

# HEAT-WAVE

## An Online Judge

### Problem Statement

An online judge is needed that not only checks for compilation errors and passes test cases, but also evaluates other aspects of your code such [as styling, readability, DRY \(Do not Repeat Yourself\), and comments](#). This is important because writing readable code with minimal repetition is a necessary skill for a good coder, especially in real-world projects where collaboration with a team is required.

### Introduction

Solving the mentioned problem while also providing common features such as contests, question uploads, and contest hosting.

# Technology

The frontend will be developed using React, and the backend will be implemented using Django.

## Roles

- **Admin**
- **User**
- **Special user(View )** – Team members who acknowledge user's requests for question submission and problem setters etc.

## Features

- **Sign in / Login**
- **Participating in contest**
- **Leaderboard**
- **Problem Solving**
- **Keeping Track of profile**
- **Judging code**
  - **Run(compilation)**
  - **Submit(Passing test cases (predefined / custom))**

- Judging styling of code
- Sharing the solution for everyone's access.
- Contest creation after permission from admin/ payment part

## Tables/Schemas

### 1.User(

- Id Primary Key text,
- Password text

)

### 2.User\_Status(

- user\_id Foreign key,
- problem\_solved\_id Foreign Key,
- Rating INTEGER,
- Rank INTEGER,
- Contest\_participated\_id text,
- Membership text,
- Name text,

- Email\_id text,
- DOB date,
- Phone\_no text,
- Location text,
- Current\_position(student, working Professional) text

)

### 3.Problems(

- Id text,
- Statement text,
- Difficulty\_level ENUM(EASY, MEDIUM, HARD),
- Solution text

)

### 4.Testcases(

- Problem\_id Foreign Key text,
- Input text

- Output text (auto generated based on solution code of problem)
- )

#### 5. Contest(

- ID text,
- Problems\_id Foreign Key text,
- Timestamp datetime,
- User\_participated\_id Foreign key text,
- Leaderboard\_id text

)

#### 6.Leaderboard(

- Leaderboard\_id TEXT,
- Contest\_id Foreign key,
- User\_id Foreign Key,
- Position Integer

#### 7.Team\_member(

- Id primary key,
- Role text,
- Other details(like name , DOB etc)...

)

## Web

### Display 0: Login/sign up

- Signup form
- Or Login form (if already registered)

### Display 1: Home page

- Problem List
- Navbar
- Ongoing Contests

### Display 2: Problem view

- Problem statement
- Code Editor
- Run and Submission
- Output window
- My Submissions

### Display 3: Solution

- List of solutions posted by others who have done problem earlier

#### Display 4: Submitting solution page

Form taking necessary details of solution to be posted by user.

#### Display 5: Contest

- Previous Contest
- Live contest
- List of Problems of contest
- Leaderboard

#### Display 6: Creating own contest

- Payment option
- Drop Down for submitting problem statement, test cases and other constraints as per host
- Form for details of contest (Timing , eligibility)