Java Engineer

General instructions

Please send your solution within 3 days.

The exercise specifies the requirements only on a high level. Please make sensible assumptions for filling in the missing parts.

Assignment 1: Create a Spring Boot application

Create a REST endpoint to execute a dice distribution simulation:

1. Roll 3 pieces of 6-sided dice a total of 100 times.
    a. For every roll sum the rolled number from the dice (the result will be between 3 and 18).
    b. Count how many times each total has been rolled.
    c. Return this as a JSON structure.
2. Make the number of dice, the sides of the dice and the total number of rolls configurable through query parameters.
3. Add input validation:
    a. The number of dice and the total number of rolls must be at least 1.
    b. The sides of a dice must be at least 4.

Assignment 2: Store the result of the simulation from Assignment 1 in a database

Create a REST endpoint that can query the stored data:

1. Return the total number of simulations and total rolls made, grouped by all existing dice number–dice side combinations.
    a. Eg. if there were two calls to the REST endpoint for 3 pieces of 6 sided dice, once with a total number of rolls of 100 and once with a total number of rolls of 200, then there were a total of 2 simulations, with a total of 300 rolls for this combination.
2. For a given dice number–dice side combination, return the relative distribution, compared to the total rolls, for all the simulations.
    a. In case of a total of 300 rolls, if the sum „3” was rolled 4 times, that would be 1.33%.
    b. If the sum „4” was rolled 3 times, that would be 1%.
    c. If the total „5” was rolled 11 times, that would be 3.66%. Etc...

Acceptance criteria

1. Public Git repository with the source code
2. Please commit your code in sensible blocks
3. Readme.md in the repository which describes the solution and the important decisions that has been made