

Exam: 2017.05.22.

You should develop an application based on microservice architecture. The services of this application come from the world of anagrams.

Create 4 spring boot applications with the following names

1. registration-service (port: 1111)
2. account-service (port: 2222)
3. anagram-service (port: 3333)
4. anagram-client (port: 4444)

The registration-service application is a Eureka service registry. You should register all other applications into this service registry and access applications through this registry not directly through a given host and port.

The account-service gives security services to the anagram-client application. It is connected to the PostgreSQL database named “accountdb” that contains credentials. Connecting to this microservice needs basic http security with the following pre-shared credential: the username is “accountuser” and the password is the md5 hash of “password”. The account-service provides the following rest services to the anagram-client: registering a new account and finding an account based on login name. Provide tests to database functionalities (add, find) mockmvc tests to rest endpoints.

The anagram-service provides rest services to the anagram-client application. This microservice needs basic http security with pre-shared credential where the username and password are checked with the help of account-service. You should use Feign client when you connect to the account- service. The dictionary.txt file contains English words. You should implement the following statistics and functionalities.

1. Frequency of word length
2. Length of the longest word
3. Length of the shortest word
4. Average length of the words in dictionary
5. Anagrams of a given word found in the dictionary database

Provide the above functionalities as rest services. Give mockmvc tests to the above functions.

The anagram-client application provides the rest interface to the anagram services. Only registered users can connect to the application. You should give registration functionality. The entered registration information should be saved into the accountdb database using the account-service and the authentication is also based on this registration data. The anagram-client does not have database connection. You should use Feign client when you connect to the anagram-service. Please create 6 integration tests without mocks: 1 to account-service and 5 to anagram-service.

The application should create the database schemas as needed. The pre- created PostgreSQL database should only be supposed with the following database user and password: „spring” and „spring”.