Random Image API Documentation

Project Title: Random Image API

Description

The Random Image API is a simple RESTful API built using Node.js and Express.js that serves random images from the Picsum Photos API. This project provides hands-on experience in backend development, API design, and server management.

Technologies Used

* **Node.js**: A JavaScript runtime for building server-side applications.
* **Express.js**: A web application framework for Node.js that simplifies the creation of server applications.
* **Axios**: A promise-based HTTP client for the browser and Node.js, used to make requests to external APIs.

Project Structure

text

random-image-api/

│

├── node\_modules/ # Directory containing installed npm packages

├── package.json # Project metadata and dependencies

├── package-lock.json # Lock file for installed packages

└── index.js # Main application file

Setup Instructions

1. **Clone the Repository**:
   * If you have the project in a Git repository, clone it using:

bash

git clone <repository-url>

cd random-image-api

1. **Install Dependencies**:
   * Run the following command to install the required packages:

bash

npm install

1. **Start the Server**:
   * Execute the following command to start the server:

bash

node index.js

* + The server will be running at http://localhost:3000.

API Endpoint

* **GET**/api/image/random:
  + **Description**: Fetches a random image from the Picsum Photos API.
  + **Response**: Returns a JSON object containing the URL of the random image.
  + **Example Response**:

json

{

"imageUrl": "https://picsum.photos/id/237/200/300"

}

Code Explanation

* **index.js**: This file contains the main application logic.
  + **Imports**:
    - express: Used to create the server and define routes.
    - axios: Used to make HTTP requests to fetch random images.
  + **Express App Initialization**: An instance of an Express application is created to handle incoming requests.
  + **Route Definition**: The /api/image/random route is defined to handle GET requests.
    - An asynchronous function fetches a random image from the Picsum API using Axios.
    - The image URL is extracted from the response and sent back to the client in JSON format.
  + **Error Handling**: If an error occurs during the image fetch, a 500 status code is returned with an error message.
  + **Server Listening**: The server listens on a specified port and logs a message to the console.

Challenges Encountered

* **Error Handling**: Managing errors when fetching images from the external API was a challenge. Proper error handling was implemented to ensure that the API responds gracefully in case of failures.
* **Understanding Asynchronous Code**: Working with asynchronous functions and promises was initially confusing. However, using async/await helped simplify the code and improve readability.
* **Testing the API**: Ensuring that the API endpoints function correctly required thorough testing using Postman. Learning to use Postman effectively was beneficial for validating the API responses.

Conclusion

This project provided valuable experience in building a RESTful API using Node.js and Express.js. It enhanced my understanding of backend development concepts, API design, and error handling. The ability to fetch and serve random images demonstrates the practical application of these technologies.

Submission Instructions

* Ensure that your code is complete and functioning as expected.
* Include this documentation file in your project directory.
* Submit the entire project folder (including node\_modules, package.json, index.js, and this documentation) as a zip file or via your preferred submission method.

Feel free to customize any sections to better fit your project or personal experiences. This documentation should provide a clear overview of your Random Image API project and make it easy for others to understand your work.