

## ANALYSIS OF ONLINE PLATFORMS THAT SUPPORT STUDENTS IN IMPROVING AND EVALUATING THEIR PROGRAMMING SKILLS

*Gulsina Atayeva*

*Lecturer,  
Bukhara State University,  
Republic of Uzbekistan, Bukhara*

## АНАЛИЗ ОНЛАЙН ПЛАТФОРМ, ПОЗВОЛЯЮЩИХ СОВЕРШЕНСТВОВАТЬ И ОЦЕНИВАТЬ ЗНАНИЯ УЧАЩИХСЯ ПО ПРОГРАММИРОВАНИЮ

*Атаева Гульсина Исраиловна*

*преподаватель,  
Бухарский государственный университет,  
Республика Узбекистан, г. Бухара,  
E-mail: [g.i.ataeva@buxdu.uz](mailto:g.i.ataeva@buxdu.uz)*

### ABSTRACT

It is impossible to imagine the modern world without computer technology and, therefore, without the ability to program. This article analyzes the various platforms that exist for assessing programming knowledge. These online platforms can be useful tools for both assessing and strengthening programming skills. Therefore, this paper aims to analyze these platforms in detail.

### АННОТАЦИЯ

Современный мир невозможно представить без компьютерных технологий, а значит, и без умения программировать. В статье произведён анализ платформ, позволяющих оценивать знания по программированию. Онлайн платформы являются хорошими помощниками в оценивании знаний, а также в их укреплении. Поэтому автор задался целью анализа таких платформ.

**Keywords:** programming, online platform, learning, algorithmic thinking, problem-solving.

**Ключевые слова:** программирование, онлайн платформа, обучение, алгоритмическое мышление, решение задач.

### Introduction

One of the main challenges that programmers face is the constant improvement of their knowledge and skills. Continuous learning is the basis for success in this field. And this is where online platforms come to the rescue, which allow you to assess and improve your knowledge.

An important aspect of such platforms is their user-friendliness. After all, time is the most valuable resource, and it must be used most efficiently. Platforms that offer user-friendly interfaces, intuitive assignments, and instant feedback capabilities deserve special attention.

One such platform is, for example, «Codecademy». It offers a wide range of courses in a variety of programming languages, ranging from basic to advanced topics. The learning process is based on interactive tasks that allow you to immediately apply the acquired knowledge in practice.

Another popular platform is «HackerRank». She specializes in assessing and testing programming skills through test assignments. Here you will be able to test your knowledge and compare your results with other participants.

LeetCode is another platform where you can improve your programming skills. Here you will find a variety of problems based on real-world scenarios that will help you develop algorithmic thinking and solve complex problems.

These are just a few examples of online platforms that will help you assess and improve your coding knowledge. There are many benefits to using such platforms, including the availability of quality education, flexibility in choosing when and where to study, and the opportunity to test your skills in practice.

### Discussion

If you are interested in programming and want to improve your knowledge in this area, then you can register on online platforms that improve your programming knowledge. Let's talk about the features of these platforms below.

One of the key features of «Codecademy» is the ability to learn various programming languages directly online. Regardless of your skill level, you can start with the very basics and develop your coding skills step by step.

From Python to JavaScript, from Ruby to HTML/CSS, the choice of language depends only on your interests and goals.

User-friendliness is another advantage of «Codecademy». All lessons are broken down into logical blocks that allow you to structure your learning clearly. You can choose lessons on specific topics or take a full course in a specific programming language. Each lesson is accompanied by a clear explanation of the theory and practical tasks that will help consolidate the knowledge gained.

However, «Codecademy» is not limited to lessons and practical assignments. The platform offers a variety of projects to help you put the skills you've learned into practice. You'll be able to create your own website, develop a game, or even start creating your own apps – all available thanks to the «Codecademy» platform.

It is also worth mentioning that «Codecademy» provides the opportunity to communicate with other students and teachers. You'll be able to discuss issues that interest you, share your successes, or simply find motivation and support in a community of people who are passionate about programming.

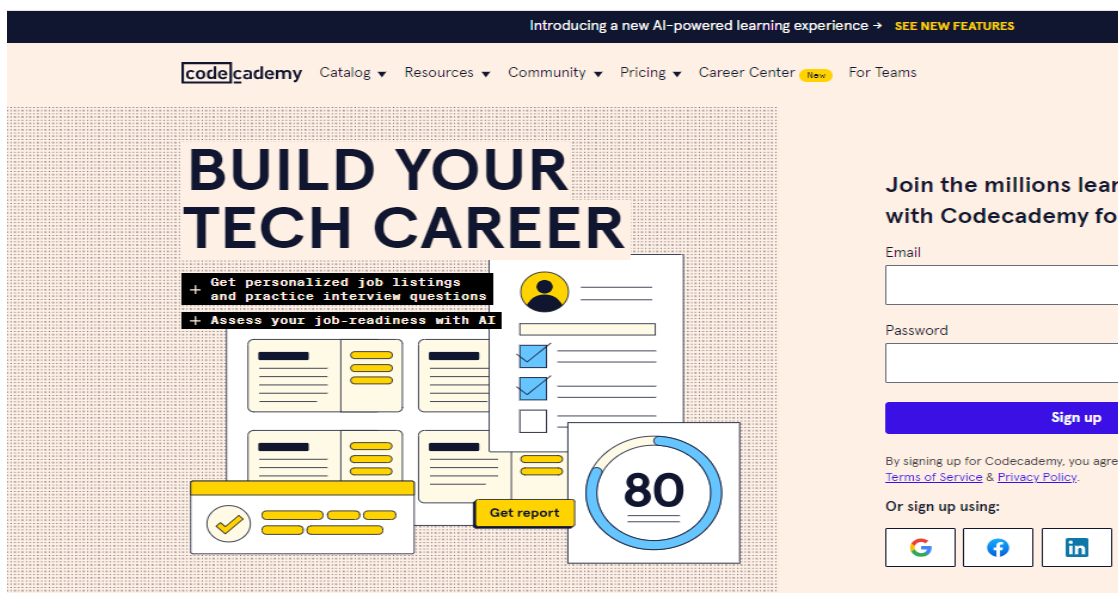


Figure 1. Codecademy Platform Interface

HackerRank is a popular online programming platform that offers a variety of programming tasks and challenges. It is a valuable resource for anyone who wants to improve their programming skills and become a professional.

One of the main advantages of HackerRank is its wide range of programming tasks that cover various languages and topics. Users can choose tasks that suit their interests and level of expertise. Additionally, HackerRank offers the opportunity to solve real-world problems, making the learning process interesting and visually stimulating.

Another benefit of using HackerRank is its ease of use. The platform has an intuitive interface and straightforward navigation, making it easy to use. Users can easily track their progress and measure their results, enabling them to observe their improvements over time.

The most significant aspect of using HackerRank is that it gives you the chance to constantly improve and develop your programming skills. On this platform, you will find a variety of interesting tasks and challenges, which will help you gain more knowledge and discover new approaches to solving problems.

The interface of the HackerRank website is displayed in Figure 2. Therefore, the online platform HackerRank offers an efficient and convenient way to enhance your programming abilities. It provides a broad range of tasks, an intuitive interface, and the ability to continuously improve. Do not miss the opportunity to utilize this platform in order to reach new levels in programming.

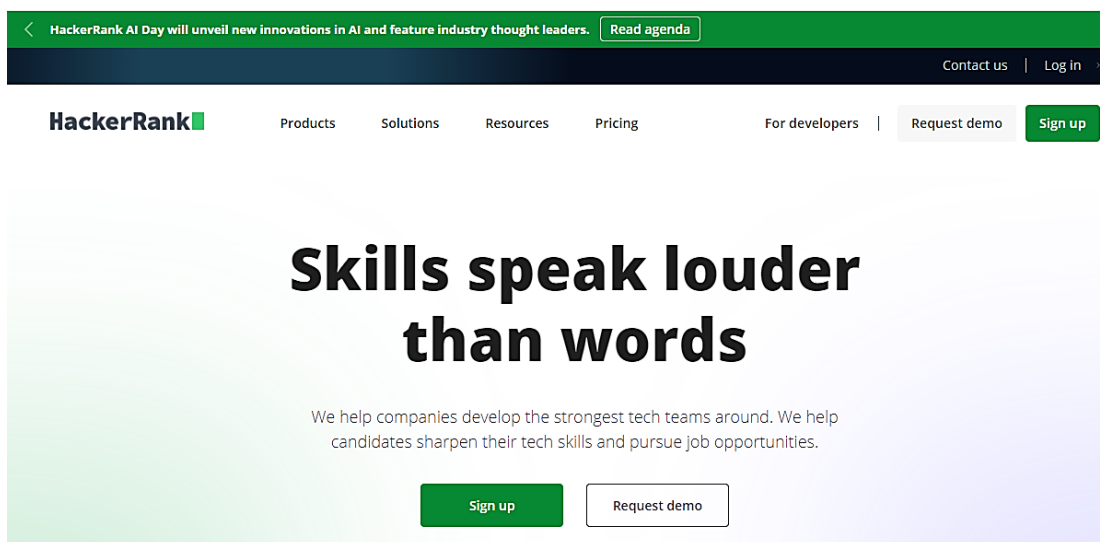


Figure 2. HackerRank Platform Interface

LeetCode is a comprehensive platform that offers various resources for programming and algorithm training. It provides more than 1,500 algorithmic and data structure tasks on diverse topics, including strings, arrays, trees, graphs, and dynamic programming. Users can write and execute their code directly on LeetCode, allowing them to test their solutions against a variety of test cases.

In addition to its comprehensive task library, LeetCode also provides training resources such as articles, videos, and other materials to help users master the topics they

need to know. LeetCode hosts regular online competitions and challenges, where users can participate and compete against each other in solving complex algorithmic problems.

LeetCode offers task completion statistics and feedback on the effectiveness of the code, helping users track their progress and identify areas for improvement. Additionally, the platform features an active user community where users can share their experience and discuss problem solutions, seeking advice and assistance from other programmers.

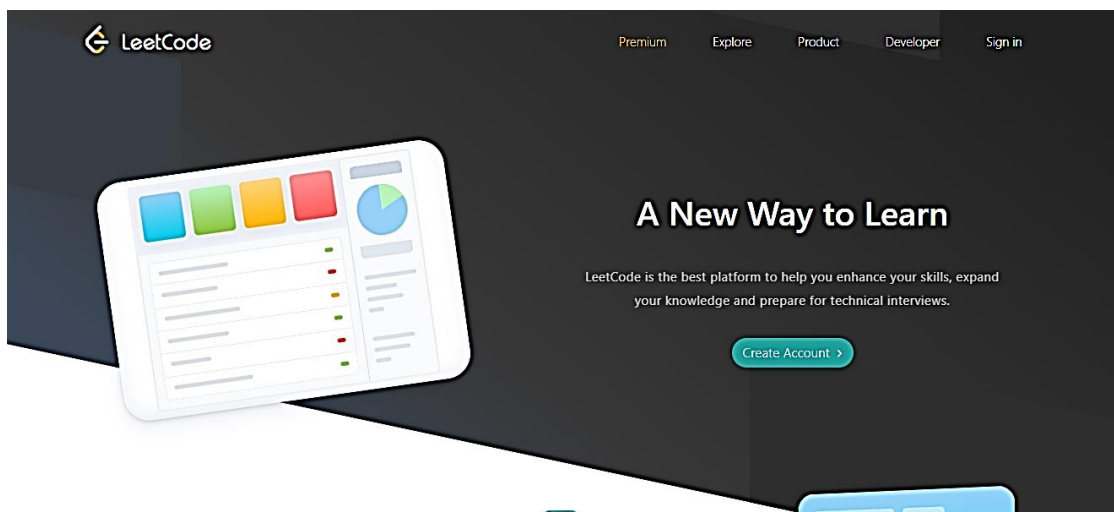


Figure 3. LeetCode Platform Interface

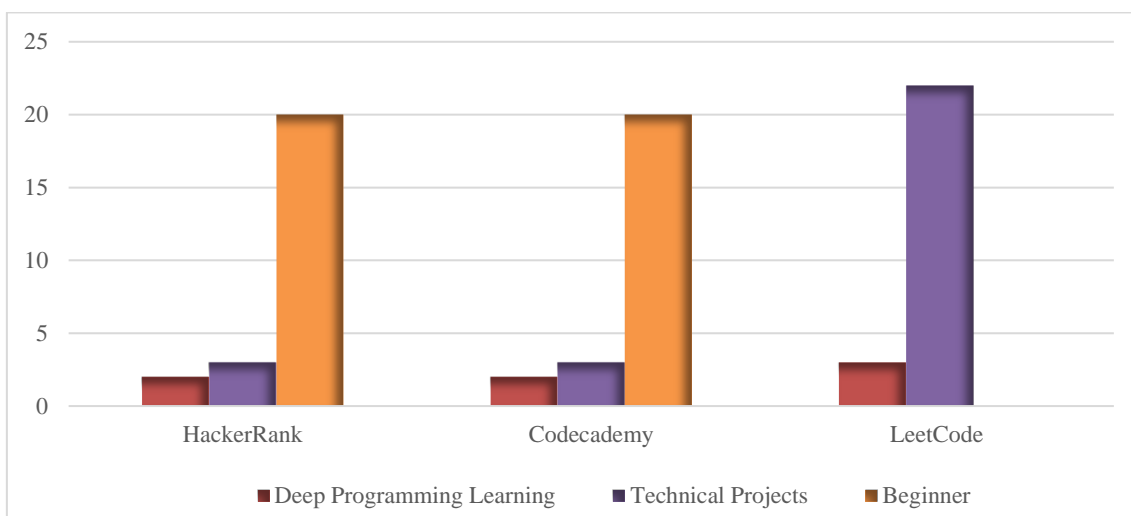
LeetCode's tasks are often included in technical interview questions, making it a valuable resource for preparing for interviews with technology companies. It provides an excellent platform for programmers at all levels, from beginners to experienced developers, offering an opportunity to hone programming skills and prepare for technical interviews successfully.

During the analysis of online learning platforms used by students of the Bukhara State University majoring in programming, the platforms described above were tested. The systems were evaluated using a 10-point scale based

on the following criteria: Deep Programming Learning, Technical Projects, and Beginner.

As a result of analyzing platforms for online learning and enhancing programming skills, the following conclusions have been drawn. If your focus is on preparing for technical interviews, LeetCode may be a better choice. If you wish to explore various aspects of programming and computer science, HackerRank could be more diverse. Codecademy may be suitable for beginners who want to learn the fundamentals of programming through interactive lessons.

The results of testing the platforms among students involved in programming are presented in Figure 4.



**Figure 4. The results of testing online platforms for learning programming**

**Conclusion**

The article analyses three online platforms that help students improve and assess their programming skills: Codecademy, HackerRank, and LeetCode.

Codecademy is a platform that offers interactive courses in various programming languages, including Python, JavaScript, and HTML/CSS. The courses include interactive lessons, assignments, and practical projects.

HackerRank focuses on assessing programming skills through challenges and individual tasks, with participants solving problems in various programming languages.

LeetCode, on the other hand, evaluates programming skills through real-world challenges from various

companies. It offers a wide range of tasks with different difficulty levels and programming languages.

All three platforms provide different methods for evaluating programming skills. The choice between them depends on each individual's goals and preferences. Thus, the article presents an analysis of online platforms for evaluating programming knowledge and shows that each of these platforms has its unique advantages and opportunities for learning and practicing programming.

Do not forget about continuous self-development in programming, as this area is constantly evolving and changing. Online platforms can be your trusted assistant on this journey to success.

**References:**

1. Codecademy. (2021). Codecademy - Learn to Code for Free. <https://www.codecademy.com/>
2. HackerRank. (2021). HackerRank - The Skill Assessment Platform. <https://www.hackerrank.com/>
3. LeetCode. (2021). LeetCode - Practice Programming Interview Questions. <https://leetcode.com/>