HIGH LEVEL DESIGN DOCUMENT

ONLINE JUDGE

Online Judge is an online code evaluation system that remote runs code securely and provide verdict whether the given code is correct/wrong/inefficient
otherwise shows error. This actually compares the actual answer of the problem to user output.
This also checks the test cases for the given user code.

USER CODE → ONLINE JUDGE → PROCESSING → VERDICT

STEPS:
1 BUILDING THE PROJECT USING MERN STACK
       FRONTEND PART:
              LANGUAGE: REACTJS
              LOGIN PAGE
              PROBLEMS LIST PAGE
              PROBLEM STATEMENT PAGE
              CODE EDITOR AND VERDICT
              LEADERBOARD PAGE
              ADMIN PAGE
       DATABASE PART:
              LANGUAGE: MONGODB
              USER DETAILS
              PROBLEMS DETAILS
              CODE SUBMISSION-LANG, CODE, SUBMISSION DETAILS
              LEADERBOARD DETAILS
       BACKEND PART:
              LANGUAGES: EXPRESS.JS, NODE.JS
              AUTHENTICATION & AUTHORIZATION BY GOOGLE AUTH
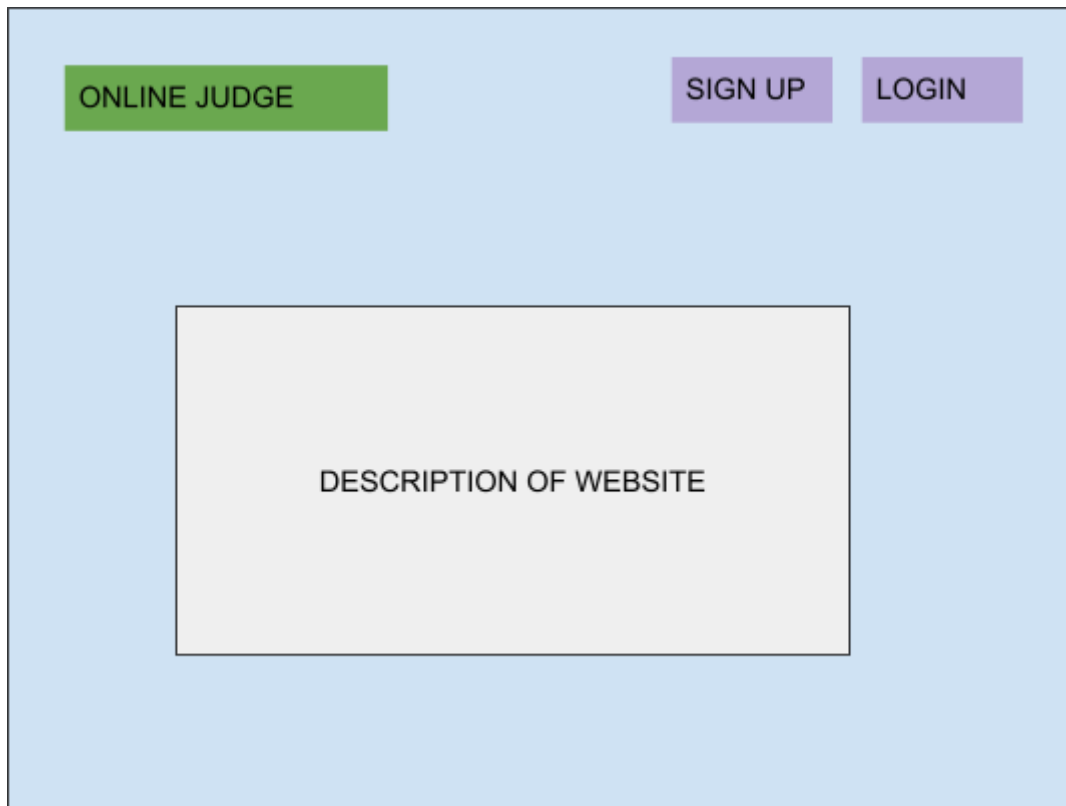   INBUILT COMPILER
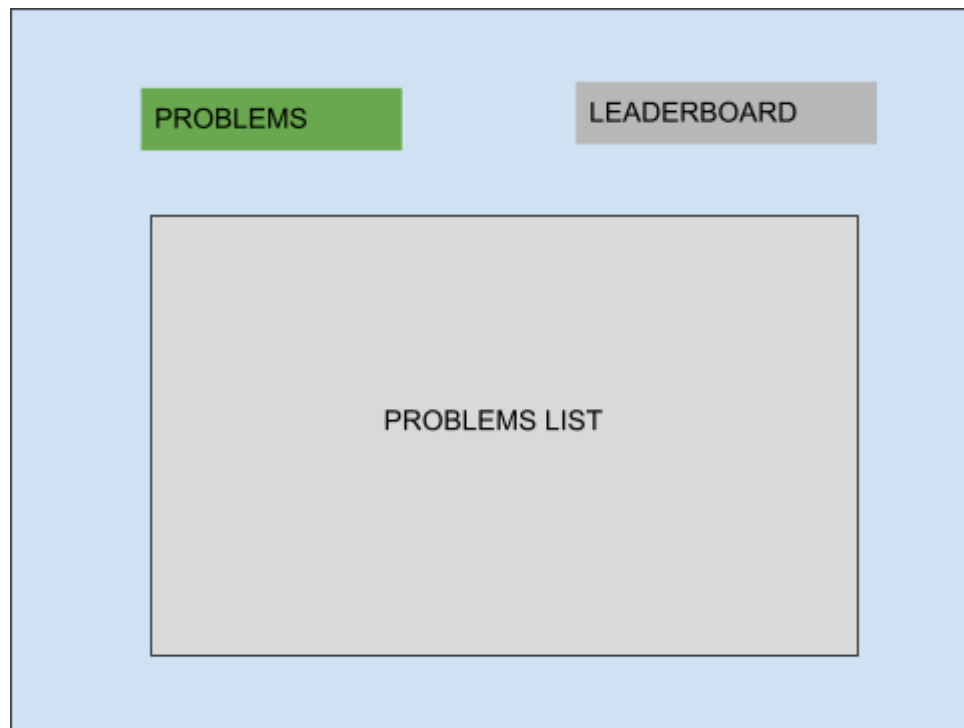   APIs USAGE

2 DEPLOYMENT IN AWS
3 SCALABILITY

SECURITY:
       CHECKING CODE MALICIOUS OR NOT
       CODE STORAGE SECURITY

LOGIN PAGE:

ONLINE JUDGE

SIGN UP LOGIN

DESCRIPTION OF WEBSITE

HOMEPAGE:

PROBLEMS

LEADERBOARD

PROBLEMS LIST

PROBLEM STATEMENT PAGE:

PROBLEM NAME

PROBLEM STATEMENT

CONSTRAINTS

SAMPLE TEST CASES

SUBMISSIONS

Lang selection

User code with inbuilt compiler

Custom input

Run

Submit

Verdict

ADMIN PAGE:

EDIT PROBLEM PAGE

EDIT USER DETAILS

EDIT LEADERBOARD

EDIT ADMINS DETAILS

DATABASE PART:

USER SCHEME
    ID
    NAME
    PHONE NO
PROBLEM SCHEME
    ID
    STATEMENT
    CONSTRAINTS
TEST CASES SCHEME
    ID
    IN
    OUT
    PROBLEM ID
SUBMISSION
    VERDICT
    USER ID
    PROBLEM ID
    STATUS

BACKEND:
    UI   req→ ←response BACKEND(processing) fetch details→ ←data DB
    Restful APIs
        Problem list
        Problem details