# Online Judge

**Requirements:**

1. **User Authentication:** Helps in logging in and signing up the user. Two types of login as an admin or as an user. Also register required for user.

**User Requirements:**

1. **Navbar:** This consists of options to view one’s profile ,checkout the problemset,check one’s previous submissions,and also have a signing out option . This Navbar is universal and except for the authentication page exists over all pages.
2. **ProblemSet:** this page lists all the problems with a section representing hard,medium,easy.
3. **Problem\_page:** this page opens on selecting any problem from the problemset. It consists of a detailed description of the problem with an embedded text editor to write the code there only. Further it also consists of a console to take input , a run button to run the code on the given input in console and finally a submit button.
4. **Submissions\_page:** This page can be opened through navbar and it directly opens on clicking the submit button. Here all the previous submissions are shown. Submissions consist of a line including a problem\_id , Problem\_name and the verdict.
5. **Profile\_page:** this page shows the count of total no.of problems solved by the user, also shows the user’s handle name , photo of the user .

**ADMIN Requirements**

1. **ProblemSetModifier:** This page is similar to the user problem set wit the added speciality of adding problems and their testcases and testing them and also removing certain testcases.

**FrontEnd:**

**USER:**

1. **Authentication Page:** contains two field , 1 to enter username/email , 2nd to enter password and a button to login . On incorrect password it shows to enter correct password and login with an option of forgot password.
2. **Home Page:** This contains the navbar to navigate to certain pages. Also this page contains any general information regarding the online judge and also contain information regarding addition of new problems , etc.
3. **Profile Page:** A page consisting of the universal navbar , with the profile photo of user , Handle name of user, User original name, total no.of submissions , email\_id of user,etc.
4. **Problem\_Set:** This page contains a list of problems . A list row consist of problem ID , problem Name, and a checkbox which is ticked if the problem is solved by the user. It also contains a tag representing the difficulty of the problem. (Optional-will try to include a list of problems which are attempted by the user but have not been solved)
5. **Submission\_Page:** This consists of the list of all the submissions by the user. A row of the list consists of the problem name , problem id, user handle, and also the verdict of the submission regarding that problem.
6. **Problem\_Page:** This consists of the problem page with description about the problem and a code editor on the right side of the page with the option to run one’s code on user given testcases and submit the given problem

**(to be NOTED: Navbar is Universal except for authentication page)**

**ADMIN**

1. **Admin has all the above pages with the problem set page modified to modify/add problems and testcases.(**layout not designed**)**
2. **(**May require an additional page where we add description of the problem(with images) and uploa

Database Design:

1. **Problems-**

* Problem ID(String)
* Problem Name
* Problem-Description
* Problem-Tag(Difficulty)

1. **TestCases-**

* input
* output
* problem: reference to the problem document

1. **Submissions-**

* **(Problem ID)** reference to the Problems
* User
* Date/time
* Verdict(Accepted or the testcase on which it failed)

1. **Users-**
   * Username/Handle
   * Password
   * Email linked
   * Name of the User
   * Problems Visited
   * Verdict of Problems

**Backend:**

1. Authentication Page:

* Login (Post)
* Register(Post)

1. Problem\_Set:

* Problem fetching

1. Problem\_Modification:

* Problem Creating/updating
* Testcase creating/updating

1. Secured Route:

* Problem Submitting

1. d the testcases **)**