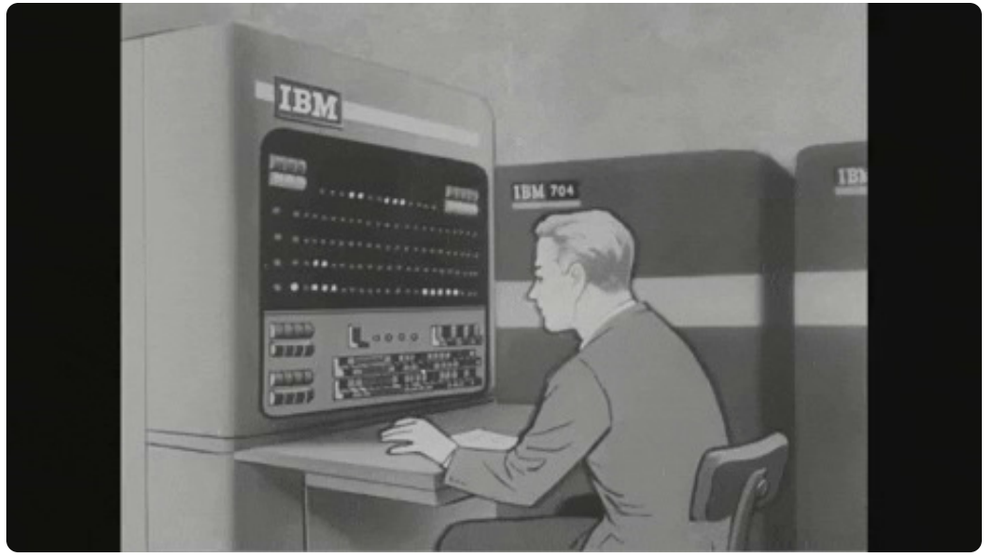
CodeSpace

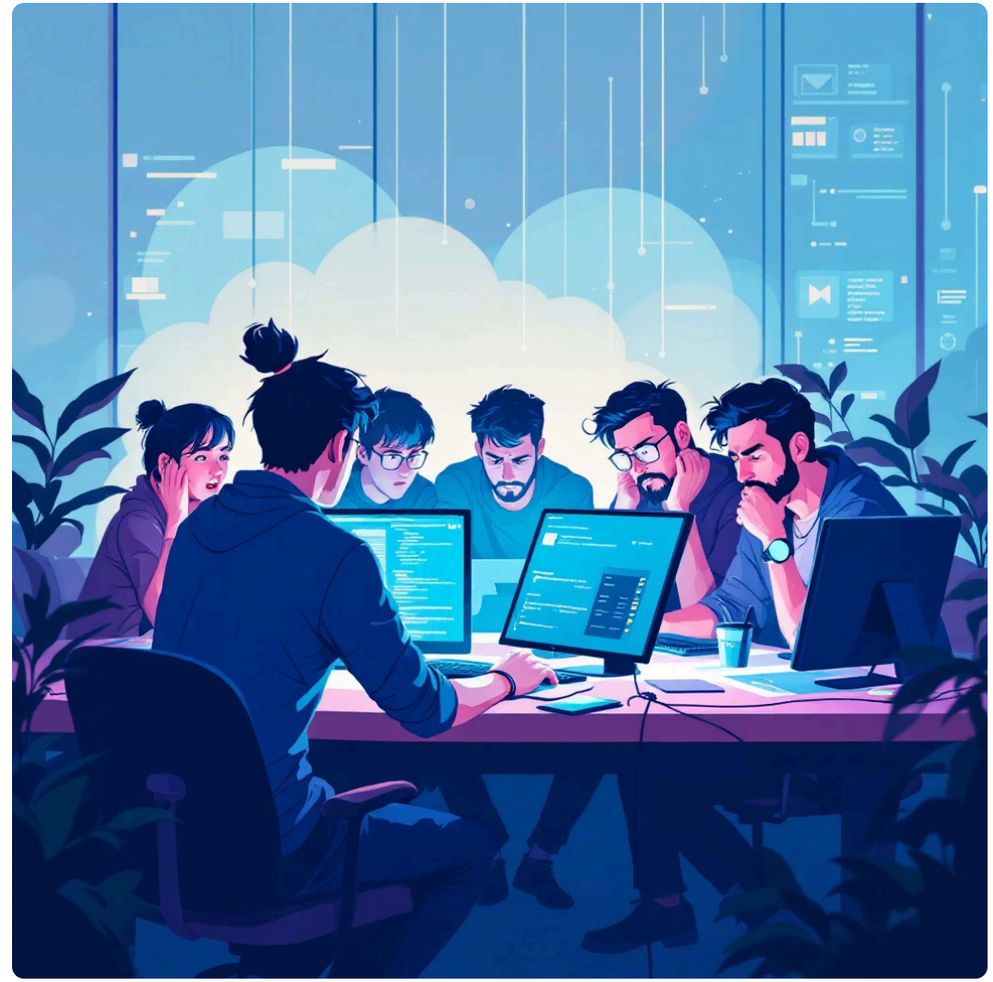
Real-time collaborative coding platform with AI-powered test generation A Full-Stack Platform for Coding Contests and Real-Time Collaboration Integrating Node.js, React, Mobile Clients, and AI Assistance

Single source of truth

What is a CodeSpace for?



CodeSpace is a collaborative coding and contest platform. It allows users to practice problems, join contests, and work together in real-time rooms. It also integrates secure code execution in Docker containers, live communication through Socket.IO, and AI-powered coding assistance. In short, CodeSpace is built to help students and developers learn, compete, and collaborate seamlessly—whether on web or mobile.



Why CodeSpace !!

Discover Problems

Browse curated programming challenges from multiple sources with difficulty ratings and tags.

Join Collaborative Rooms

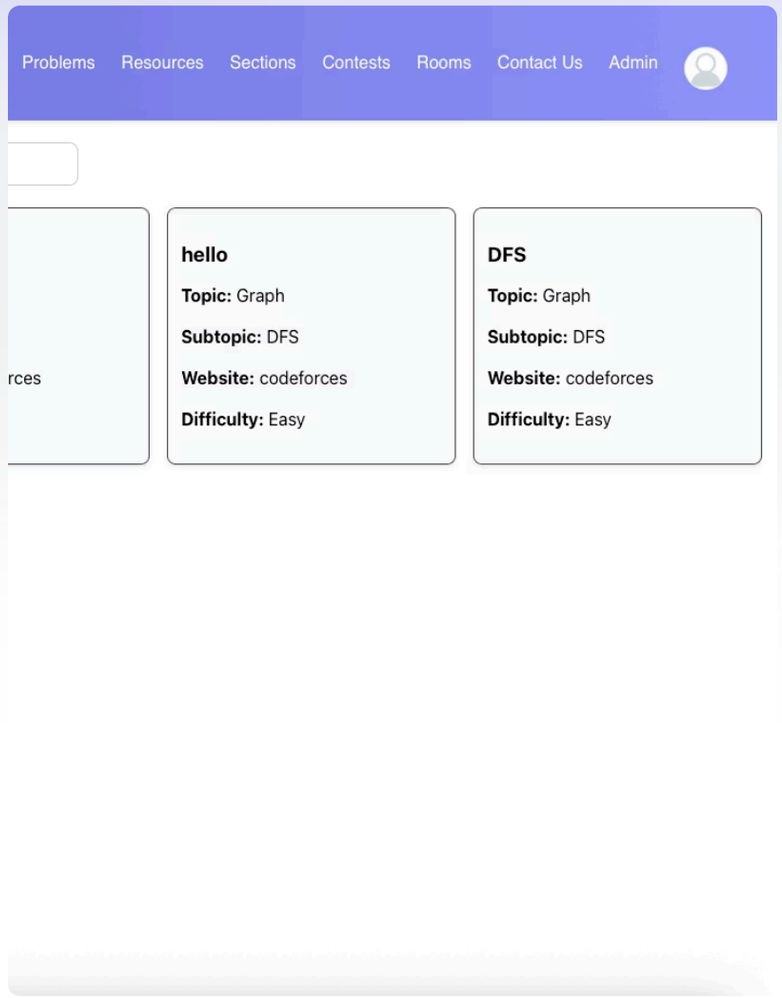
Enter public or private coding rooms with real-time shared editing and live cursors.

Code & Test Together

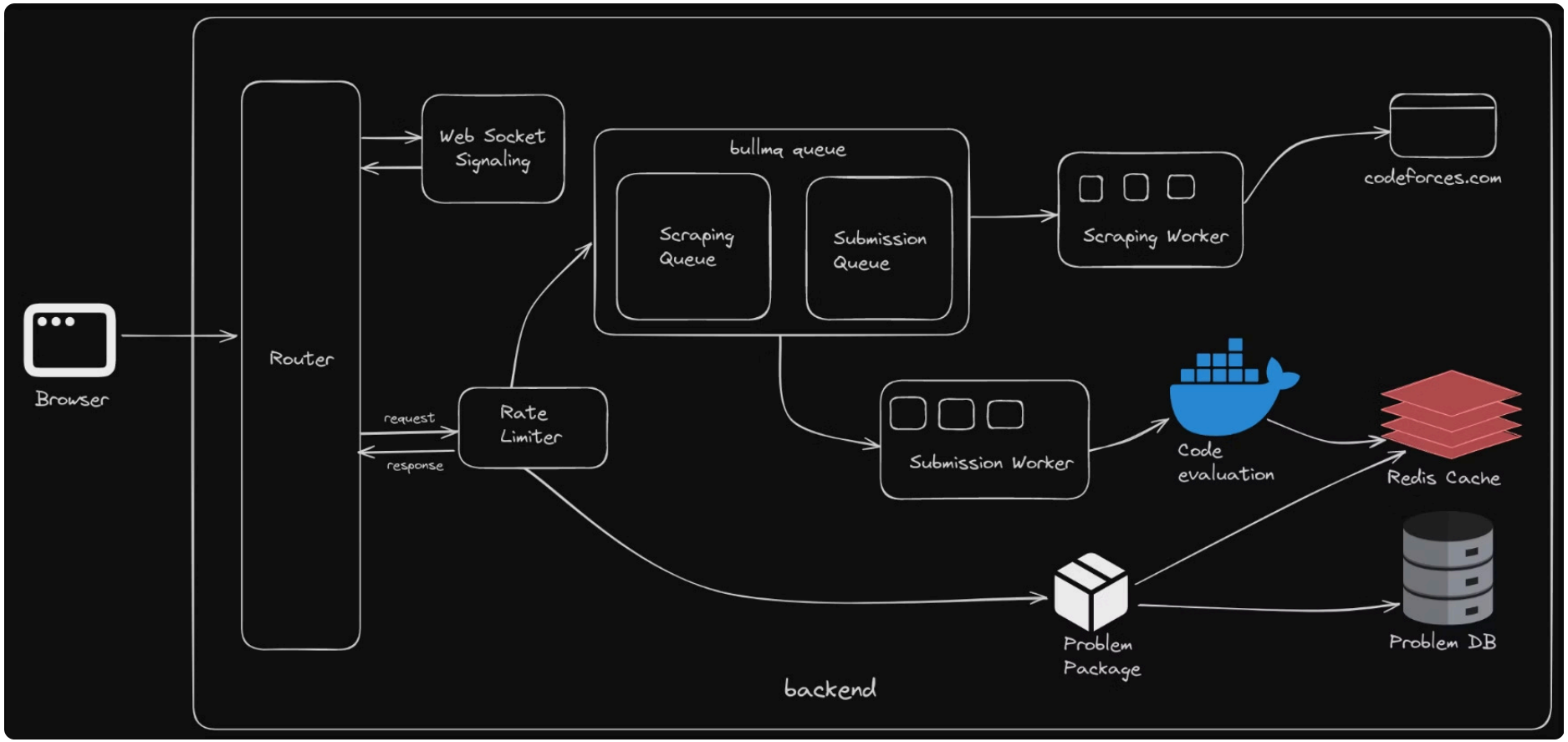
Write solutions collaboratively with instant compilation, testing, and shared debugging sessions.

Compete & Track Progress

Submit to timed contests with live leaderboards and comprehensive performance analytics.

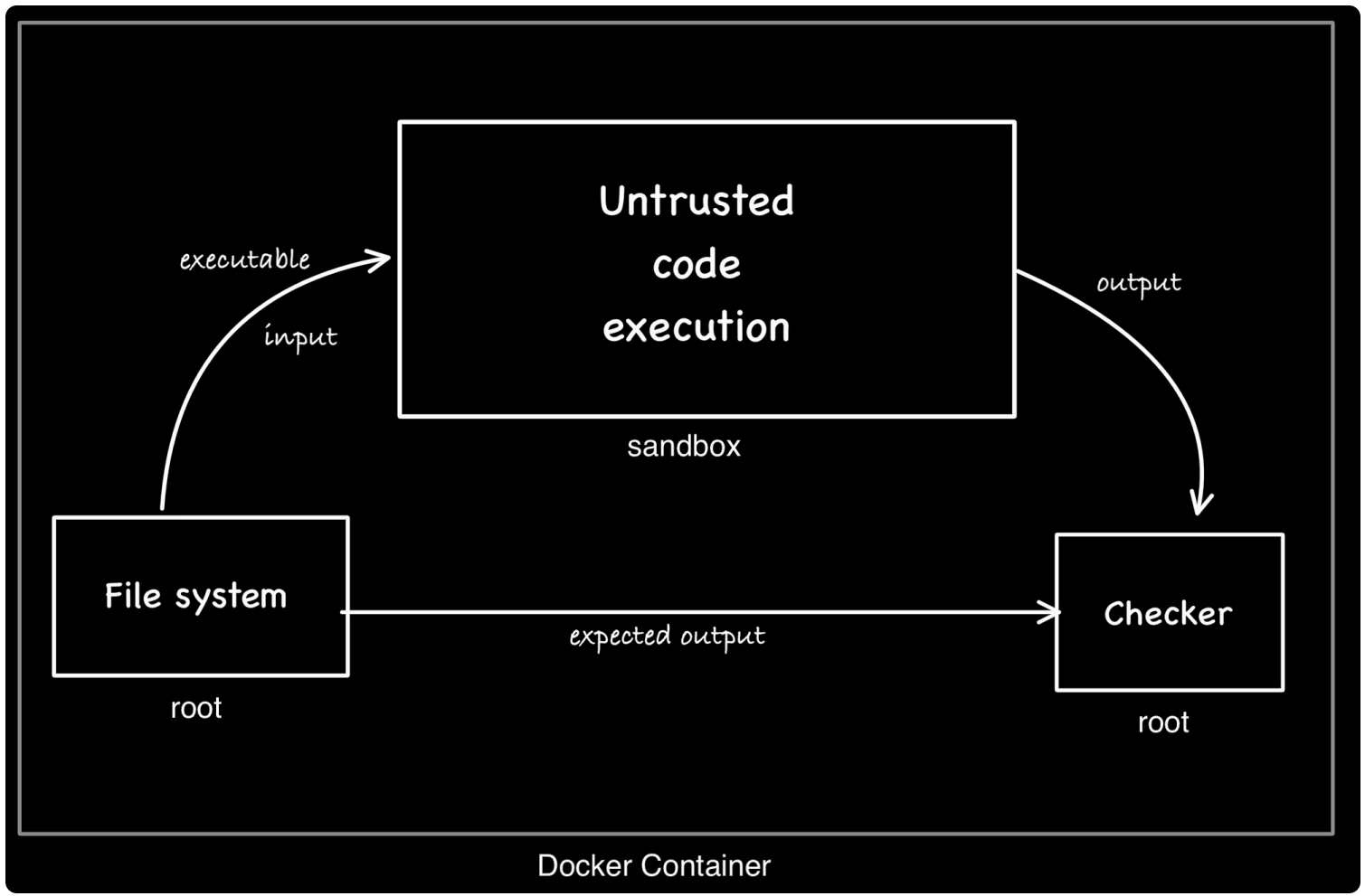


System Architecture Overview



Microservices architecture emphasizing separation of concerns: real-time collaboration, request-response APIs, and asynchronous background processing for optimal scalability and maintainability.

System Architecture Overview



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Content Ingestion & Caching Strategy

Intelligent Scraping

Scheduled scrapers fetch problem metadata with respectful rate limiting and legal compliance measures.

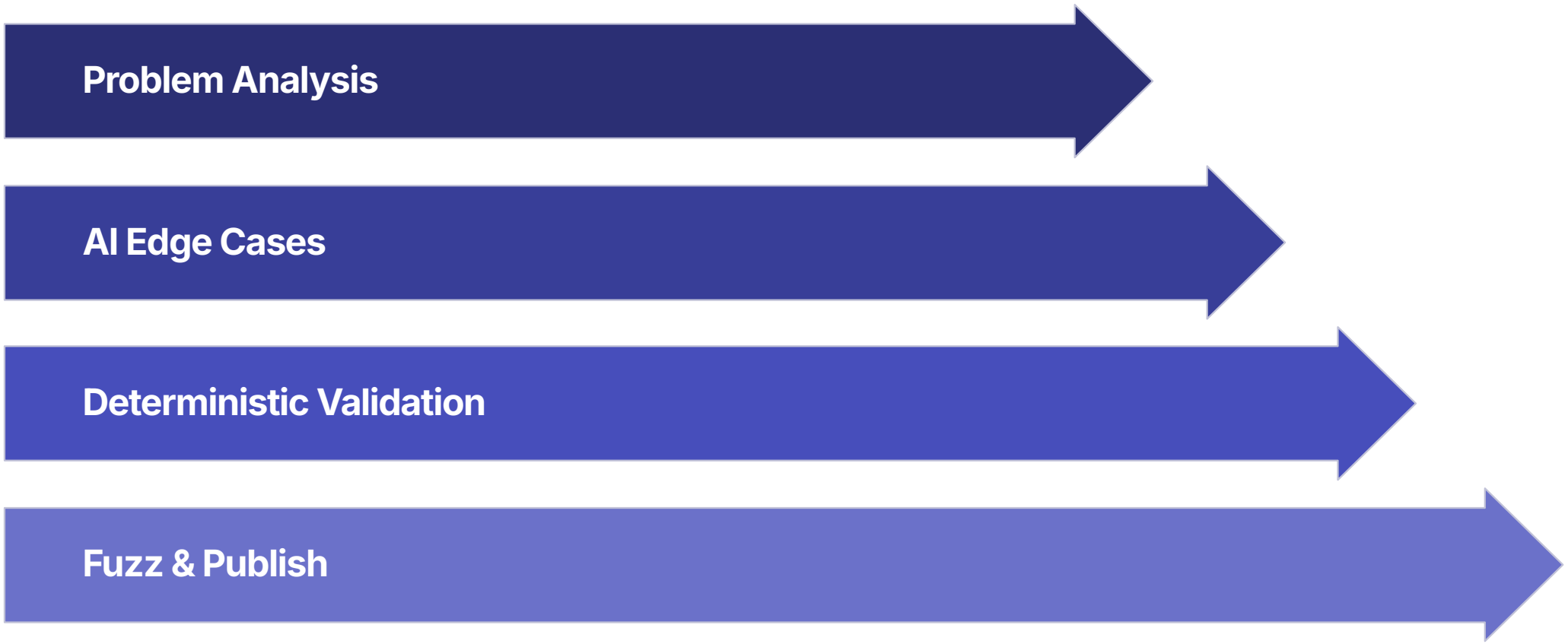
Redis Caching

High-performance caching layer reduces external API calls and enables sub-second problem retrieval.

Content Normalization

Parse and standardize problem statements into canonical format with automatic deduplication.

AI-Powered Test Case Generation



Real-Time Collaboration Technology

WebSocket Streaming

Ultra-low latency for cursor positions, live edits, and presence indicators across all connected users.

Conflict Resolution

CRDTs and Operational Transforms ensure consistent document state without central locking mechanisms.

Bandwidth Optimization

Delta-based synchronization sends only changes, not entire documents, for efficient mobile performance.

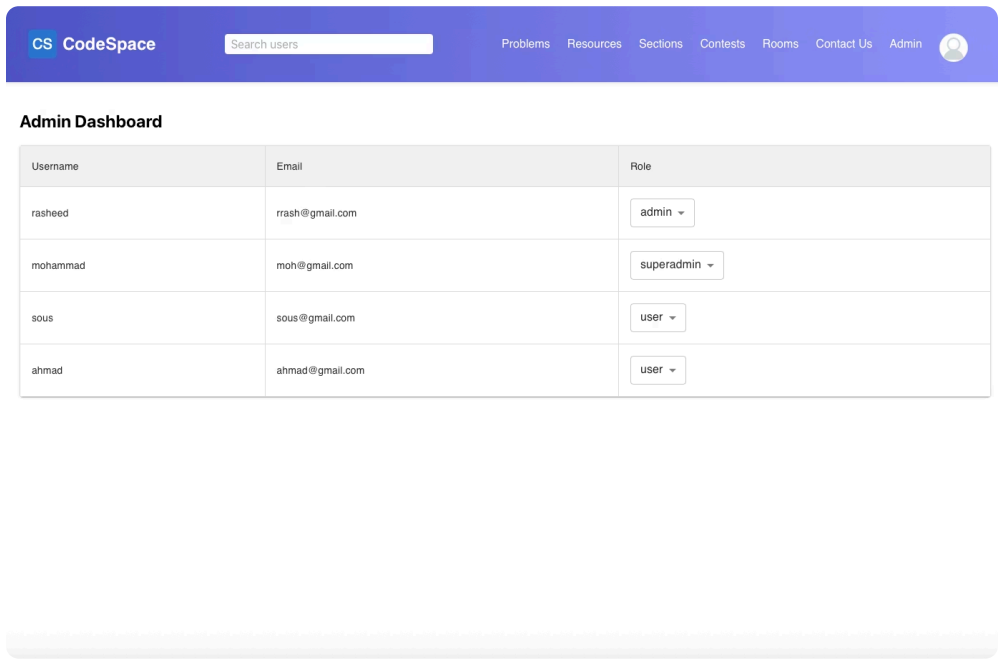
Enterprise Security & Administration

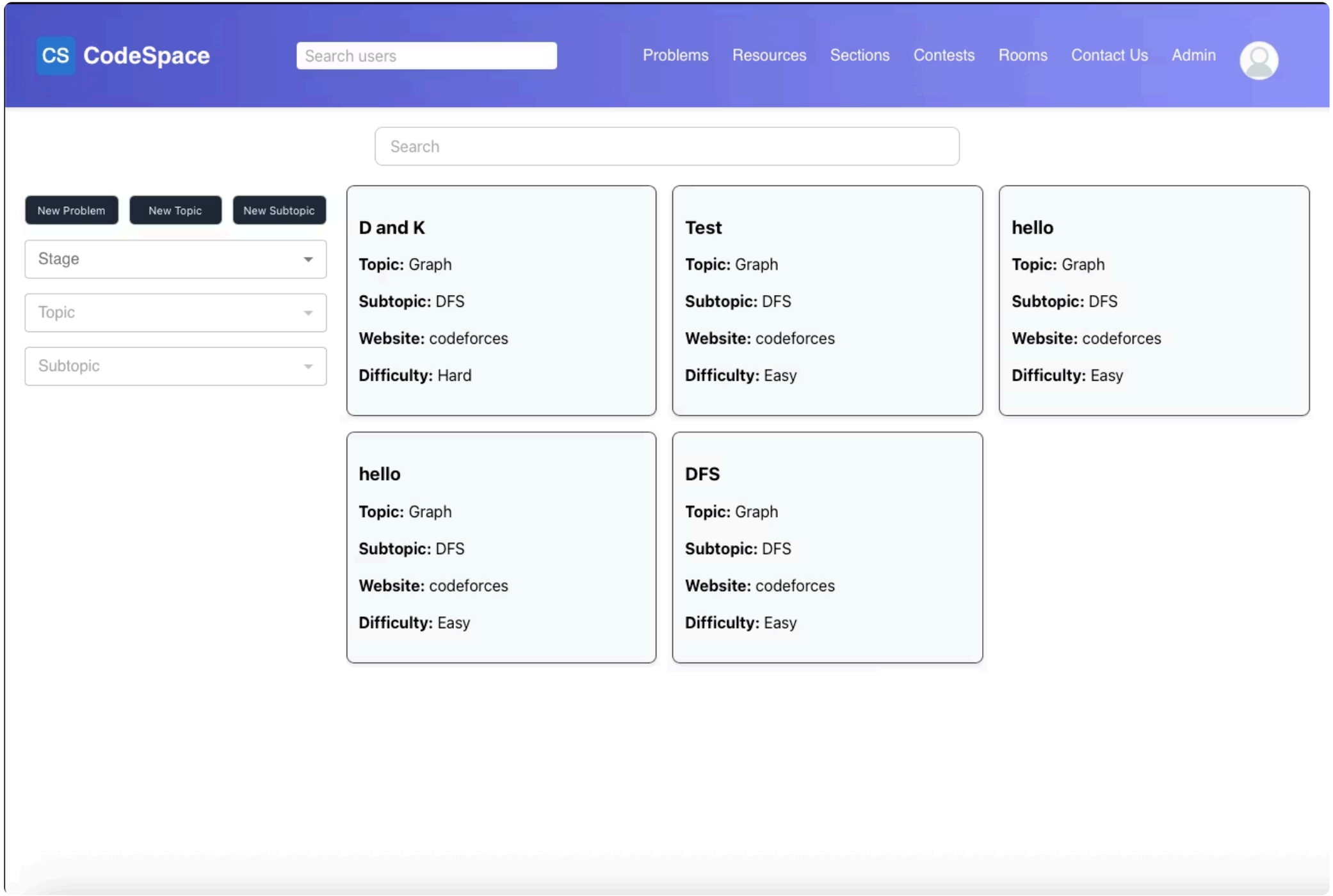
Security Measures

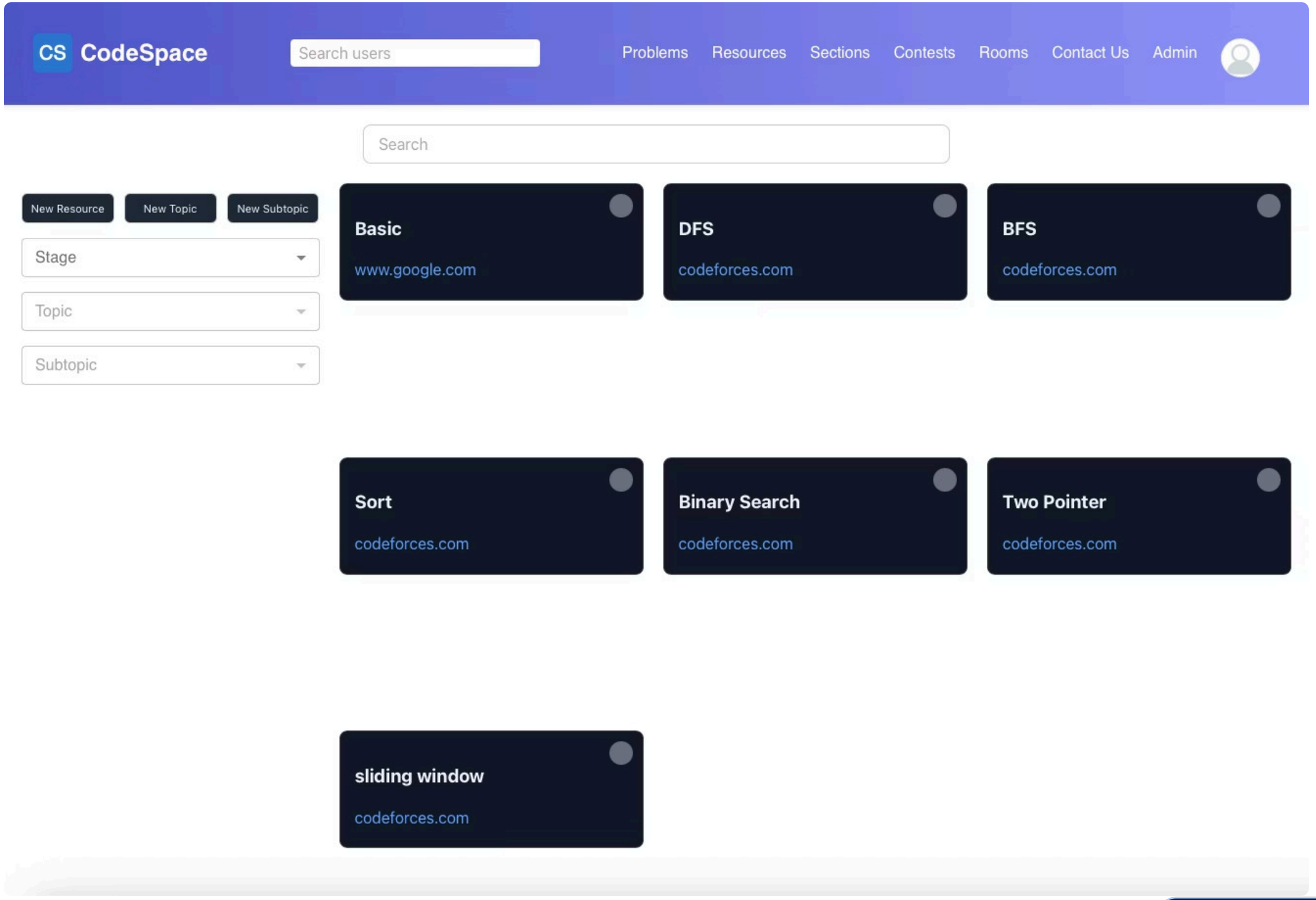
- Defense-in-depth container sandboxing
- Input sanitization and rate limiting
- JWT authentication with refresh tokens
- Real-time abuse detection and monitoring

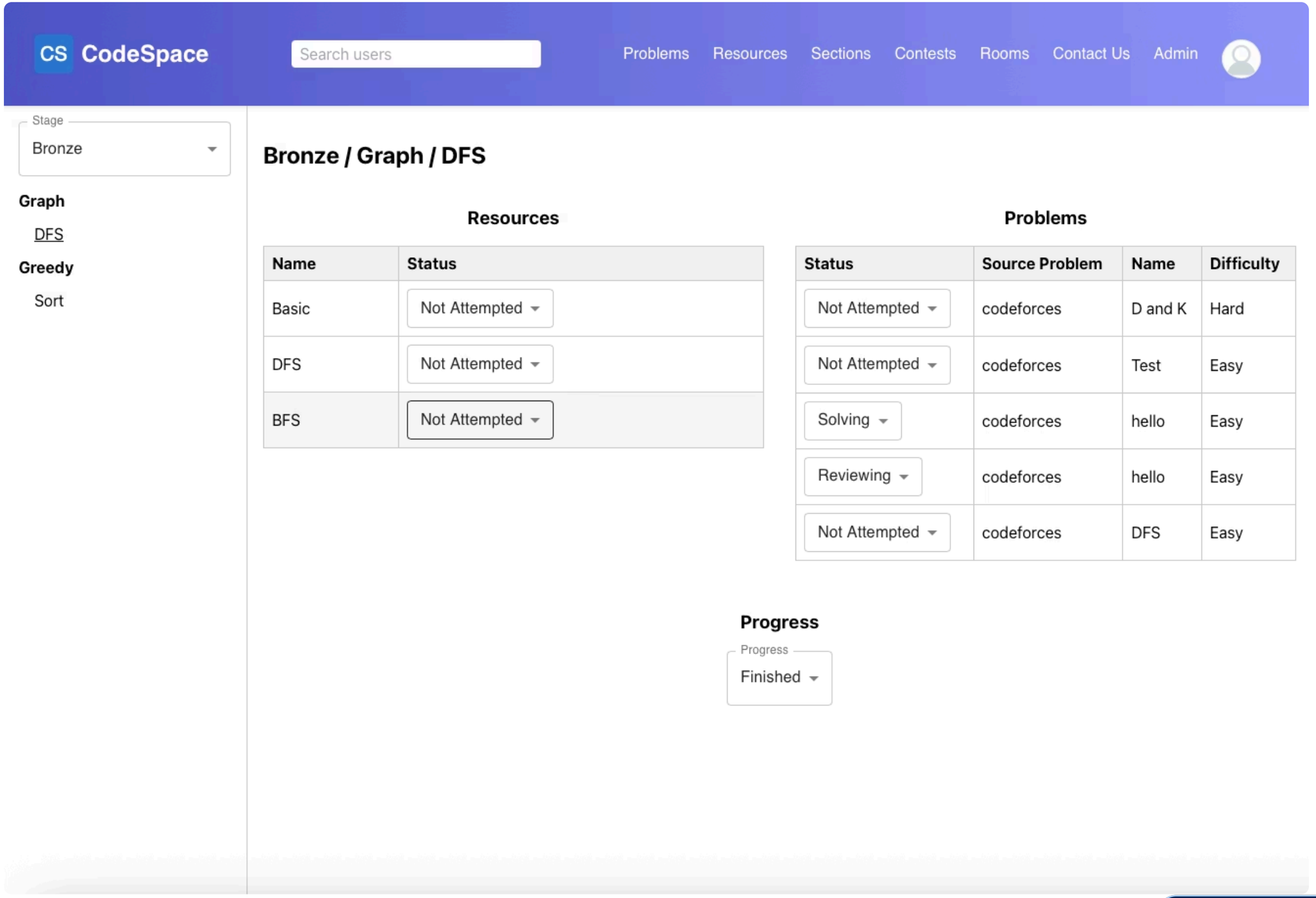
Admin Features

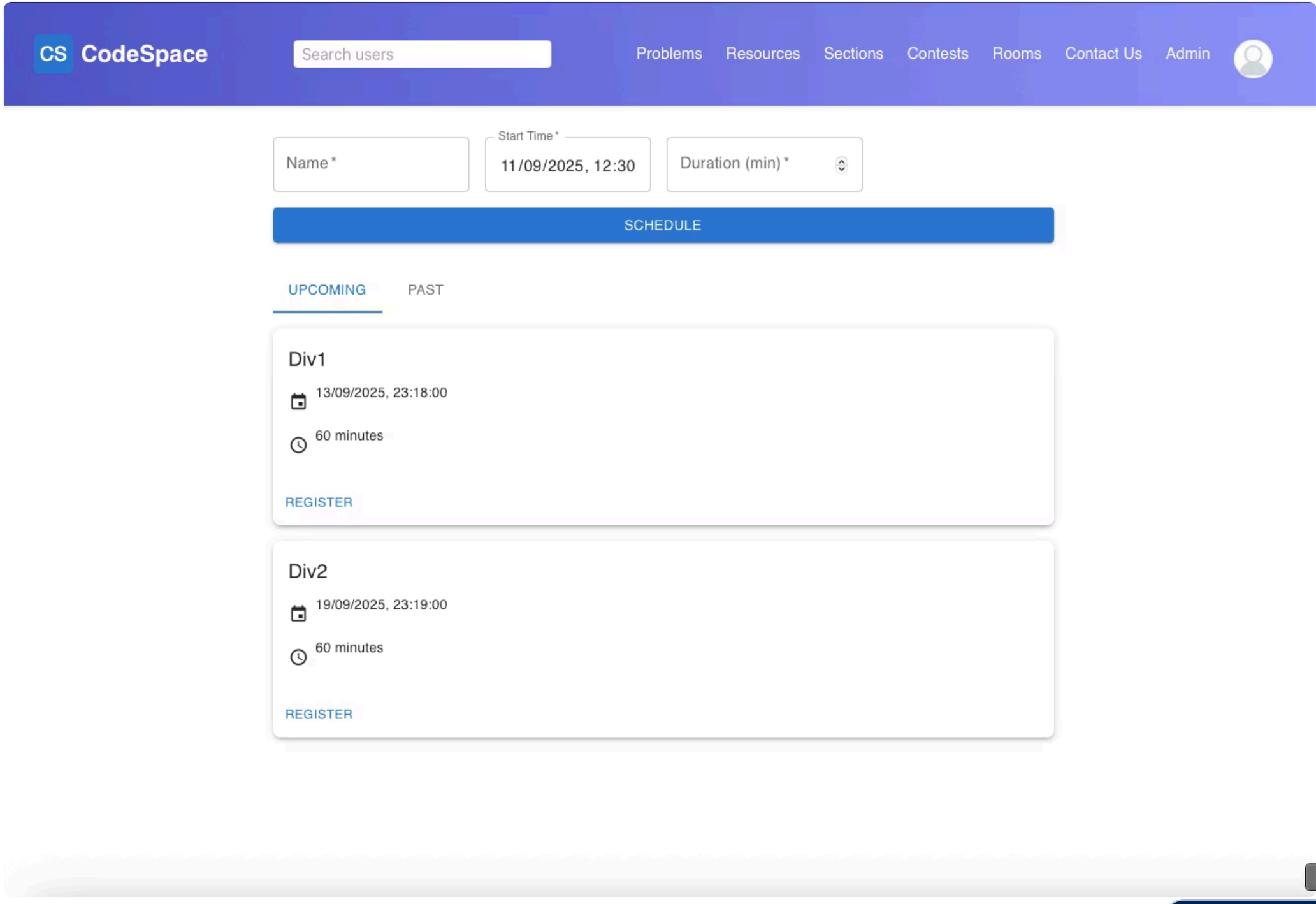
- Dynamic RBAC with granular permissions
- Comprehensive audit logging system
- Problem review and moderation queue

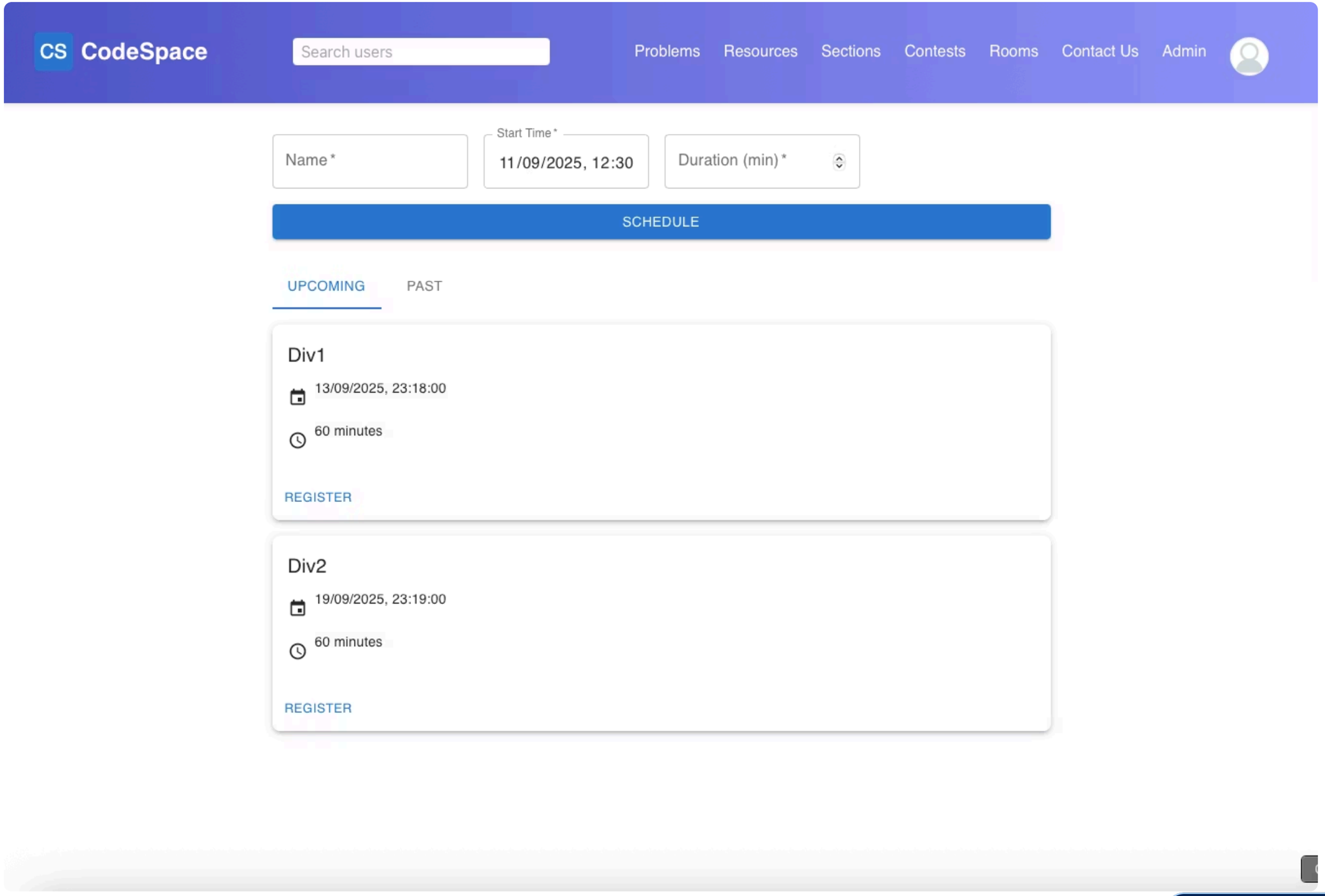












mohammad

Chat | AI

suhaib
Hello

hi

Hi

Type a message...

Clear | Send

Clear Problem

A. Watermelon

Input format

The first (and the only) input line contains integer number w (1≤w≤100) — the weight of the watermelon bought by the boys.

Output format

Print YES, if the boys can divide the watermelon into two parts, each of them weighing even number of kilos; and NO in the opposite case.

Input	Output
8	YES

C++

```cpp
#include <bits/stdc++.h>
using namespace std;

int main(){
 int t;
 cin >> t;
 while(t--){

 }
}
```

Input

2

Output

CS CodeSpace

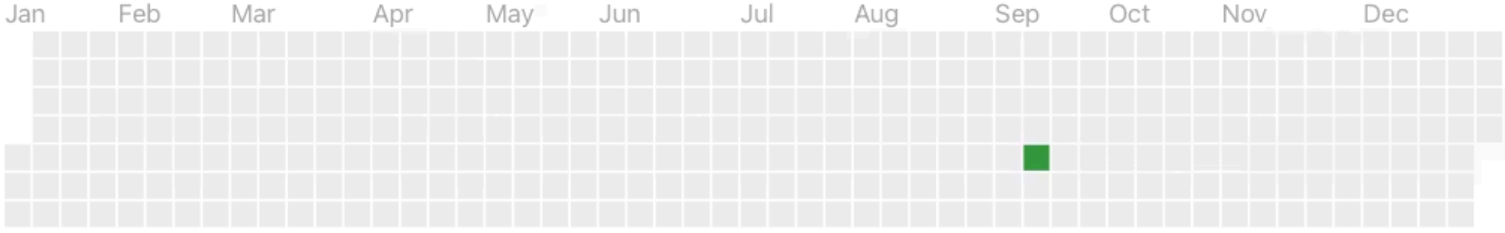
Search users

Problems Resources Sections Contests Rooms Contact Us Admin

WaveBreaker Unrated

Contributions: 3 Friends: 1 Edit Profile

Submission Activity



Recent Submissions

Problem	Verdict	Language	Time
ca1b1995-e381-47f5-a36b-2cf1194869ed	Accepted	cpp	11/09/2025, 04:12:44
Custom Problem	Wrong Answer on test 1	cpp	11/09/2025, 03:03:09
Custom Problem	Accepted	cpp	11/09/2025, 03:02:59