

# Bulls and Cows

## RULES:

- 4-digit number is generated where every digit is different.
- User guesses a number and is told the exact and partial digit matches.
- Exact match
  - When the user guesses the correct digit in the correct position.
- Partial match
  - When the user guesses the correct digit but in the wrong position.
- Once the number is guessed
  - Exact matches for all digits
  - The user wins the game.

## REQUIREMENTS:

- Spring Boot REST application using JDBC Template to access the database.
- A Game should have:
  - Answer
    - 4-digit number with no duplicate digits.
  - Status
    - In progress
      - users should not be able to see the answer.
    - Finished
- Each Round data
  - A guess,
  - The time of the guess,
  - The result of the guess in the format "e:0:p:0"
    - "e": exact matches
    - "p": partial matches.
- REST endpoints:
  - "begin"
    - POST
    - Starts a game,
    - Generates an answer,
    - Sets the correct status.
    - Return a 201 CREATED message and the created gameId.
  - "guess"
    - POST
    - Makes a guess by passing the guess and gameId in as JSON.
    - Calculate the results of the guess
    - Mark the game finished if the guess is correct.
    - Returns the Round object with the results filled in.

- "game"
  - GET
  - Returns a list of all games.
  - in-progress games do not display their answer.
- "game/{gameId}"
  - GET
  - Returns a specific game based on ID.
  - in-progress games do not display their answer.
- "rounds/{gameId}"
  - GET
  - Returns a list of rounds for the specified game sorted by time.

DATABASE:

