Documentation of methods and files written for QuizBank Module & Database

Modifications made in the QuizItem class:

1. **constructor(question, answer, options):** Initializes a new QuizItem object with a question, answer, and options. Removed quizItemId as it will be fetched from db and will be auto-incremented.
2. **storeQuizItem(quizName) -** this method stores the quiz item in the specified quizName collection in the Firebase database. Updated this method to fetch all the available IDs first, and then it will find the max id and auto-increment it to store the new quizItem in the database.
3. **async update(quizName, quizItemId, updatedFields)** - The update method is an asynchronous method that allows you to update a specific quiz item within a quiz collection in the database. It takes three parameters as input:
   a. quizName: The name of the quiz collection where the quiz item resides.
   b. quizItemId: The ID of the quiz item you want to update.
   c. updatedFields: An object containing the updated fields and their new values, e.g., { question: "New question", answer: "New answer" }.
   The method first tries to retrieve the document reference for the specified quiz item using the quizName and quizItemId. If the document exists, it updates the specified fields with the new values provided in the updatedFields object. If the update is successful, the method returns a promise that resolves to true. Otherwise, it returns a promise that resolves to false.
   If there is an error during the update process, the method logs the error message and returns a promise that resolves it to false.

Modifications made in the QuizBank Tests:

1. Have updated almost all the tests, as quizItemID was a manual entry, and now it is fetched by the storeQuizItem method while adding a new quizItem in DB.

Modifications made in the QuizItem class:

1. **async correct(quizName, quizItemId, answer) -** modified correct method to be asynchronous, checking if the answer is correct for the given quizName and quizItemId. It returns true if the answer is correct and false otherwise. This is because fetching the quiz item from the database is an asynchronous operation.
2. **storeQuizItem(quizName) -** this method stores the quiz item in the specified quizName collection in the Firebase database.
3. **async getQuizItemById(quizName, quizItemId) -** modified correct method to be asynchronous, that retrieves a specific quiz item from the specified quizName collection in the Firebase database by quizItemId.
4. **deleteQuizItem(quizName, quizItemId) -** The deleteQuizItem method is modified in the QuizItem class. This method deletes a quiz item by id from the collection of that Quiz.

Modifications made in the Quiz class:

1. **createNewQuiz(quizName) -** Added a new method to create a new Quiz and a new collection with the quiz name in Firestore. Returns a Promise that resolves with the ID of the new quiz collection or null if an error occurs.
2. **fetchAllQuizNames() -** Added a new method that fetches all the Quiz names from the Firestore "Quizzes" collection and stores them in an array. Returns a Promise that resolves with an array of Quiz names or null if an error occurs.
3. **fetchAllQuizItems(quizName) -** modified a method to fetch all quiz items from the QuizName's collection in a database. Returns a Promise that resolves to an array of quiz items or null if there was an error. Throws an Error if there is an error fetching the quiz items.
4. **deleteQuiz(quizName: string) -** Added a new method that deletes a quiz collection from Firestore by its name. Returns a Promise that resolves to true if the collection was deleted successfully or false otherwise.
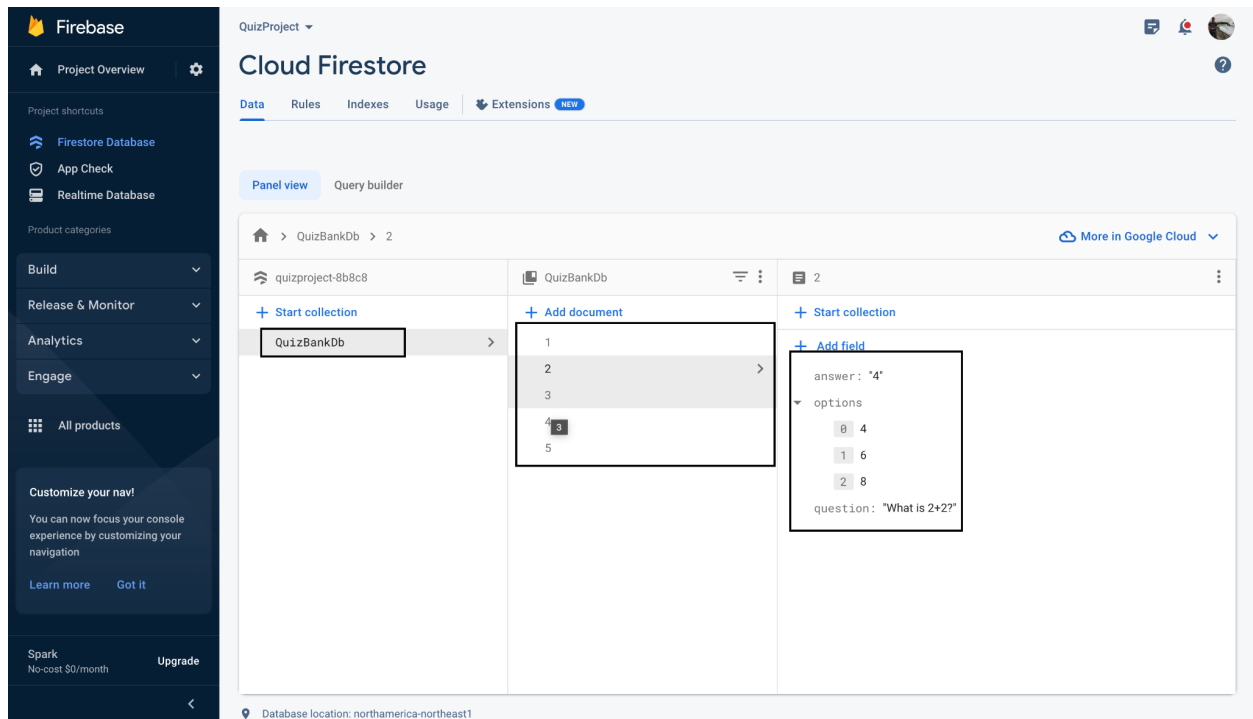
Database:
/api/config.js:
This file contains the SDK to firebase.
We have created one DB named "QuizBankDB" and stored QuizItems inside that DB.
DB:

QuizBank.mjs:
Class QuizItem:

`storeQuizItem()`

You can create a constructor object of the class QuizItem and assign values.
It has fields like id, answer, question, and options.

`getQuizItemById(id)`

To call this method, you must pass the id of a quizitem, which will return the object of quizItem.
And you can access it as belows: quizitem.id, quizitem.answer, quizitem.options, quizitem.question.

`delete(id)`

To call this method, you have to pass the id of a quizitem, and it will delete that quizItem from the DB.

correct(id, answer)

This method is used to check whether the answer given by the user is correct or not. You can pass the quiz_id and answer given by the user as a parameter to this method. After checking the answer printing output in the console:

```
(base) → project-eteam git:(sukrut_branch) ✗ node modules/quizbank.mjs
Correct Answer!!!
(base) → project-eteam git:(sukrut_branch) ✗ []
                                    Ln 190, Col 3   Spaces: 4   UTF-8   LF   {} JavaScript
```

Class Quiz:

fetchAllIds()

This method fetches all the quizId's present in the Db. This method returns the array of all quizItemIds.

fetchAllQuizItems()

This method will call the fetchAllIds() method to get all the IDs and fetches all the quizItems in the database stores them into an array, and return that array. Below is the console output:

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

Insdide fetchAllIds: object                                                    >_ zsh
fetchAllIds tostring: object                                                   >_ zsh
Inside fetchAllQuizItems: 1,2,3,4,5
Inside forloop: 1|What is the name of province we are in?|Newfoundland|
Inside forloop: 2|What is 2+2?|0|4,6,8
Inside forloop: 3|what is 10+6|2|12,14,16,20
Inside forloop: 4|Select the correct name of university?|1|Memoriel,Memorial,MUM,Mamoriel
Inside forloop: 5|which is the national dish of Canada?|1|Poutine,Shwarma,Fried Rice,Burger
Forloop exit[object Object],[object Object],[object Object],[object Object],[object Object]
1
What is the name of province we are in?
Newfoundland
[]
2
What is 2+2?
0
[ 4, 6, 8 ]
3
what is 10+6
2
[ '12', '14', '16', '20' ]
4
Select the correct name of university?
1
[ 'Memoriel', 'Memorial', 'MUM', 'Mamoriel' ]
5
which is the national dish of Canada?
1
[ 'Poutine', 'Shwarma', 'Fried Rice', 'Burger' ]
(base) → project-eteam git:(sukrut_branch) ✗ node modules/quizbank.mjs
Insdide fetchAllIds: object
```

I've mentioned all the calls made to the method in the comments at the end of the QuizBank.mjs file. In the next iteration of the assignment will write test cases for these.

```
177            console.log(item.id);
178            console.log(item.question);
179            console.log(item.answer);
180            console.log(item.options);
181        });
182        return quizItems;
183    } catch (error) {
184        console.error("Error fetching quiz items:", error);
185    }
186    }
187
188 }
189
190 //var quizItem = new QuizItem("3", "what is 10+6", "2",["12","14","16","20"]);
191 //quizItem.storeQuizItem();
192 // quizItem.delete("3");
193 //quizItem.fetchAllQuizItems();
194 //quizItem.fetchAllIds();
195 //quizItem.getQuizItemById("4");
196 //quizItem.fetchAllQuizItems();
197 //quizItem.correct("2", "4");
198 //const quiz = new Quiz();
199 //quiz.fetchAllIds();
200 //quiz.fetchAllQuizItems();
201
202
203 export { Quiz, QuizItem };
204
```

Structural Diagram of Webapp: