

Problem Set: 6

CSE 2106

The database is centered on a programming contest and includes tables such as Users, Contests, Problems, Submissions, and Languages.

Table Structure

1. **Users:**

- user_id: INT (Primary Key)
- username: VARCHAR(100)
- email: VARCHAR(100)
- registration_date: DATE
- rating: INT

2. **Contests:**

- contest_id: INT (Primary Key)
- contest_name: VARCHAR(100)
- start_date: DATE
- end_date: DATE

3. **Problems:**

- problem_id: INT (Primary Key)
- problem_name: VARCHAR(100)
- difficulty: VARCHAR(20)
- contest_id: INT (Foreign Key referencing Contests)

4. **Submissions:**

- submission_id: INT (Primary Key)
- user_id: INT (Foreign Key referencing Users)
- problem_id: INT (Foreign Key referencing Problems)
- submission_time: TIMESTAMP
- verdict: VARCHAR(20)

5. **Languages:**

- language_id: INT (Primary Key)
- language_name: VARCHAR(50)

6. **Submission_Languages:**

- submission_id: INT (Foreign Key referencing Submissions)
- language_id: INT (Foreign Key referencing Languages)

Problem Set

Problem 1:

Title: Find All Users Who Have Not Made Any Submissions

- Write a query to list all users who haven't made any submission yet

Problem 2:

Title: Get Average Rating of All Users

- Write a query to find the average rating of all users in the system

Problem 3:

Title: Identify Users Who Submitted in Multiple Contests

- Write a query to list users who have made submissions in more than one contest.

Problem 4:

Title: List All Programming Languages Used in Submission

- Write a query to list all the distinct programming languages that have been used in any submission.

Problem 5:

Title: Find problems with submissions made by a Specific User

- Write a query to list all the problems that have been solved by a user with username 'Mr. X'

Problem 6:

Title: Get Contest Name Where No Submissions have been made

- Write a query to list contest where no submissions have been made by any user.

Problem 7:

Title: Contest with the Maximum Number of Problems

- Write a query to find the contest that has the maximum number of problems associated with it.

Problem 8:

Title: Find All Users Who Solved at Least One Problem in Their First Contest

- Write a query to find users who made a submission in their first contest and received a verdict of 'Accepted'.

Problem 9:

Title: Find the total number of problems solved by each user

- Write a query to find the total number of problems solved by each user (problems with the verdict 'Accepted').

Problem 10:

Title: Top 5 Users Who Solved the Most Difficult Problems

- Write a query to identify the top 5 users who have solved the most problems with difficulty marked as 'hard'.