

# AlgoLog

## Competitive Programming Analytics Platform

Revolutionizing Performance Tracking for Coders

**Domain:** Web Development (MERN Stack)

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## CHALLENGE IDENTIFIED

# The Problem: Lack of Unified Progress Tracking

Competitive programming is crucial for skill development, but tracking progress across diverse platforms is a significant hurdle for students and educators alike.

### **Fragmented Performance Data**

No centralized system to track student coding progress across multiple platforms like LeetCode, CodeChef, and Codeforces.

### **Limited Teacher Oversight**

Teachers lack real-time, consolidated insights into individual and class-wide student performance.

### **Inefficient Benchmarking**

Students struggle to efficiently benchmark their performance against peers or track their own growth over time.

## OUR SOLUTION

# AlgoLog: A Comprehensive Analytics Platform

AlgoLog is an end-to-end analytics system built to streamline competitive programming performance tracking, offering a single, unified view of student progress.

- **Aggregated Data:** Consolidates performance metrics from major platforms: LeetCode, CodeChef, Codeforces, HackerRank, Skillrack, and GitHub.
- **Automated Web Scraping & APIs:** Leverages web scraping technologies and robust APIs to fetch real-time coding statistics, ensuring accurate, up-to-date insights with seamless CSV export for reports.
- **Role-Based Access:** Provides tailored dashboards for Admins, Teachers, and Students, ensuring relevant insights for each user group.

## PROJECT OVERVIEW

# Technologies Used



### Technology Stack

Built with a modern tech stack:

- Frontend: React, Tailwind, Recharts
- Backend: Node, Express, Puppeteer, Cheerio (**Web Scraping**)
- Auth: JWT
- Database: MongoDB
- Utils: CSV Export, Cron Jobs

## KEY OBJECTIVES

# Empowering Programmers & Educators

1

### Simplify Tracking

Streamline the tracking of competitive programming progress for individual students.

2

### Enable Monitoring

Allow teachers to monitor student growth, identify strengths, and pinpoint areas for improvement in real-time.

3

### Provide Insights

Offer insightful visualizations and detailed contest history analytics for deeper understanding of performance trends.

## PROJECT OUTCOMES

# Core Deliverables of AlgoLog



### Web Platform

A secure, responsive, and intuitive MERN stack application accessible across devices.



### Dynamic Dashboards

Tailored statistical dashboards for Student, Teacher, and Admin roles, featuring interactive graphs.



### Data Export & APIs

Powerful APIs and automated web scraping to gather coding stats, with seamless CSV export for reports.

## DISTINCTIVE FEATURES

# AlgoLog's Innovation Edge



### Automated Data Sync

Intelligent scraping and refetching mechanisms for up-to-date coding statistics across all platforms.

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### Dynamic Role Management

Flexible Department-Class-Section mapping with granular role-based access control.

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### GitHub Integration

Seamless integration with GitHub commit history and visual representations of contest performance over time.

DEVELOPMENT PROGRESS

# Access Our Codebase

Explore the full source code and contribution history of AlgoLog on our GitHub repository.



[View GitHub Repository](#)

For detailed implementation and future plans, please refer to the README.md.



## USER EXPERIENCE

# AlgoLog in Action: Key Interface Views

See how AlgoLog translates complex data into intuitive, actionable insights through its user-friendly interface.

	LeetCode	HackerRank	CodeChef	Codeforces	SkillRock	GitHub	Details
Aadhisaran P	198 solved 18 E   10 M   8 H	Problem Solving Java	283 solved Rating: 99	10 solved Unrated	750 solved Rank: 35492	Commits: 84 Public Repos: 28	View >
Aadhy V N	83 solved 52 E   26 M   5 H	Java	1 solved Rating: N/A	0 solved Unrated	588 solved Rank: 5031	Commits: 34 Public Repos: 8	View >
Ajay K K	506 solved 266 E   230 M   20 H	Java	94 solved Rating: 1332	9 solved Unrated	376 solved Rank: 72884	Commits: 198 Public Repos: 22	View >
Ajayaravind P S	98 solved 47 E   43 M   8 H	Problem Solving Java	17 solved Rating: N/A	0 solved Unrated	431 solved Rank: 93364	Commits: 86 Public Repos: 16	View >
AKASH KRISHNAN K	111 solved 44 E   62 M   5 H	Problem Solving Days of JS	59 solved Rating: N/A	0 solved Unrated	534 solved Rank: 54812	Commits: 73 Public Repos: 7	View >
Akshay T P	101 solved 47 E   46 M   8 H	SQL C language	364 solved Rating: 712	Unrated	203 solved Rank: 101600	Commits: 145 Public Repos: 18	View >
Angu Rakarisa S	105 solved 5 E   40 M   5 H	Problem Solving Java	417 solved Rating: 375	0 solved Unrated	892 solved Rank: 27069	Commits: 25 Public Repos: 15	View >
Anirudh T V	157 solved 65 E   79 M   13 H	Problem Solving Java	100 solved Rating: N/A	0 solved Unrated	691 solved Rank: 40183	Commits: 14 Public Repos: 18	Made by @dha

Faculty/Department Dashboard

LeetCode		HackerRank	
115	#368,586	Problem Solving	★★★★
easy	39	Java	★★★★
medium	84	Days of JS	★★★★
hard	12	C language	★

Student Dashboard

CSE	ECE	EEE	AIML
AIDS	CSBS	CCE	MECH
IT	CYS		

Admin Dashboard

These interfaces are designed for clarity, responsiveness, and ease of navigation across all user roles.

## AVAILABILITY

# Experience AlgoLog Live!

AlgoLog is deployed and accessible online. We invite you to explore the platform and its features firsthand.

[Student Portal](#)

[Department/Faculty Portal](#)

[Admin Portal](#)

Thank you for your attention. We are ready to answer any questions.