AlgoLog

Competitive Programming Analytics Platform

Revolutionizing Performance Tracking for Coders

Domain: Web Development (MERN Stack)

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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.

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.

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

Empowering Programmers & Educators

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Simplify Tracking

Streamline the tracking of competitive programming progress for individual students.

Enable Monitoring

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

Provide Insights

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

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.

AlgoLog's Innovation Edge

Automated Data Sync

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

Dynamic Role Management

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

GitHub Integration

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

DEVELOPMENT PROGRESS

Access Our Codebase

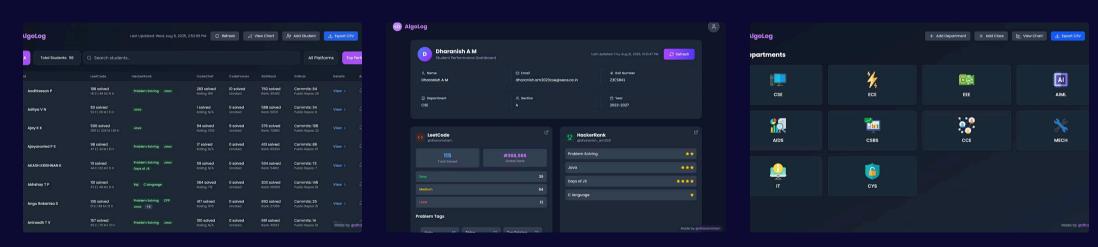Explore the full source code and contribution history of AlgoLog on our GitHub repository.

🔗 **View GitHub Repository**

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

AlgoLog in Action: Key Interface Views

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

Faculty/Department Dashboard

Student Dashboard

Admin Dashboard

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

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.