

Team Number 18: DSA VS

Team Members: Lawrence Liu, Josh Cho, Tyler Gantry, Joshua Jackson

Problem Statement:

Currently, the barrier of entry for interviews are “LeetCode” style DSA questions, which are often isolating, repetitive, and lacking instant feedback. DSA VS aims to “gameify” this process, making a once tedious task seem fun through a “1v1” style battleground.

Project Objectives:

The initial goal is to deploy DSA VS as a web app, utilizing a modern frontend, backend, and DevOps technologies. The core design of the project relies on a real-time competitive coding platform to allow students to practice algorithms. Since the web app follows a standard matchmaking system, an ELO system based on the user's performance must be calculated and stored. Additionally, student run code must be run on an isolated code execution system that grades without allowing arbitrary code execution.

Stakeholders:

- Users: People who are searching for a job as a software engineer/CS Students
- Developers: Lawrence Liu, Josh Cho, Tyler Gantry, Joshua Jackson
- Project Manager: Zhou Xuan
- Project Owners: Lawrence Liu, Josh Cho, Tyler Gantry, Joshua Jackson

Deliverables:

- User authentication and account management
 - Account data stored in postgres database
- Problem lists with problem details
- In browser code editor and submissions
 - Monaco editor
- Live matchmaking
 - Elo based Queue
- Secure code execution and judging system
 - Judge0
 - Docker sent to an isolated VM for code execution
- Submission history and result feedback
- ELO/ranking system