

# Online Coding Platform

## Commander of Full Stack

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Hold On!

We know the title might have put a smile on your face and your neurons might have started building it in your head. You would have used several coding platforms, but have you ever thought how they work?

This hackathon is your chance to move from being a user of coding platforms to the builder of one! Understand what all goes on behind the scenes and see a whole new side of Full Stack Programming. Let's push the limits!

## Let's Get Started!

Create an online coding platform that enables users to write and execute code.

- Platform should support at least one compiled language.
- User management is not required (login, sign-up, profile, etc.).

### Coding Playground

- A place where users can play with code.
- Users can code in a code editor and execute it with custom inputs.
- Users can see errors, output and metrics like execution time & memory usage.

### Coding Arena

- A place where users can practice their coding skills by solving various problems available on the platform.
- A user may upload their own coding problem along with its description, constraints and test cases.

### Coding Battleground

- A place where users can compete in ongoing contests hosted on the platform to showcase their skills.
- Users can see real-time leaderboards.
- Any user can conduct their own contest.

## What will make your software a winning candidate?

Above features will make your platform usable, but what will make users *want* to use it? You must ask this question to make your platform stand out.

Here are a few pointers to help you understand what kind of thinking will make your platform a winning candidate.

### Performance and Scalability

- How will your platform efficiently utilize server resources such as CPU and Memory?
- How will your platform scale with users?

### Security and Resiliency

- What happens if a malicious user writes code that tries to access server resources?
- What happens if user's code crashes or runs indefinitely?

### User Experience

- Is your platform intuitive for a first-time user to hop on and start coding with ease?
- Programmers have their own preferences of programming language, shortcuts and formatting!
- Can the platform assist users with programming?

### Few more ideas...

- Code editor with syntax highlighting and auto-completion.
- User profiles with statistics such as problems solved, accuracy, and streaks. Achievements and badges to motivate users.
- A forum to discuss coding problems and solutions on the platform.
- Customization options such as specify start and end time of contests, allow only students to participate, etc.
- Global leaderboards of past contests and winners.
- Always dark mode - because light mode attracts bugs!

Let your creativity soar and come up with an innovative masterpiece.

## Anything else that I need to know?

Would you use a coding platform with attractive design but poor functionality, or one with great functionality but dull design? None of them, right? It should be "perfectly balanced, as all things should be". 😊

Several online coding platforms are out there for your reference and inspiration. However, originality of your implementation and understanding of the system are key parts of our evaluation. It is therefore highly recommended that you make an honest effort. The spirit of this event is help you understand what it takes to build such a full stack application!

Well, that is all. We have no doubt you will have fun solving this and we look forward to using your application!