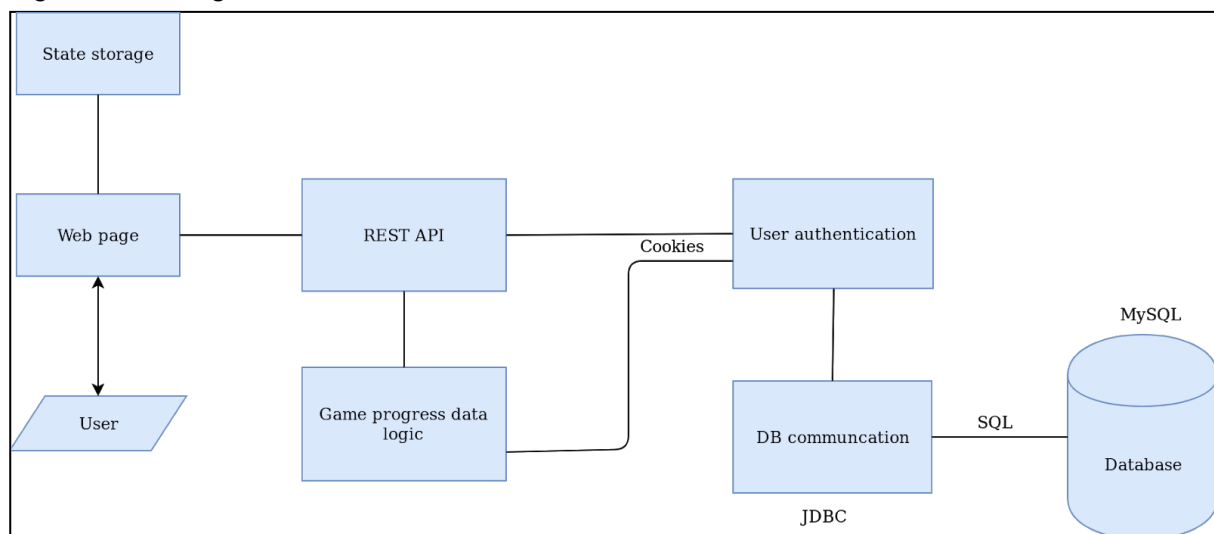


## Online Questions Game - Think-a-bit

### Requirements:

1. An online game with randomized questions
2. Sign in / Sign up
3. Difficulty setting
4. Each level / stage has 10 consecutive questions
5. After all the questions are answered correctly, the next stage unlocks
6. Question type:
  - a. Closed with one correct answer
  - b. Closed with more than one correct answer
  - c. Open with a numerical answer
7. Each consecutive stage has increasing difficulty - less tries for answering the questions
8. User can replay a stage after a certain amount of time
9. Each stage has a certain amount of tries for answering the questions - the higher the difficulty, the less tries
10. If a user has run out of tries for a stage, he can “buy” more tries

### High Level Design:



The system contains 3 components in a Java application communicating with the web browser via REST calls and with the database via JDBC driver. These components are:

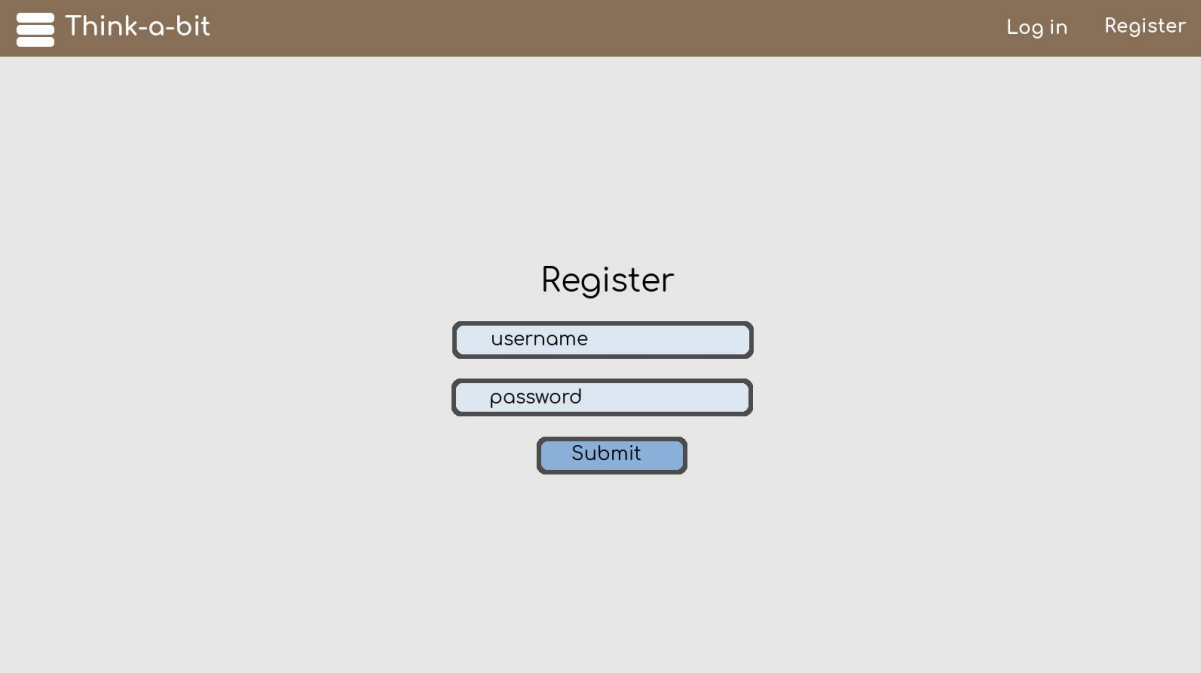
- **User authentication** - The logic that with register, log in and log out a user. Communicates with the browser with Jersey REST Api. Has internal communication with the DB Communication Component for inserting and getting the user information.
- **DB Communication** - The logic that makes the SQL queries and sends them to the MySQL DB. JDBC functionality here. Communicates with the Database via SQL.

- Game progress data - The logic that manages the arrangement of the questions, the question type, the locking and unlocking of the stages, the tries for each stage and the difficulty settings. Communicates with the web browser with Jersey REST api and transfers information to the User module via Cookies.

The web page is built using React framework. In accordance with user actions, requests are being sent to server in order to get or update user's data. A state, needed for proper page rendering, is kept on the front end.

The user will see a web based interface as follows:

### 1. Register



The screenshot shows a web interface for the 'Think-a-bit' application. At the top, there is a dark brown header bar. On the left side of the header is a hamburger menu icon followed by the text 'Think-a-bit'. On the right side of the header are two links: 'Log in' and 'Register'. The main content area has a light gray background. In the center, the word 'Register' is displayed in a large, black, sans-serif font. Below this title are two input fields: the first is labeled 'username' and the second is labeled 'password'. Both fields have a light blue background and a thin black border. Below the password field is a blue button with the text 'Submit' in white.

### 2. Log in

☰ Think-a-bit

Log inRegister

Log in

username

password

Submit

### 3. Select category

☰ Think-a-bit

user1, 1022 p.

Select a category

All

Biology

Geography

Programming

History

Music

Politics

### 4. Category stages

Think-a-bit

user1, 1022 p.

user1

Account settings

Log out

Play a game

Politics

History

Geography

Music

Biology

Programming

All

Geography

Level 1

solved 4 times

Level 2

solved 2 times

Level 3

solved 0 times

## 5. Question

Think-a-bit

user1, 1022 p.

user1

Account settings

Log out

Play a game

Politics

History

Geography

Music

Biology

Programming

All

Geography

<- Previous

finish

Next ->

What is the length of the Equator?

Question 2/10

A) 40075 km

B) 20014 km

C) 10722 km

D) The Earth is flat

## 6. Stage result

≡ Think-a-bit

user1, 1022 p.

user1

Account settings

Log out

Play a game

Politics

History

Geography

Music

Biology

Programming

All

Result: Failed

Questions you got wrong:

What is the length of the Equator?

What is the capital of Turkey?

4 attempts left