

CODING BLOX

Coding Blox is an Online Coding Platform that allows a user to Sign Up, Create Contests and participate in Contests hosted by Others.

Each contest has a set of problems with different levels of difficulty.

Users solve problems and get points based on the difficulty of the problems and after the contests Ratings of the users are updated.

You have to design the Coding Blox platform with the following functionalities.

Command : **CreateUser** <user_name> :

- Provided a user name register a user with default rating of 1500.
- Eg CreateUser yash

Command : **CreateContest** <no_of_problems> <list_of_difficulty_points>:

- Eg CreateContest 4 5 15 35 45
- Sum of difficulties of all problems should be 100.
- AutoIncrement ContestId should be assigned starting with 1.

Command : **AttendContest** <contest_id> <list_of_user_names>:

- Eg AttendContest 2 Ross Monica Joey
- Should generate random questions solved by the users.
 - "Ross" : 1,3,5
 - "Monica" : 2,4
 - "Joey" : 1,5,8
- Should update User Ratings based on the score secured according to the Problems solved.
- Assume this as formula for new rating
 - $\text{newRating} = \text{currentRating} + (\text{currentContestPoints} - 50)$

Command : **LeaderBoard**

- Should display leaderboard with userIds and Ratings
 - "Joey" : 1720
 - "Ross" : 1560
 - "Monica": 1300

Command : **ContestHistory** <contest_id>:

- Should display contest leaderboard with userName and points Secured
 - "Joey" : 65
 - "Ross" : 40

Bonus Functionality :

Command **LeaderBoardInRange <contest_Id1> <contest_Id2>**

- Get the leaderboard of the users between the contests contestId1 to contestId2 (both inclusive)
 - LeaderBoardInRange 4 10
 - "Chandler" : 430
 - "Ross" : 400
 - "Monica" : 350
 - "Joey" : 200

SAMPLE COMMANDS

CreateUser joey

CreateUser monica

CreateUser chandler

CreateUser ross

CreateUser rachel

CreateUser phoebe

CreateContest 4 5 15 35 45

AttendContest 1 joey monica ross

Leaderboard

CreateContest 5 10 15 20 25 30

AttendContest 2 ross joey rachel

LeaderBoardInRange 1 2

ContestHistory 1

ContestHistory 2

Leaderboard

NOTES

1. Code should be demo-able
2. Code should be modular
3. Input can be taken from *command line* or *file* or in a driver class
4. You are expected to find and handle all corner cases and data validations
5. All data should be stored in memory. Do not use files/databases etc for storage.
6. Attempt the bonus feature only after everything else is working properly