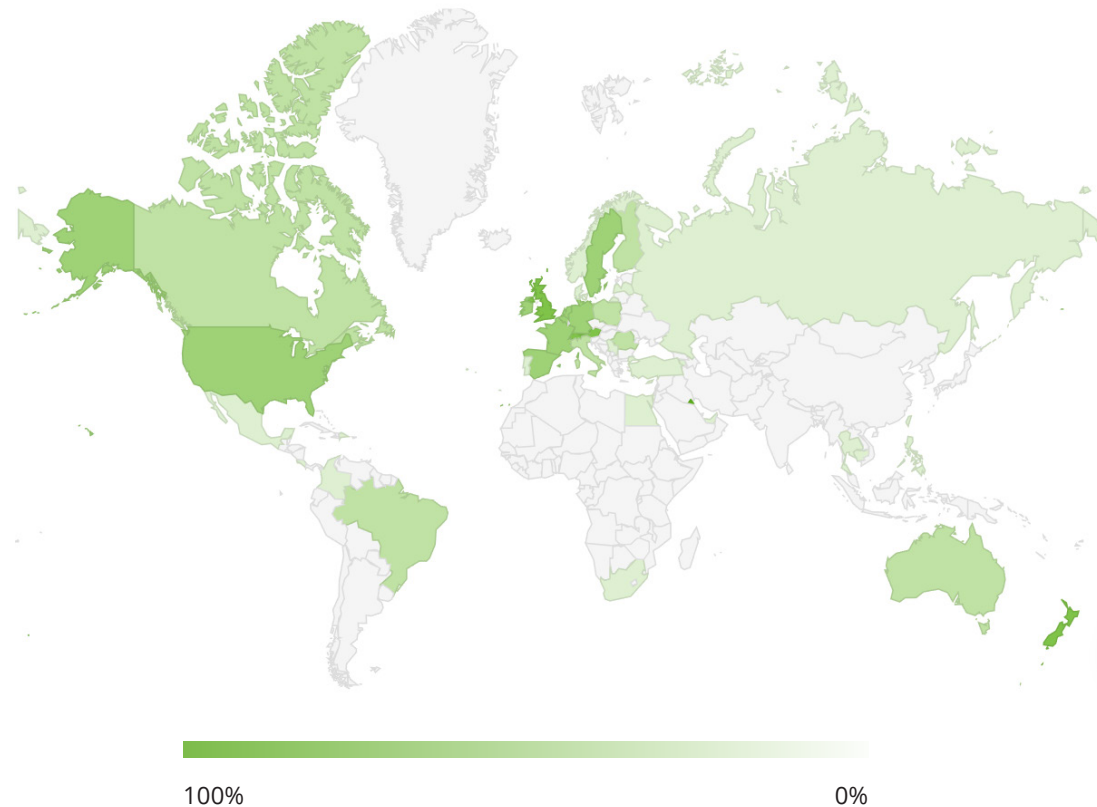
9

Companies do different amounts of overseas technical hiring depending on the country they are based in

International IT technical hiring is a growing trend across the world. IT skills are both highly modular and in demand. There are a number of reasons why companies recruit internationally. These include outsourcing, identifying employees to relocate, and finding employees to do remote work (though not as a third party).

Looking at the countries which do the most international hiring in tech, Kuwait and Singapore both have small yet vibrant economies. For these countries, along with Switzerland, Austria, Ireland, New Zealand, and the Netherlands, it makes sense that there is simply not enough tech talent in their own borders to match their needs. The UK, France, and Germany are the only large countries in the top 10. They are also some of the most prosperous economies in the world.

The percentage of international technical hiring by country



10

The US, Poland, and the UK are the top 3 drivers of international technical hiring

It is worth mentioning that despite the high proportion of candidates recruited internationally by companies from Kuwait, the highest volume of international hiring comes from larger countries like the US.

The countries that recruit the most overseas candidates and the countries they recruit from



31.23%

I. The US

- India
- Argentina
- Poland
- Sweden
- Egypt



25.23%

II. Poland

- India
- Turkey
- The US
- Brazil
- Germany



9.88%

III. The UK

- The US
- India
- Germany
- Pakistan
- Romania



6.86%

IV. Austria

- Germany
- Croatia
- Spain
- India
- Romania



4.83%

V. France

- Morocco
- Singapore
- Spain
- The UK
- Egypt

11

The US recruits internationally while being a major source of international technical hiring

It should be no surprise that some of the countries that the large international hiring countries recruit from produce the majority of internationally recruited candidates. India on its own makes up over a quarter of the total number of internationally recruited candidates. Interestingly, the US comes in second as a testament to the sheer volume of tech talent it produces.

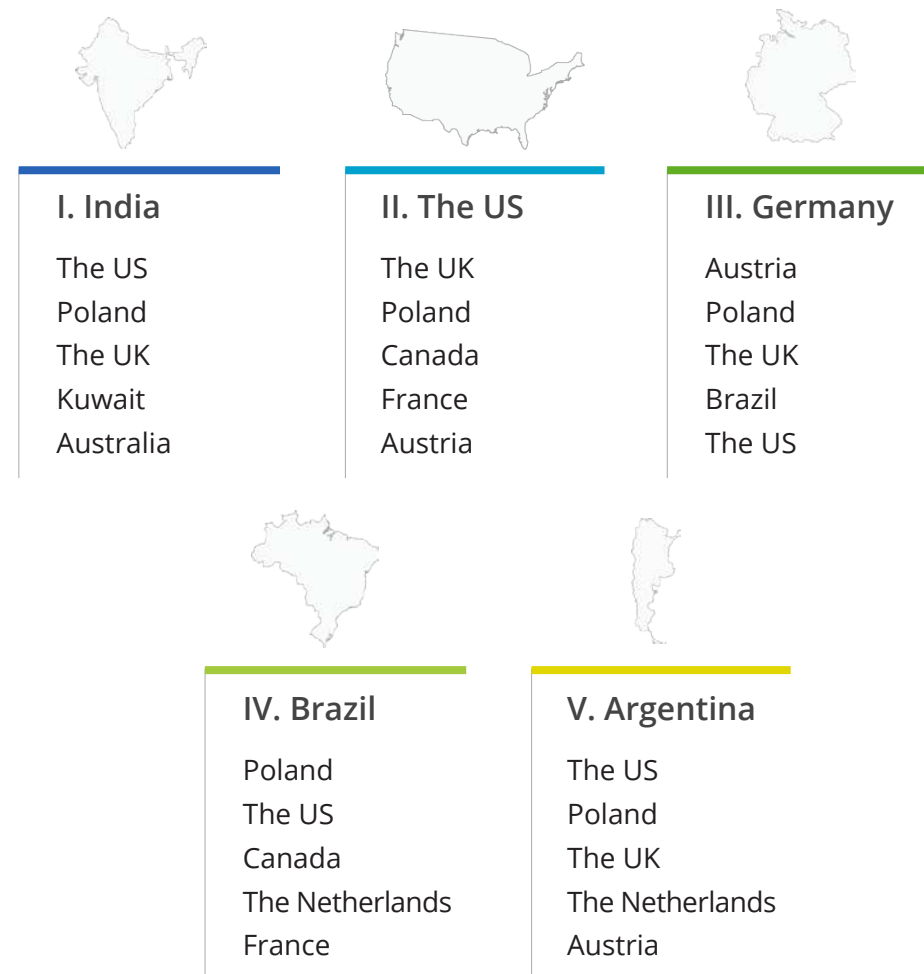
The rest of the top ten after the US goes as follows: Germany, Brazil, Argentina, Egypt, the Netherlands, Turkey, Poland, and Canada.

Beyond the top 3, you see that the rest of the top 10 countries that candidates come from tend to be marked by having large tech talent pools.

An interesting feature is that large candidate countries like the US, also recruit from other countries. When you break it down, US companies recruit developers from all of the rest of the top 10 candidate countries, Poland and the Netherlands from 9, France from 8, Canada from 7, Brazil from 6, and Germany from 2. Egypt, Turkey, and India don't recruit from anyone in the top 10.

International technical hiring is only a one-way flow for certain countries. Most countries look for developers outside of their borders while their own local developers are recruited by international employers. This points to the efficient allocation of the technical skills within large economies.

The top 5 countries overseas candidates come from and the countries that recruit them



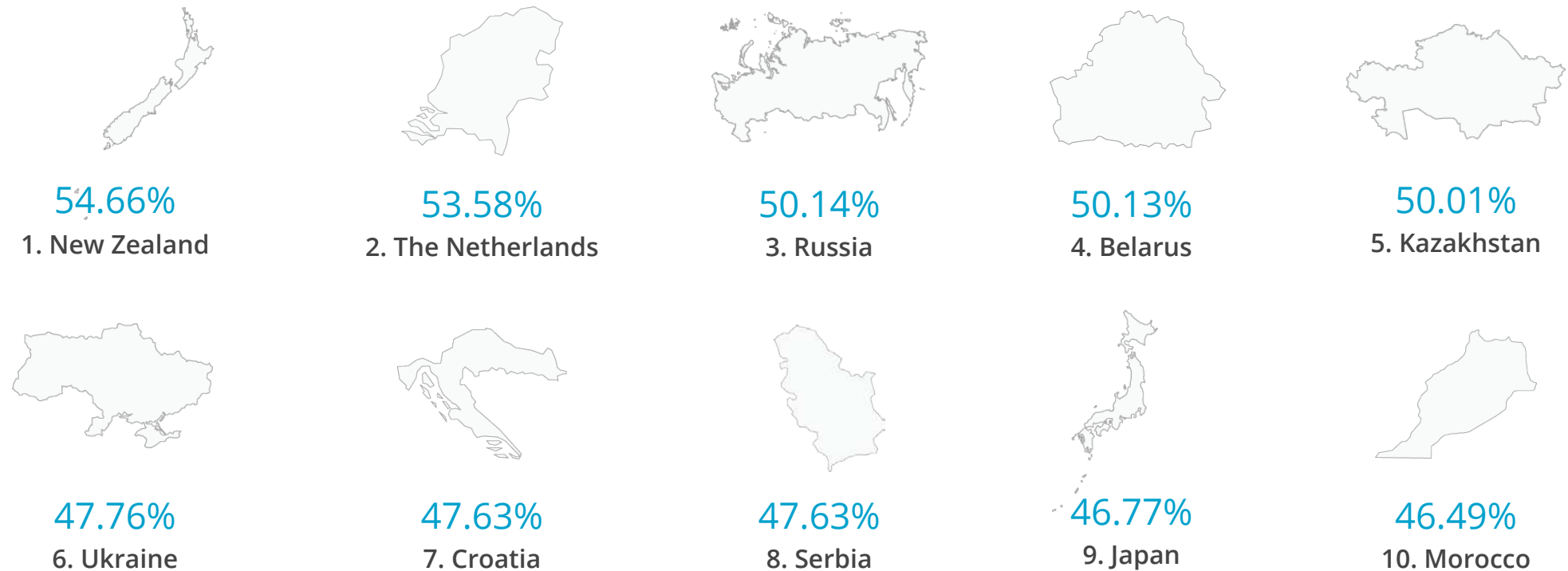
12

New Zealand developers score the highest (54.66%) on coding tests

We had a look at the countries which produced the highest scoring developers. When you consider that most candidates are screened out and that the average score is 40.71, this is quite an achievement. New Zealand was at number 1 followed by the Netherlands and Russia.

This is a testament to the coding skills in these countries and possibly the ease of the tests sent to these candidates. It's also possible that the technical coding skills in these countries are more advanced.

The countries whose developers score the highest on coding tests

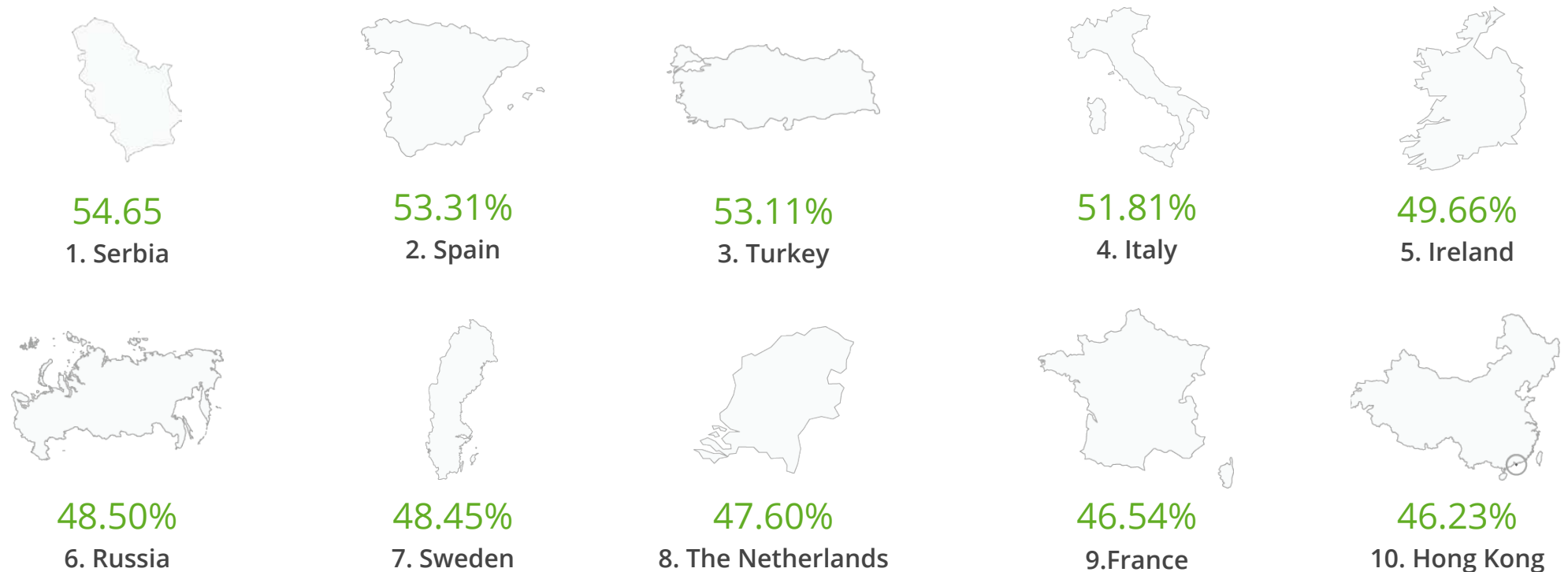


13

Serbian companies have the highest scoring candidates (54.65%)

In a testament to the quality of the developers they recruit, Serbian companies have the highest scoring candidates. This shows that they rely on an international talent pool. After all, the average score of local developers is 47.63%, over 7% lower than the developers they recruit.

The countries whose companies get the highest scoring candidates



14

Companies from Singapore are the most selective

It is one thing to say that a country has the highest scoring candidates but if that comes from easy tests, the companies giving those tests won't be able to effectively screen the skills they need. They will end up getting a lot of candidates they eventually, reject.

Therefore, to find out which country is the most selective, we went into the data and found which countries' recruiters accepted the lowest proportion of candidates. From this, we found the countries with the most selective employers.

The percentage of candidates accepted by the recruiter by country



19.35%
1. Singapore



20.83%
2. South Africa



23.70%
3. Argentina



25.00%
4. Germany



26.67%
5. Cyprus



27.27%
6. Egypt



30.43%
7. Israel



33.96%
8. Taiwan



34.26%
9. The US



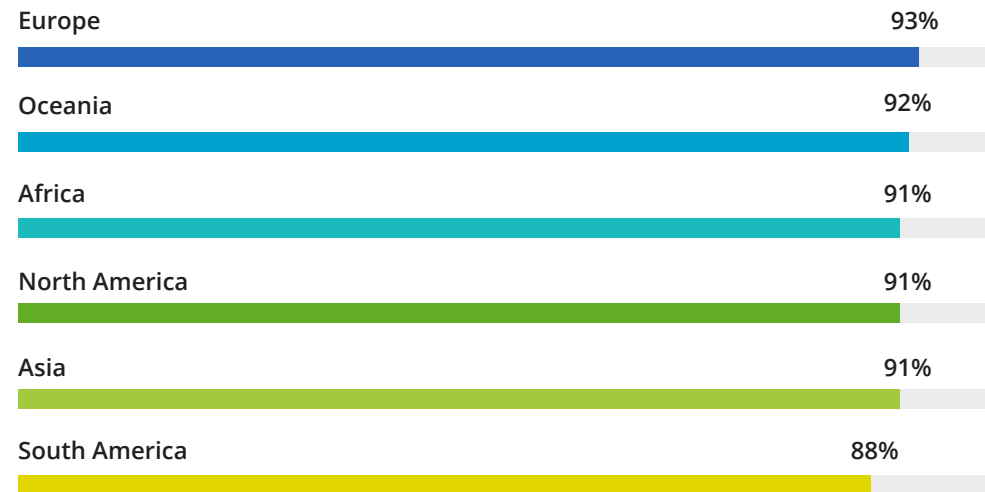
34.31%
10. Poland

15

Over 90% of candidates finish the coding tests they start

When you take a coding test, are you usually prepared or shocked by what you see on the screen? Devskiller's RealLifeTesting™ methodology means the programming tasks on our platform are familiar to most candidates. As a result, there are few surprises, leading to 91.9% of candidates completing their Devskiller coding test. What we see is that there is a bit of variation in this rate between continents but that the change is small and may reflect levels of internet connectivity.

Finish rate by continent



The methodology we used for this study

The data we used for this study came from a 365-day snapshot of users on our platform between December 1st, 2017 through December 1st, 2018. The insights are based on 112,654 tests taken through the Devskiller platform by candidates in 121 countries. All data presented here is generic aggregated demographic information. It is not linked to any specific information regarding certain candidates or companies.

***In sections 1 and 2 the percentages don't add up to 100%. Why is that?**

Section 1

A Devskiller test can include multiple technologies. For instance, you could have a test in Java and a test in Java + SQL. In this sample, 100% of the tests test Java and 50% of the tests test SQL. In the same way, the percentage in the chart refers to when the technology is tested in any test.

Section 2

Similar to section 1, a company might test developers in multiple technologies. To make it clearer, let's look at a group of two companies. The first company sends out a JavaScript + CSS test. The second company sends out a PHP + JavaScript test. In this group, 100% of the companies test JavaScript, 50% test CSS, and 50% test PHP. The percentage in the chart refers to when the technology is used in any test by a company.

Do you have any questions or comments about the report?

We'd love to hear them. You can get in touch with us by emailing research@devskiller.com.



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platform powered by RealLifeTesting™

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