



The State of U.S. Programming Skills Report

Insights into the programming ability of candidates in the U.S. and skills gaps directly impacting recruitment and on-the-job performance

Why is hiring good programmers so challenging?



25.6%
Job growth for software developers

The Bureau of Labor Statistics expects a growth of 25.6% in jobs for software developers in the coming years (or 1.4 million more software development jobs) and nowhere near enough applicants who can fill them.

Source: bls.gov



66 days
Average time to hire a new tech employee

On average, it takes 66 days to hire a new tech employee compared to the average of 43 days for all other types of hires. This makes tech hiring quite challenging for recruiters, and recruiters are only able to fill 60% of tech openings in the U.S.

Source: icims.com



\$162 billion
Revenue loss of U.S. businesses for not finding the candidates they need

Recent research studies have shown that U.S. businesses could lose \$162 billion in revenue unless they find the candidates they need.

Source: kornferry.com

The Current State of US Programming Skills

Key Finding #1

Shortcomings of Traditional Coding Assessments



About 40%

of the candidates can write completely correct code, and another 25% of candidates are able to write logically correct code, with some syntactical errors.

Why is this important?



This 25%

pool of deserving candidates typically gets filtered out of the hiring process

Key Finding #3

Most Common Code Readability Errors



Software engineers spend **42%** of their time dealing with low code readability and code maintainability.

Some of the most common errors made by candidates were:

One Using a name that is too long or short for a variable

Two Writing long lines of code

Three Bad code formatting

Why is this important?



Candidates do not follow best practices implemented across industries while writing code, which result in hundreds of precious productive coding hours going to waste.

Key Finding #2

Skills Gaps



Only 20%

of candidates were able to write a readable and maintainable code, and only 6% of the codes written were functionally correct, maintainable and of optimized complexity.

Why is this important?



This is a **key skills gap**, and it directly impacts speed and performance of any software solution.

Key Finding #4

Language Preference

Java

was the most preferred language amongst candidates.

Python

is a close second. It was one of the most in-demand programming language in the U.S. with the highest number of jobs posting (74,000) in January 2020.

New programming languages

are being adopted in the coding arena: React, Typescript, Kubernetes, Docker and more.

Why is this important?



Recruiters and hiring managers should not only evaluate knowledge of the desired programming language required for the job role, but also the candidate's ability to cross-skill from one programming language to another.



As digital transformation has taken center stage for almost all businesses, we observe a strong demand for tech resources emerging from almost every sector. This will make the already tight labor market for high-quality tech talent even more competitive, but the strong demand is not supported by the supply of good talent. Recruiters struggle to find and hire good programmers.

Organizations need to change the way they source, evaluate and nurture tech talent.

A quick checklist for hiring the best programmers in 2021

1

Consider non-standard talent profiles

It is important for recruiting strategies to move beyond traditional qualifications and experiences and consider talent from an increasingly diverse and non-standard range of sources like bootcamps, MOOCs, and alternative degree courses.

2

Go beyond traditional tech assessments

Invest in scientific and objective assessments that can help you evaluate a candidate's coding capabilities and competencies, and that do not rely on resumes or traditional coding assessments that weed out good talent from your talent funnel.

3

Use a mix of assessments

You can rely on a technical-skills-assessment to evaluate candidate's knowledge of other programming languages and use the technical interview as an opportunity to also evaluate candidate's aptitude and approach towards learning a new language.

4

Invest in continuing training

Organizations need to invest in training the selected candidates to maintain a high-quality code as well as invest in training their new AND existing workforce to reduce the tech skills gap.

5

Partner with government and universities

Organizations need to partner with governments and universities to ensure that the graduating computer science students possess job-ready skills to quickly become productive.

Your Tech Hiring Toolbox - SHL Tech Hiring Solution

By revisiting how you look at your hiring and talent development strategies, you can put the right processes and tools in place to attract and nurture the best programmers and tech talent.

What's in the SHL Tech Hiring Solution toolbox:

Coding Simulations

Find up to 45% more qualified developers using AI

Use AI to faster evaluate candidates in an intuitive online coding environment, available with 50+ languages

Technical Skills

Evaluate over 250 technical concepts

Screen candidates with our deep and continuously updated catalog of technology tests for Front-end, Back-end, DevOps, Data Science, Full stack, and more.

Live Coding Interviews

Hire the best developers in half the time

Increase the rigor and impact of technical interviews with interactive whiteboards and evaluator collaboration.

Numbers speak for themselves



45% more

Reach quality candidates: SHL identified 45% more suitable candidates vs using traditional assessments.

10,000 hours saved



Save hiring managers time: SHL saved a giant 10,000 hours of tech team time.



60% faster

Increase speed to hire: SHL made the time to hire quality talent 60% faster.

LEARN MORE about SHL Tech Hiring Solution

Visit shl.com/techhire

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