API Specification: Quiz Application

1. **POST** /register

   - **Description:** Register a new user
   - **Headers:** None
   - **Parameters:** None
   - **Request Body:**

Field	Type	Description	Example	Required
name	string	User's name	"John Wick"	Yes
email	string	User's email address	"john@example.com"	Yes
username	string	User's username	"john_wick"	Yes
password	string	User's password	"secretpassword"	Yes

   Example:
   ```
   {
       "name": "John Wick",
       "email": "john@example.com",
       "username": "john_wick",
       "password ": "secretpassword",
   }
   ```

   - **Response:**
     - **Success:**
       - Status Code: 201 Created
       - Body: A success message

         Example:
         ```
         {
             "msg": "Successfully registered"
         }
         ```

     - **Error:**
       - Status Code: 400 Bad Request, 409 Conflict, 500 Internal Server Error
       - Body: (Error message)

2. **POST** /login

- **Description:** Login an existing user
- **Headers:** None
- **Parameters:** None
- **Request Body:**

Field	Type	Description	Example	Required
username	string	User's username	"john_doe"	Yes
password	string	User's password	"secretpassword"	Yes

Example:
```
{
    "username": "john_wick",
    "password ": "secretpassword",
}
```

- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: An access-token

    Example:
    ```
    {
        "access_token": "<access-token>"
    }
    ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 500 Internal Server Error
    - Body: (Error message

3. **POST** /logout

- **Description:** Logout a logged in user
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:** None
- **Request Body:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: A success message

      Example:
      ```
      {
          "msg": "Successfully logged out"
      }
      ```

  - **Error:**
    - Status Code: 500 Internal Server Error
    - Body: (Error message)

4. **GET** /admins

- **Description:** Get all admin details
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: Response containing a list of admin details

      Example:
      ```
      [
          {
              "user_id": "A3cTnU",
              "name": "Mathew Murdock",
              "email": "matty@gmail.com",
              "registration_date": 2024-01-15
          },
          {
              "user_id": "A4zqNx",
              "name": "Wilson Fisk",
              "email": "fisk@gmail.com",
              "registration_date": 2023-04-01
          }
      ]
      ```

- **Error:**
  - Status Code: 401 Unauthorized, 404 Not Found, 500 Internal Server Error
  - Body: (Error message)

5. **POST** /admins

   - **Description:** Create a new admin account
   - **Headers:**
     - Authorization: **<Bearer token>** (required)
   - **Request Body:**

Field	Type	Description	Example	Required
name	string	Admin's name	"Mathew Murdock"	Yes
email	string	Admin's email address	"matty@example.com"	Yes
username	string	Admin's username	"matty"	Yes

   Example:
   ```
   {
       "name": "Mathew Murdock",
       "email": "matty@example.com",
       "username": "matty"
   }
   ```

   - **Response:**
     - **Success:**
       - Status Code: 201 Created
       - Body: A success message

       Example:
       ```
       {
           "msg": "Admin created successfully"
       }
       ```

     - **Error:**
       - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 409 Conflict, 500 Internal Server Error
       - Body: (Error message)

6. **DELETE** /admins/{admin_id}

- **Description:** Delete an existing admin
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - admin_id: string (Path parameter, ID of the admin to delete)
- **Request Body:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: A success message

    Example:
    ```
    {
        "msg": "Admin deleted successfully"
    }
    ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 500 Internal Server Error
    - Body: (Error message)

7. **GET** /players

- **Description:** Get all player details
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: (Response containing a list of player details)

    Example:
    ```
    [
        {
            "user_id": "P3cTnU",
            "name": "John Wick",
            "email": "john@gmail.com",
            "registration_date": 2024-01-15
        },
        {
            "user_id": "P4zqNx",
            "name": "Charlie Cox",
            "email": "charlie@gmail.com",
            "registration_date": 2024-01-01
        }
    ]
    ```

- **Error:**
  - Status Code: 401 Unauthorized, 404 Not Found, 500 Internal Server Error
  - Body: (Error message)

8. **DELETE** /players/{player_id}

- **Description:** Delete an existing player
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - player_id: string (Path parameter, ID of the player to delete)
- **Request Body:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: A success message

      Example:
      ```
      {
          "msg": "Player deleted successfully"
      }
      ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 500 Internal Server Error
    - Body: (Error message)

9. **GET** /categories

- **Description:** Get all categories details
- **Headers:**
    - Authorization: **<Bearer token>** (required)
- **Parameters:** None
- **Response:**
    - **Success:**
        - Status Code: 200 OK
        - Body: (Response containing a list of categories)

        Example:
        ```
        [
            {
                "category_id": "C3cTnU",
                "admin_id": "A3qZnR",
                "admin_username": "matty",
                "category_name ": "REST API"
            },
            {
                "category_id": "A4zqNx",
                "admin_id": "A4zqNx",
                "admin_username": "fisk",
                "category_name": "Python"
            }
        ]
        ```

    - **Error:**
        - Status Code: 404 Not Found, 500 Internal Server Error
        - Body: (Error message)

10. **POST** /categories

- **Description:** Create a new category
- **Headers:**
    - Authorization: **<Bearer token>** (required)
- **Request Body:**

Field	Type	Description	Example	Required
category_name	string	Category name	"Science"	Yes

Example:
```
{
    "category_name": "Science"
}
```

- **Response:**
  - **Success:**
    - Status Code: 201 Created
    - Body: A success message

      Example:
      ```
      {
          "msg": "Category created successfully"
      }
      ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 409 Conflict, 500 Internal Server Error
    - Body: (Error message)

11. **PUT** /categories/{category_id}

- **Description:** Update an existing category
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - category_id: string (Path parameter, ID of the category to update)
- **Request Body:**

Field	Type	Description	Example	Required
updated_category_name	string	Updated category name	"Mathematics"	Yes

  Example:
  ```
  {
      "updated_category_name": "Mathematics"
  }
  ```

- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: Response containing the updated category details

      Example:
      ```
      {
          "msg": "Category Science updated to Mathematics"
      }
      ```
  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 500 Internal Server Error
    - Body: (Error message)

12. **DELETE** /categories/{category_id}

- **Description:** Delete an existing category
- **Headers:**
    - Authorization: **<Bearer token>** (required)
- **Parameters:**
    - category_id: string (Path parameter, ID of the category to delete)
- **Response:**
    - **Success:**
        - Status Code: 200 OK
        - Body: A success message
        - **Example:**
        ```
        {
            "msg": "Category deleted successfully"
        }
        ```
    - **Error:**
        - Status Code: 404 Not Found, 500 Internal Server Error
        - Body: (Error message)

13. **POST** /categories/{category_id}/questions

- **Description:** Create a question in a specified category
- **Headers:**
    - Authorization: **<Bearer token>** (required)
- **Parameters:**
    - category_id: string (Path parameter, ID of the category to add a question)
- **Request Body:**

Field	Type	Description	Example	Required
question	String	New question text	"What is the capital of France?"	Yes
type	String	MCQ, One Word, t/f	"mcq"	Yes
answer	String	Correct answer	"Paris"	Yes
other_options	Array[String]	List of wrong options	["x", "y", "z"]	Yes

Example:
```
{
    "question": "What is the capital of France?",
    "type": "MCQ",
    "answer": "Paris",
    "other_options": ["Marseille", "Lyon", "Bordeaux"]
}
```

- **Response:**
  - **Success:**
    - Status Code: 201 Created
    - Body: A success message

    Example:
    ```
    {
        "msg": "Question created successfully"
    }
    ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 409 Conflict, 500 Internal Server Error
    - Body: (Error message)

14. **GET** /categories/questions?category_id={category_id}

- **Description:** Get all questions in a specified category if query parameter specified else all questions across all categories
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - category_id: string (Query parameter, ID of the category to retrieve questions for)
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: (Response containing a list of questions for the specified category or list of questions across all categories)

  Example:

  ```
  {
    "quiz_data": [
      {
        "category_id": "C3cTnU",
        "category": "Science",
        "question_data": [
          {
            "question_id": "Qe4ZTL",
            "question_text": "Chemical symbol of water is?",
            "question_type": "ONE WORD",
            "options": {
              "answer": {
                "option_id": "Oe4ZTL",
                "text": "H2O"
              },
              "other_options": []
            }
          }
  ```

```
          ]
        },
        {
          "category_id": "C0cQnZ",
          "category": "Maths",
          "question_data": [
            {
              "question_id": "Qe4ZTL",
              "question_text": "Sum of angles of a triangle is?",
              "question_type": "ONE WORD",
              "options": {
                "answer": {
                  "option_id": "Oe4CTL",
                  "text": "180"
                },
                "other_options": []
              }
            },



            {
              "question_id": "Qe4ZTL",
              "question_text": "Which gas causes greenhouse effect?",
              "question_type": "MCQ",
              "options": {
                "answer": {
                  "option_id": "Oe4ZTL",
                  "text": "Carbon Dioxide"
                },
                "other_options": [
                  {
                    "option_id": "Ox43TL",
                    "text": "Oxygen",
                  },
                  {
                    "option_id": "Op0ZTL",
                    "text": "Nitrogen",
                  },
                  {
                    "option_id": "Oq1ZAL",
                    "text": "Methane",
                  }
                ]
              }
            }
          ]
        }
      ]
    }
```

- **Error:**
  - Status Code: 404 Not Found, 500 Internal Server Error
  - Body: (Error message)

15. **POST** /categories/questions

- **Description:** Post quiz data including questions, categories, and options
- **Headers:**
    - Authorization: **<Bearer token>** (required)
- **Request Body:**

Field	Type	Description	Example	Required
quiz_data	Array	An array of objects containing quiz data.	See example	Yes
category	String	The category of the quiz	"Science"	Yes
question_data	Array	An array of objects containing question data within a category.	See example	Yes
question_text	String	The text of the quiz question.	"What is the chemical symbol for water?"	Yes
question_type	String	The type of the question (e.g., "one word", "t/f", "mcq").	"one word"	Yes
options	Object	An object containing options for the question.	See example	Yes
answer	String	The correct answer to the question.	"H2O"	Yes
other_options	Array	An array containing other options for the question (for multiple-choice questions).	["Oxygen", "Nitrogen", "Methane"]	No

Example:

```
{
  "quiz_data": [
    {
      "category": "Science",
      "question_data": [
        {
          "question_text": "What is the chemical symbol for water?",
          "question_type": "one word",
          "options": {
            "answer": "H2O",
            "other_options": []
          }
        },
        {
          "question_text": "What is the chemical symbol for water?",
          "question_type": "t/f",
          "options": {
            "answer": "False",
            "other_options": []
```

```json
        }
      }
    ]
  },
  {
    "category": "Maths",
    "question_data": [
      {
        "question_text": "What is the chemical symbol for water?",
        "question_type": "one word",
        "options": {
          "answer": "H2O",
          "other_options": []
        }
      },
      {
        "question_text": "Which gas is responsible for the Earth's
greenhouse effect?",
        "question_type": "mcq",
        "options": {
          "answer": "Carbon dioxide",
          "other_options": ["Oxygen", "Nitrogen", "Methane"]
        }
      }
    ]
  }
 ]
}
```

- **Response:**
  - **Success:**
    - Status Code: 201 Created
    - Body: A success message

      Example:
      ```json
      {
          "msg": "Questions added successfully"
      }
      ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 403 Forbidden, 409 Conflict, 500 Internal Server Error
    - Body: (Error message)

16. **GET** /quizzes?category_id={category_id}

- **Description:** Get random questions for quiz in a specified category if query parameter specified else across all categories
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - category_id: string (Query parameter, ID of the category for the quiz)
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: (Response containing question details for the specified category or random questions)

    Example:
    ```
    [
        {
            "question_id": "Q3cTnU",
            "question_text": "Chemical formula for water is?",
            "question_type": "ONE WORD",
            "options": {
              "answer": "H2O",
              "other_options": []
            }
        },
        {
            "question_id": "Q3cTnU",
            "question_text": "Which gas causes greenhouse effect?",
            "question_type": "MCQ",
            "options": {
              "answer": "Carbon dioxide",
              "other_options": ["Oxygen", "Nitrogen", "Methane"]
            }
        }
    ]
    ```

  - **Error:**
    - Status Code: 401 Unauthorized, 500 Internal Server Error
    - Body: (Error message)

17. **POST** /quizzes/answers

- **Description:** Post player responses to the questions
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Request Body:**

Field	Type	Description	Example	Required
question_id	string	ID of the question	"QdeSe3"	Yes
user_answer	string	user's response	"Paris"	Yes

Example:
```
[
    {
        "question_id": "Q3cTnU",
        "user_answer": "H2O",
    },
    {
        "question_id": "Q4xZnP",
        "user_answer": "Carbon dioxide"
    }
]
```

- **Response:**
  - **Success:**
    - Status Code: 201 Created
    - Body: Player's score

    Example:
    ```
    {
        "score ": "90"
    }
    ```

  - **Error:**
    - Status Code: 400 Bad Request, 401 Unauthorized, 500 Internal Server Error
    - Body: (Error message)

18. **GET** /leaderboard

- **Description:** Get leaderboard details
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:** None
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: (Response containing leaderboard details)

    Example:
    ```
    [
        {
            "score_id": "S3cTnU",
            "player_id": "P3qZnR",
            "username": "john_wick",
            "max_score ": "90",
            "min_timestamp ": "2024-01-15 18:12:20"
        },
        {
            "score_id": "S3cTnU",
            "player_id": "P3qZnR",
            "username": "charlie_cox ",
            "max_score ": "80",
            "min_timestamp ": "2024-01-15 18:12:20"
        },
    ]
    ```

  - **Error:**
    - Status Code: 404 Not Found, 500 Internal Server Error
    - Body: (Error message)

19. **GET** /player/{player_id}/score

- **Description:** Get player's past scores
- **Headers:**
  - Authorization: **<Bearer token>** (required)
- **Parameters:**
  - player_id: string (Path parameter, ID of the player to retrieve the score)
- **Response:**
  - **Success:**
    - Status Code: 200 OK
    - Body: (Response containing the player's score details)

      Example:
      ```
      [
          {
              "score_id": "S3cTnU",
              "score ": "90",
              "timestamp ": "2024-01-15 18:12:20"
          },
          {
              "score_id": "S3cTnU",
              "score ": "80",
              "timestamp ": "2024-01-14 17:12:20"
          }
      ]
      ```

  - **Error:**
    - Status Code: 401 Unauthorized, 404 Not Found, 500 Internal Server Error
    - Body: (Error message)

Status Codes:

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
409	Conflict
500	Internal Server Error