LITCODER PROGRAM

A NOTE FROM THE LITCODER TEAM

Dear Student,

In today's rapidly evolving technological landscape, relying solely on traditional programming skills and problem-solving capabilities may not suffice. It's no longer enough to excel at writing code and solving test cases; there's a fundamental shift towards leveraging AI-assisted tools in coding workflows.

Success in this new paradigm hinges on the ability to effectively collaborate with AI-powered code assistance, understanding how to adapt to its nuances, and proactively mitigating potential issues that may arise from using such technology. Equally crucial is a deep comprehension of code quality practices along with code accuracy, which serves as a cornerstone among various other essentials in modern software development.

Your institution recognizes the importance of equipping you with the right skills for successful early-stage careers. Therefore, we're pleased to announce the start of a comprehensive code assessment and development program. It will run from 18th September 2024.

During this program, you will have the opportunity to engage in labs and participate in contests involving two most prominent programming languages Java and Python. This learning program carefully designed to enhance your programming proficiency and broaden your understanding of the subject matter.

Before we embark on this exciting journey on Litcoder, we encourage you to take a few moments to familiarize yourself with the significance and benefits of this program. It is our firm belief that this experience will play a pivotal role in shaping your future endeavours.

Best wishes,
Team Litcoder

LITCODER

Litcoder is a groundbreaking tool for analysing and improving code quality, and aiding excellence in AI-enabled world.

It offers valuable reports and recommendations to enhance the quality of code in alignment with industry standards. Litcoder's code quality assessment centres around four key clusters, encompassing 16 distinct quality parameters as depicted below:

01

Code Maturity

- Maintainability
- Reliability
- Security
- Vulnerabilities

02

Code Readability

- Testability
- Understandability
- Modularity
- Explainability

03

Code Manageability

- Scalability
- Stability
- Productivity
- Extensibility

04

Code Flexibility

- Changeability
- Compatibility
- Reusability
- Availability

Code Maturity

- Code is well designed and written
- No unwanted processing, no memory leaks, inefficient processing
- Adherence to industry standard rules

1.1 Maintainability

- Ease with which developers can find, reuse and change code to keep the dependencies updated as the platform evolves
- Code migration to new language versions

1.2 Reliability

- Behavior consistency under different internal and external contexts
- E.g., potential memory leak that causes the code to hang with larger data, etc.

1.3 Security

- Security of written programs
- Vulnerabilities from use of external libraries

1.4 Vulnerability

- Measure of vulnerabilities in the system

Code Readability

- Ability to understand the code written by others
- Enhancing legacy code

2.1 Testability

- Ease of testing the code
- Complexity of the code
- Branches and checks

2.2 Understandability

- Ease with which code written by others can be understood
- Better understandability helps code evolution in the long term

2.3 Modularity

- Extent to which code can be compartmentalized into modules so that each module does one specific function
- Reduces code duplication
- Increase resilience and makes it easier to work with

2.4 Explainability

- Documentation & commenting to help understand the code and its context

Code Manageability

- Maintaining, enhancing and improving code over time
- Code smells – structures that indicate violation of fundamental design principles
- Bad coding practices that negatively impact design quality

3.1 Scalability

- High probability to impact behavior of application in production
- Ability to code to handle higher load
- Blockers to scalability
- Memory leak
- Undisclosed DB connection

3.2 Stability

- Ability of code to perform well under changing external conditions without issues
- Runs without crashes

3.3 Productivity

- Deals with a developer's code writing productivity
- Major productivity issues
- Uncovered piece of code, duplicated blocks
- Unused parameters

3.4 Extensibility

- Ability of a software to evolve and change
- Addition of functionality seamlessly to existing code
- Long lines of code
- "Switch" statements with less than 3 cases

Code Flexibility

- Technical debt – implied cost of additional rework due to choice of an easy (limited) option now, instead of a better approach that would: Consume additional time, More efforts, Additional resources

4.1 Changeability

- Ability to make changes to the system easily
- Additional functionality
- Modification of existing functionality
- Low changeability is a consequence of not writing clean code

4.2 Compatibility

- Ability of code to work with other pieces of code that follow standards
- Good compatibility makes code enhancements & error fixes easy

4.3 Reusability

- Extent to which code can be used in other parts of the system to provide the same or close functionality without re-work.
- Reusable code can be used multiple times, reduces additional work and enhances productivity

4.4 Availability

- Ability of the code to be enhanced and upgraded without much re-work
- Bad availability indicates
- very complex functionality
- Badly written code structure

VIT LITCODER LEARNING PROGRAM

Start Date: 18th September 2024

End Date: 23rd October 2024

Process

» Completing all 4 modules in the primary coding language of your choice is mandatory. Modules are made available in both Java and Python. Choose either Java or Python as the primary language for coding practice and assessment. Also, we strongly recommended to utilize the one-month period to try out the 4 modules in the second coding language as well.

» Weekly Tasks: Complete 4 labs & 2 Contest.

» Reports will be available within 48-72 hours in the reports section for you to review. Go through the reports for writing cleaner and error-free code.

» Familiarize yourself with the concepts of code quality parameters and explore real-world case references.

» Take up the quiz every week to test your understanding of code quality concepts.

Support:

» If you encounter any technical issues, we recommend reaching out to our technical support team through this support form – **Click Here** (URL: https://forms.gle/xz1NaMBcKeMh8bBo6)

» You can expect a response and resolution within 24-48 hours after raising a technical issue. Check status of your issues filled on support form by **Clicking Here** (URL: https://docs.google.com/spreadsheets/d/e/2PACX-1vSFAye3fKxwaw0x8qZ8rIxY_79tgmDh2f0AvHD4owkefoMyDsqpnmZ7ITrChRupvcmgfpsoPqMksiBG/pubhtml)

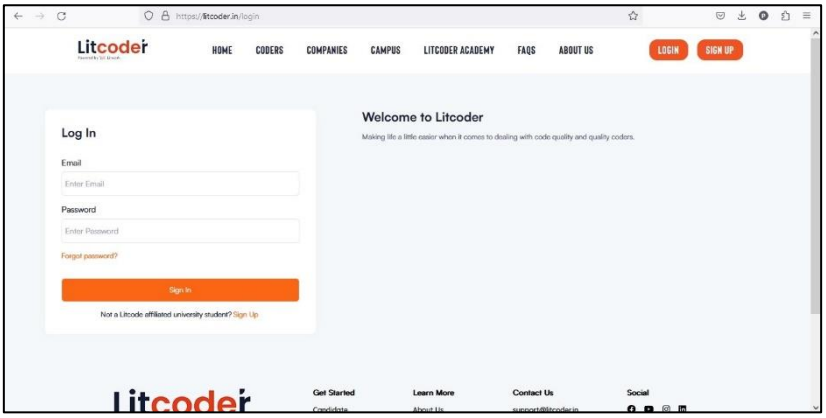
Litcoder Journey:

Orientation: Litcoder Learning Program	Platform Familiarization Lab	Litcoder Brief
18th to 22nd Sept 2024	**Litcoder Pre-Program Assessment (Solve in any one language Java/Python)** **Contest 1** **Contest 2**	**A note on Top Errors & Recommendations**
Week 1		
23rd to 29th Sept 2024	**Week 1: (Solve in any one language Java/Python)** **Lab 1** **Lab 2** **Lab 3** **Lab 4** **Contest 1** **Contest 2**	Handbook: Code Maturity Case Reference - Code Vulnerabilities Case Reference - Code Reliability Case Reference - Code Security Case Reference - Code Maintainability Week 1 Quiz
Week 2		
30th Sept to 6th Oct 2024	**Week 2: (Solve in any one language Java/Python)** **Lab 5** **Lab 6** **Lab 7** **Lab 8** **Contest 3** **Contest 4**	Handbook: Code Readability Case Reference - Code Modularity Case Reference - Code Understandability Case Reference - Code Explainability Case Reference - Code Testability Week 2 Quiz
Mid-Month Connect		
Week 3		
7th Oct to 13th Oct 2024	**Week 3: (Solve in any one language Java/Python)** **Lab 9** **Lab 10** **Lab 11** **Lab 12** **Contest 5** **Contest 6**	Handbook: Code Manageability Case Reference - Code Productivity Case Reference - Code Scalability Case Reference - Code Extensibility Case Reference - Code Stability Week 3 Quiz
Week 4		
14th to 20th Oct 2024	**Week 4: (Solve in any one language Java/Python)** **Lab 13** **Lab 14** **Lab 15** **Lab 16** **Contest 7** **Contest 8**	Handbook: Code Flexibility Case Reference - Code Availability Case Reference - Code Changeability Case Reference - Code Reusability Case Reference - Code Compatibility Week 4 Quiz
21st to 23rd Oct 2024	**Litcoder Post-Program Assessment (Solve in any one language Java/Python)** **Contest 1** **Contest 2**	

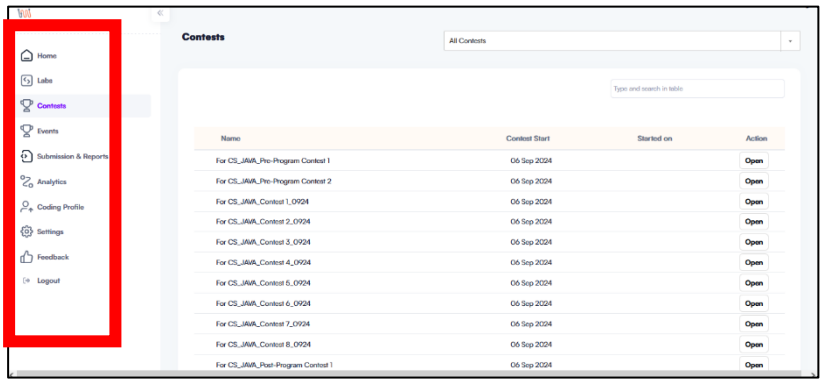
LITCODER PLATFORM FAMILIRIZATION

Logging in at Litcoder.in & getting started:

- ✓ Visit https://litcoder.in/login in an incognito window, chrome browser on your desktop/ laptop. (All latest versions of Chromiumn based browsers supported)
- ✓ Enter your assigned **Username** and **Password** (case sensitive) and click on Login button.
- ✓ Go to this link & change your password after first login : https://litcoder.in/user-forget-password
- ✓ Do not change any other settings after changing your password

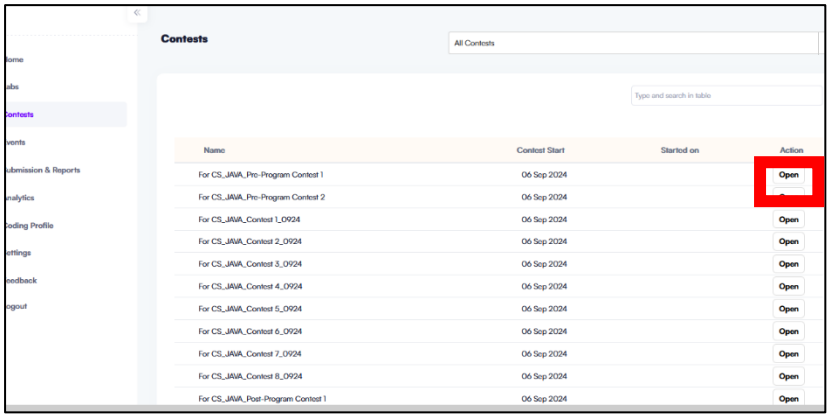


- ✓ After successfully logging in. You can access Contest, Labs and Reports through Navigation Bar higligted in the image below.

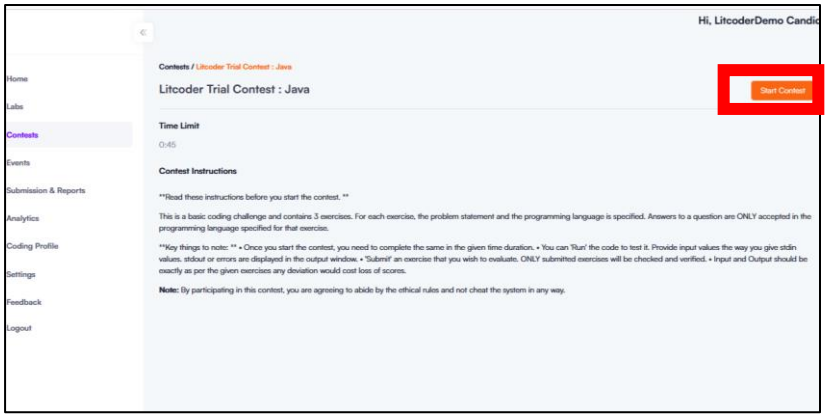


Litcoder Contest:

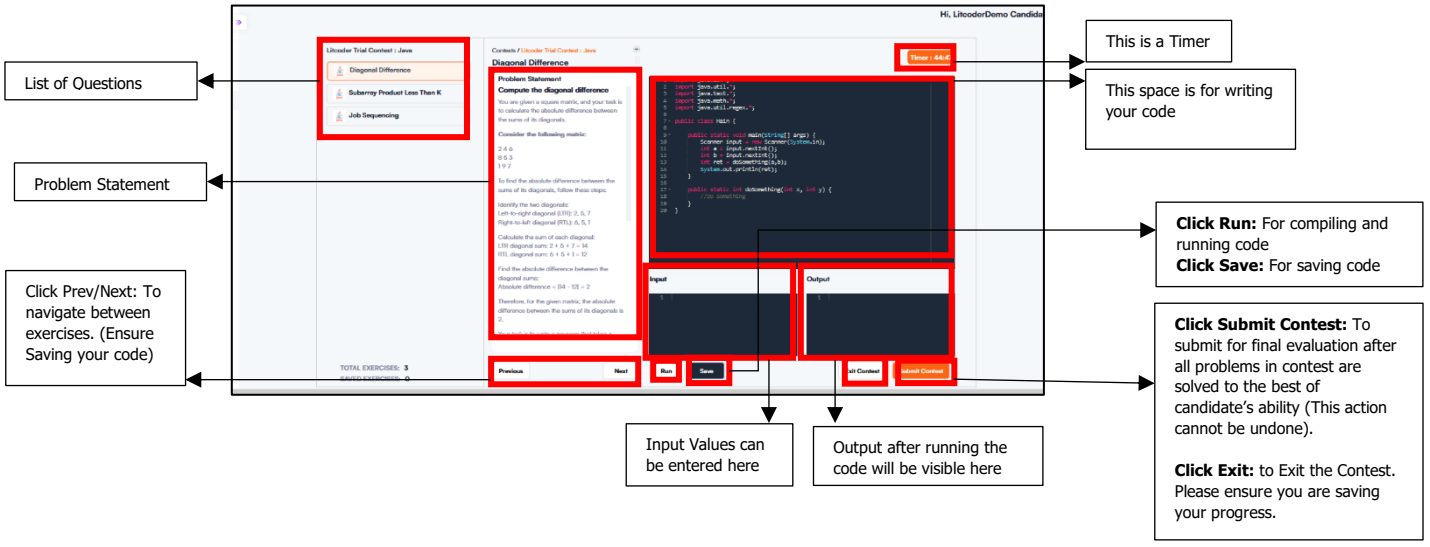
- ✓ Navigate to **contest** tab, you can see all the contests made availabe by your college.



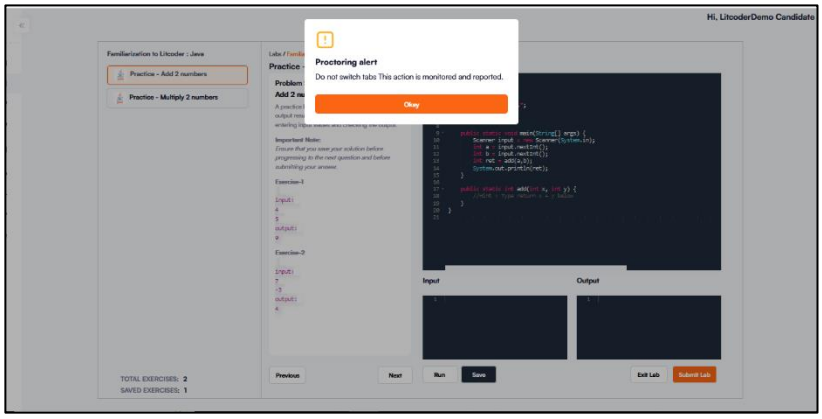
- ✓ Clicking on **Open** icon of any unfinished contest it will take you to instructons page as depicted below. (Read Details and instructions carefully before clicking on Start)



- ✓ Clicking on Start, will start the contest. You can now read the problem statement and use compiler to write, test and save your solution. (Please mind the Timer and Time Limit)



✓ Navigating out of the proctored assessment window would trigger a warning as depicted below. (Do not use unfair means). Click Ok to resume.



✓ You cannot attempt contest again after submitting it once. Kindly ensure not submitting before completion of all the questions.

Note: Labs also have a similar structure, however they are for practice and do not have a timer.

FAQs

1. How is Litcoder different from other coding portals?

Litcoder distinguishes itself by evaluating 16 international code parameters, emphasizing not only coding proficiency but also code quality. By combining Coding Skills and Coding Quality, Litcoder generates a distinctive Litcoder Score that offers valuable insights to both users and prospective employers.

2. Can a non-computer science student benefit from Litcoder?

Yes, absolutely! Litcoder is designed to be beneficial for individuals from diverse educational backgrounds, not limited to computer science. The platform offers a structured learning experience and resources that can be valuable to anyone interested in coding and programming, regardless of their academic specialization.

3. Do I have to make a payment on the Litcoder Platform?

No, your college has already subscribed to our services on your behalf, so there is no need for you to make any payments on our platforms. Please be aware that we have a no-refund policy in place. If you require assistance, please reach out to support@litwork.in.

4. What do these functions mean? - Run Save Next/Prev, Submit, Exit

- Run – checks if the code is functional or not, you will have to rewrite the code/ make the changes to make it functional.
- Save – saves your work done so far. You should do this frequently. Only saved submissions are evaluated.
- Next/Prev – allows you to navigate through each of the questions in the lab. Remember to 'Save' your work before navigating to the next/Prev question.
- Submit Lab/Contest – Once you have completed all the questions of the lab, you can submit the lab for review. Once the lab is submitted, you will not be able to take the lab again. Only submitted labs are reviewed.
- Exit Lab/Contest – It lets you exit a lab or contest safely without submitting for evaluation. Ensure saving your work if you are exiting.

5. What are labs – what is the structure? How is it different from a contest?

Labs enable you to practice coding in real time and identify the steps that you are performing successfully and those that you need to revisit and improve. All Litcoder practice labs and exercises are carefully curated for a range of problems and 3 levels of difficulties.

On the other hand, contests include a plethora of programming challenges with differing levels of difficulty to assess your coding capabilities, within a certain timeframe.

6. How many problems are there per lab/contest?

The number of problems in each lab/contest can vary, but typically you can expect around 2-3 questions per lab/contest. However, the exact number of problems may vary from one lab/contest to another.

7. Do I need to complete the entire Lab/contest in one sitting?

No, you are not required to complete the entire Lab/contest in one sitting. You can work on some of the exercises and remember to 'Save' your progress. If needed, you can close the lab/contest and then 'Resume' it later. However, once you 'Submit,' you won't be able to work on the lab/contest again, so make sure to complete and save/submit your work before closing. Do remember that contests are timed.

8. My internet failed in the midst of coding; can I resume my Lab/Contest?

Absolutely, you can resume your work. Simply click on the resume icon to continue from where you left off, even if your internet connection was interrupted during the coding process.

9. I have submitted my Contest/Lab but scores/ reports are not reflecting?

Generating a report typically takes between 48 to 72 hours. If you find that the report has not been generated within this time frame, we recommend reaching out to support form for assistance.

10. I submitted my contest/lab accidently. Can I redo them?

Unfortunately, no. Once you've submitted a contest or lab, it is considered final, and you cannot redo it. The submission concludes the contest or lab for you, and you won't have the opportunity to make any further changes or attempts.

11. How many times can I navigate out of the compiler window during a Lab/contest?

These assessments are proctored, and it's important to note that any attempt to navigate out of the compiler window will trigger alerts. Alerts will be sent to your placement team and will also be displayed on your screen. It's advisable to remain within the compiler window to ensure compliance with the assessment guidelines and maintain the integrity of the process.

12. I am facing a technical issue, who should I contact?

If you encounter any technical issues, we recommend reaching out to our technical support team at through support form by Clicking Here.

13. I have raised a technical issue, when can I expect a resolution?

You can expect a response and resolution within 24-48 hours after raising a technical issue.

14. Can I attend a Lab/Contest using mobile phone/tablet?

No, you cannot participate in a Lab/Contest using a mobile phone or tablet. Please ensure you use a desktop or a laptop to access and engage in the Lab/Contest activities. The platform is optimized for use on these devices to provide the best user experience.

15. Should I enable a webcam and microphone for proctoring?

No, currently it is not required to enable a webcam and microphone for proctoring during a Lab/Contest.

16. What is the minimum bandwidth required for using Litcoder?

A minimum dedicated bandwidth of 8 MBPS is required for using Litcoder effectively. However, it's recommended to have a broadband connection of at least 30 MBPS for an optimal experience. Ensure that this bandwidth is dedicated and not shared with others using the same network to ensure smooth usage of the platform.

17. Can I get reports for exercises completed even if the lab/contest is not complete?

The reports are evaluated only when the lab/contest is marked completed – by clicking on 'Submit'. The report will be generated once you click on the submit icon within 48-72 hours. Reports are generated even if the lab/contest is not complete. Incomplete exercises will have an accuracy score of zero.

18. If I don’t attempt any questions, can I still submit a lab/contest and will a report be generated?

Yes, you can submit the lab/contest at any point, even if you haven't attempted any questions. The system will evaluate the lab/contest when you click on the submit icon and a report is generated accordingly.

19. If I type a code which is wrong, will it still submit the code?

Yes, the platform will still allow you to submit the code however it is important to check your work by testing code against given examples before clicking on submit. Only click the submit button when you are certain that your code is complete and accurate.

20. Can I stop and restart a Lab or a Contest?

You can't restart, but you can pause and resume your work. Remember to 'Save' frequently as only the latest 'Saved' information is retained. Once submitted, you can't make further changes, so ensure completion before submitting.

21. How can I modify the language settings in my compiler?

The language for every lab, contest, or learning module is fixed and cannot be altered on the platform. Labs and contests are provided in multiple languages. However, we suggest selecting a specific language and completing all four modules in that chosen language for a consistent learning experience.

22. Why are the test cases not provided?

Litcoder differs from other platforms by simulating real-world scenarios where you need to write and develop code without predefined test cases. Instead, you will receive guidance regarding input and expected output values to help you navigate your coding challenges.

23. How will the scores be shown to colleges?

Colleges will get reports that help them understand your current Litcoder score & also inputs about ways in which they can further nurture and hone your skills.

24. Is my data secure on the platform?

Yes, at Litcoder, we prioritize the security of your data. We have implemented stringent measures and follow industry best practices to ensure your data remains safe and protected. Our platform utilizes encryption, access controls, and regular security assessments to safeguard your information and maintain a secure environment for all users. Rest assured that we take data privacy and security seriously.

25. Why are my scores low/zero?

You need to write code which is designed to accept input values in format given in exercises along with question, solves the problem correctly and gives output in desired format as in the exercises.

For example: If you need to find sum and given input is 2, 3 Given Output is 5

You need to write a code which accepts input in single line separated by comma and gives output in single line. Here if you print "Sum = 5" as output your code will be awarded zero score because output required is "5". Or if you print statement to take input like "Enter 2 numbers etc. You will again be awarded zero because output required is "5".