



Candidate Behavior Report

Research into how candidates behave in online screening tests

Methodology: Statistical analysis by Codility based on over 1 million candidate sessions.

What is the typical candidate experience when participating in online technical screening?

We've dug into more than 1 million candidate sessions to build a storyboard of the candidate's experience in Codility from beginning to end, highlighting the key activities that will help you benchmark your candidates against the rest.

Understanding your candidate's experience will help you empathize with them, and build a stronger process for engaging with your candidates.

If you have questions about the data in this report, or would like to understand your candidates more deeply, contact your customer success manager, or research@codility.com.

Happy Hiring,



Aga Balcer-Thinlay
Director of Product Research, Codility



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How do candidates rate their performance and the Codility experience?

About Codility:

For 10 years Codility has been working with over 1,200 businesses, facilitating over 7 million skill assessment sessions on behalf of our clients. Over the years, we’ve learned how to quickly assess programmer expertise and relative suitability for every open position our clients are looking to fill. Codility created the tech assessment movement and we’ve tested 3x more candidates than newer entrants in the space.



Analysis methodology note: 1,162,130 sessions taken by Candidates analyzed during years 2016-2018.

Candidate Behavior: Before They Begin

What are the candidate's initial reactions to being invited to participate in an online screening session?

When do candidates decide to take the test you've sent them?

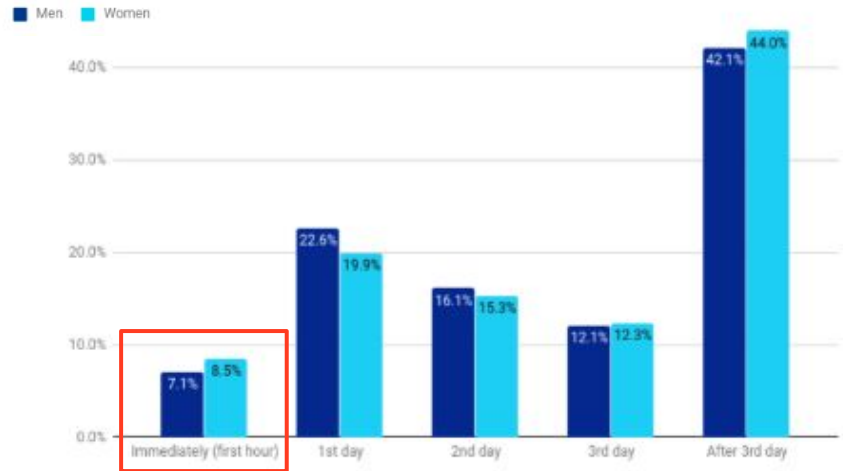
The majority of candidates start their test within the **first 3 days** of receiving an invitation.

Who starts first?

Women tend to be slightly more willing than men to start the test immediately after receiving an invitation. On average women begin within 2 days and 8 hours — with men beginning within 2 days and 5 hours on average. There is no notable difference between men and women.

When Candidates Begin Test after an Invitation is Received

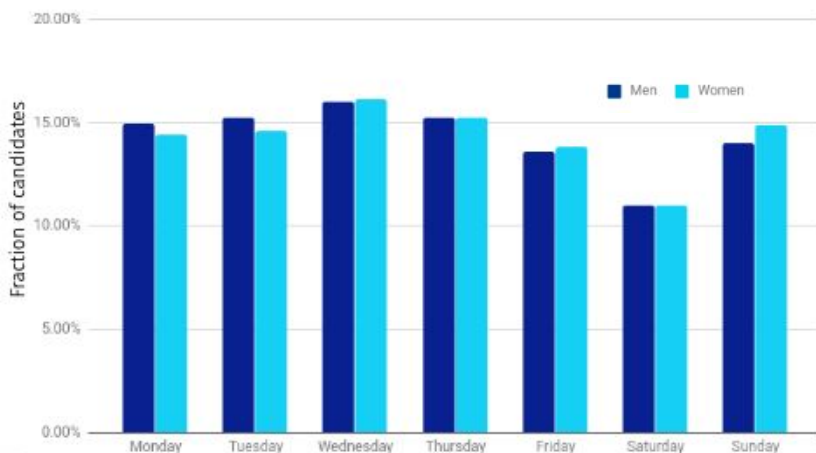
N = 237k male + 37k female candidates from the past 2 years



For all candidates, the **most popular time to take a Codility test is mid-week**, on either Wednesday or Thursday. The least popular day is Saturday.

Fraction of Candidates Taking the Test on Each Day of the Week*

N = 136k male + 26k female candidates from the past 2 years



What's the best day to send a test?

The busiest day for beginning a CodeCheck session is Wednesday, and the majority of candidates begin their session before the third day from receiving an invite. Sending your invitations on a Monday may help your team get results faster.

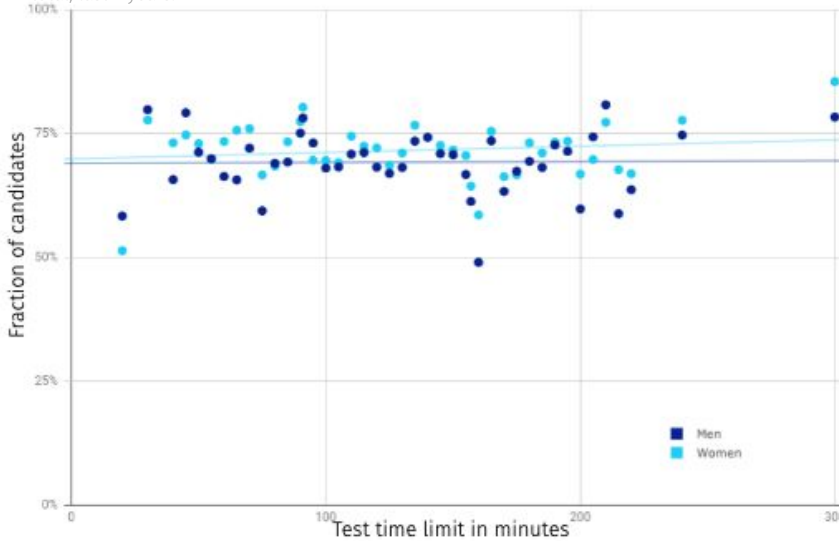
*Includes candidates from North America, Europe, Africa, Japan, India, and Israel. Note: Asia not included due to wide longitudinal spread and different patterns between countries.

What are a candidate's initial reactions?

Candidates who decide to take the test attempt to solve it. Even those who score 0% browse through the tasks (85% of them). Still, women tend to give up on the test slightly more often than men. Giving up is defined as using less than 20% of time and scoring less than 20%.

Proportion of Candidates Who Complete Test Session vs. Total Test Time Limit

Shown 44 time limits below 12 hours and with at least 1000 invitations each, 400k invitations in total, last 2 years.



What's the optimal time limit?

Although data doesn't show a strong correlation between the time limit selected and the number of candidates starting the test, it's important to keep the time limits realistic. For seniors, we believe the time limit should not exceed 1-2 hours of coding.

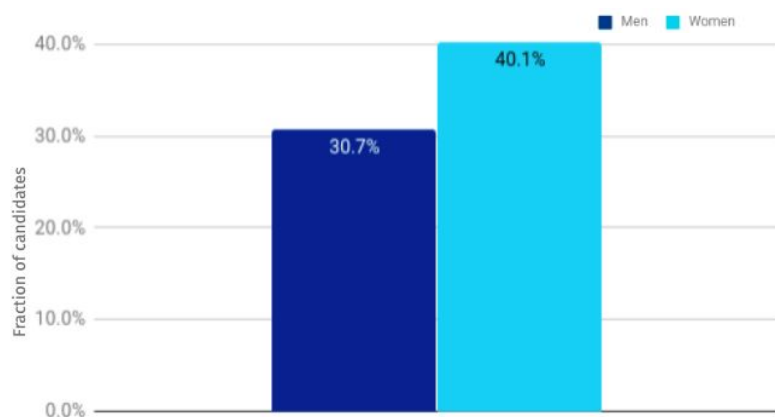
How often do candidates take demo tests?

Before beginning their official test session, candidates can opt in to try a demonstration (demo) test to get familiar with the editor, and the Codility environment.

Behavioral Gap

Women tend to be more willing than men to take a demo test. On average, **40% of women** opted to take the test – while for **men it was closer to 30%**. The additional 30% of users clicked on the link but did not begin the demo test.

Proportion of Candidates Who Take Demo Test Before Beginning



N = 55k male + 11k female from the last 2 years

Candidate Behavior: Solving Tasks

How do candidates work to solve tasks and use their time over the duration of the test?

When do candidates start editing code?

On average candidates began editing code **8 minutes** into the test. This means that they take 5 - 10 minutes to review the tasks and read the descriptions and conceptualize the solution before getting started.

Time Until the First Edit of the First Task

N = 118k male + 21k female from the last 11 months

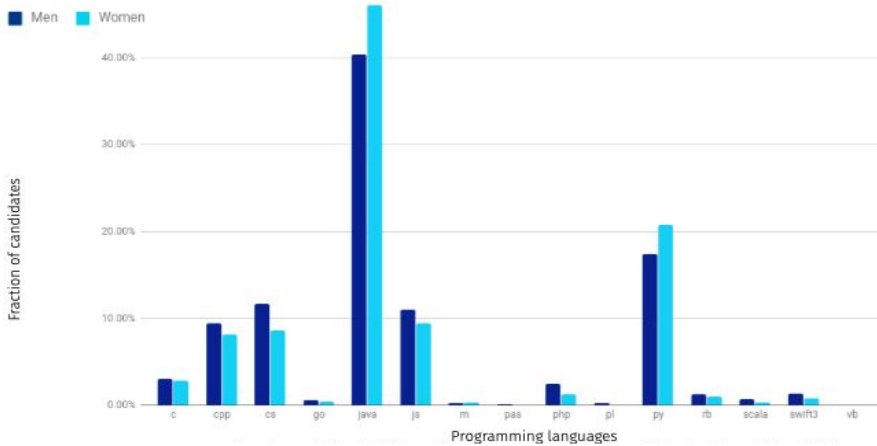


Do candidates adjust programming languages?

While both genders behave similarly when it comes to starting the test, there is a difference in the programming languages used for solving tasks.

Proportion of Candidates per Programming Language

N = 67k male + 11k female from the last 3 years



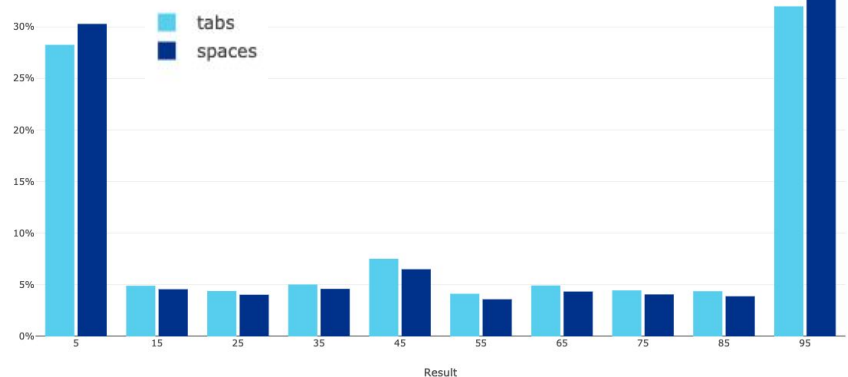
Among the most popular languages* are **Java and Python**, followed by JavaScript and C#.

Women seem to use Java and Python significantly more often than men, who use C++, JavaScript, and PHP.

Tabs vs. Spaces?

Whether the candidates use tabs or spaces while coding their Codility solution -it does not influence their result. For both of these groups **average test score is 52%**.

Comparing Tabs vs. Spaces and Score Achieved (%)

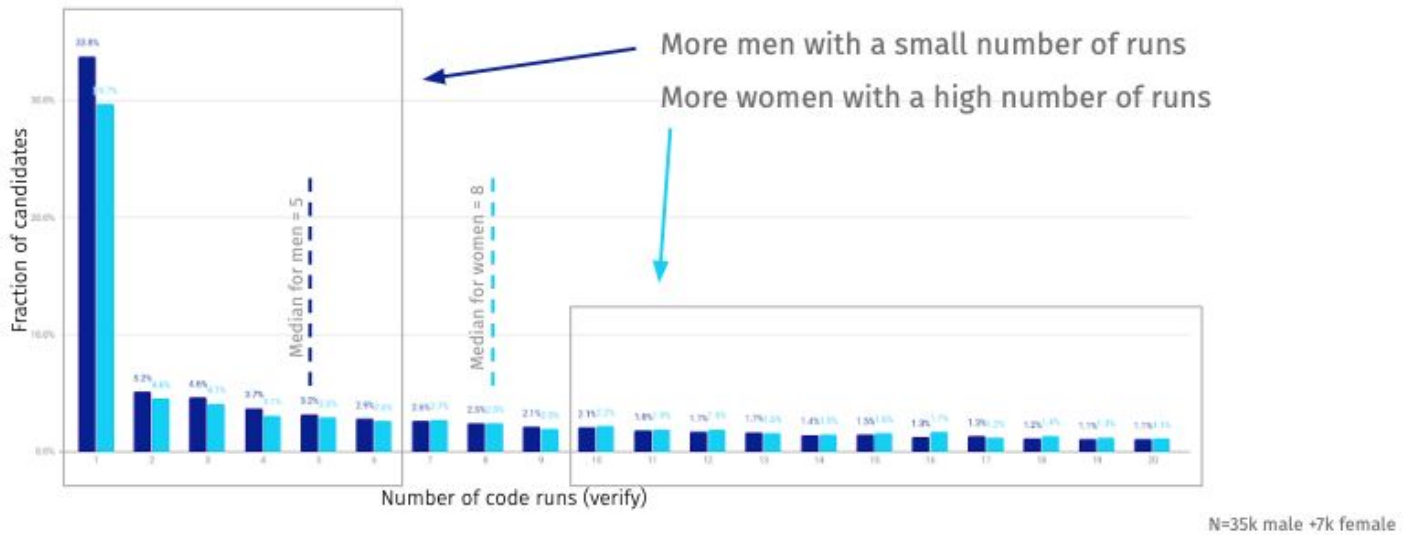


*Based on data coming from Codility tasks

Do candidates check their work?

Women run tests more often than men. Although minor, this difference suggests that female candidates check their work more often after receiving feedback from running the solution.

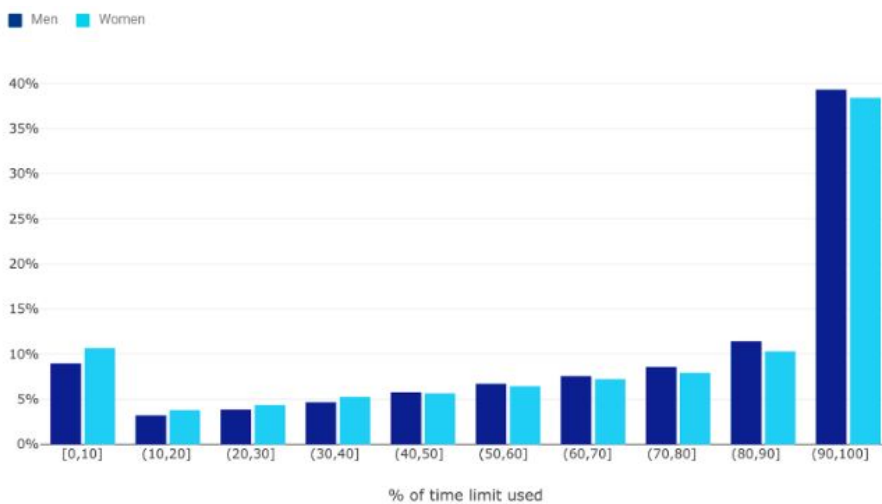
Proportion of Candidates per Number of Code Runs



How often do candidates exceed time limits?

The majority of candidates (76%) complete the first task within the recommended time limit. Women more often than men exceed time recommended for the first task, which may affect the overall test result.

Test Score (%) Compared to Total Time Used (% of limit)

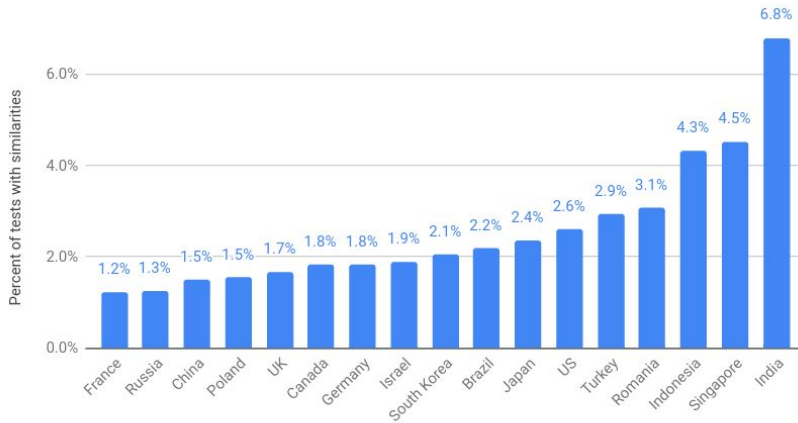


The usage of overall time limits in tests is fairly similar for all candidates. Less than 10% of candidates use 10% or less of their total time limit, most likely giving up.

How often do candidates try to cheat?

The majority of candidates come up with their own solutions to Codility tasks. They understand that taking a skills-based assessment is merely one of the evaluation points being considered in the broader recruitment process.

Proportion of Positive Similarity Checks by Candidate Location



With Similarity Check, we can track plagiarism attempts whether at the beginning, middle, or end of a test session.

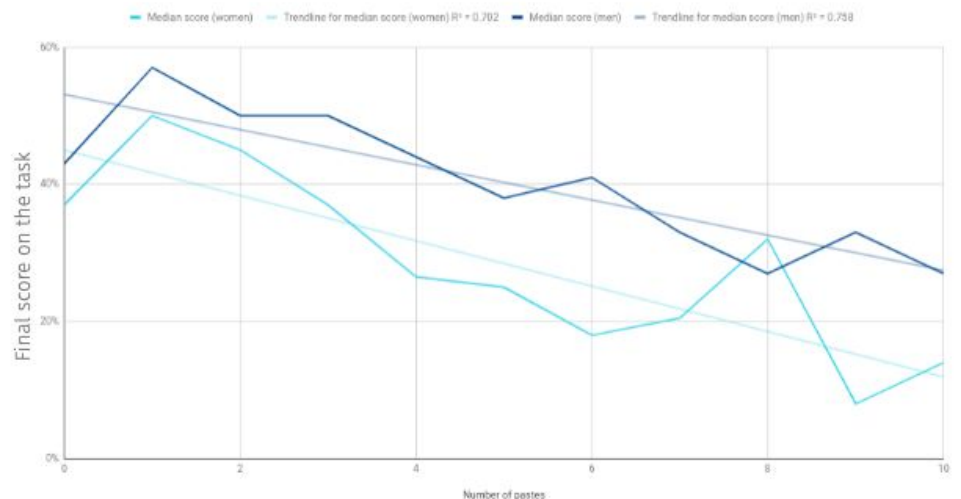
The overall rate of plagiarism sits between 2% - 4% globally. The biggest difference we see in attempting to cheat on a CodeCheck session is by geographic location.

What about pasting code into the editor?

The Codility editor allows pasting code from external editors directly into the interface. This is a design choice. Giving flexibility to the candidate to use their own coding environment makes it easier for them to present their work. The majority of candidates (81%) don't paste any code at all.

We track how candidates use this and we can see that pasting code into Codility's editor only works if the user is aware of what they are doing. A pattern of continuous copying and pasting decreases the candidate's score — and means that they are not sure about the direction in which their solution should go.

Final Task Score by Number of Pastes into the Editor



Candidate Behavior: Afterwards

How do candidates rate their performance and the Codility experience?

Do candidates provide feedback when prompted?

Every month over 28,000 candidates take a CodeCheck session or CodeLive interview on Codility. Eighty-six percent (86%) of candidates evaluate their experience with Codility as positive — and we're constantly working to make this number higher.

Survey Method

At the conclusion of every CodeCheck session, we ask the candidate if they would like to provide feedback to Codility about their experience. We receive north of 9,000 responses a month, and consolidate that data to show us satisfaction trends, key pain points, and spikes in negative or positive responses.

FAIR SKILL EVALUATION INDICATOR

1 → How well did this test evaluate your programming skills?



79% of candidates feel like Codility fairly evaluated their technical skills.

Fairness of Evaluation

Not every candidate will be happy with their Codility score, but we want them to at least feel that it's fair.

To track this, we ask candidates how well the test assessed their skills — and request feedback on one of the tasks they completed so we can validate specific task fairness.

CODILITY EXPERIENCE INDICATOR

2 → How was your overall experience with the Codility environment today?



86% of candidates had a positive experience in Codility's editor.

Environment Satisfaction

Since the majority of candidates use the Codility editor to solve their session, we're always looking at how the editor performs and how it can be improved.



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www.codility.com

research@codility.com

+1 415 466 8085 | +44 208 970 78 68