**Metadata API Documentation: Fractional Real Estate Platform**

**Purpose**

This backend service provides metadata for fractional real estate properties. It allows the system to display updated information such as property name, price per share, and ETH yield rate. The data can be accessed by the frontend, the smart contract, or third-party platforms like OpenSea.

This API simulates real-time yield changes and returns JSON data formatted for NFT-compatible platforms.

**Technology Stack**

* **Backend Framework:** Node.js with Express
* **Scheduling:** node-cron (to simulate yield updates)
* **CORS Support:** Enabled for browser access

**Server Details**

* **Port:** 3000 (default)
* **Start Command:** node index.js
* **Root URL:** http://localhost:3000/

**Endpoints**

**GET /property/:id/metadata**

Returns metadata for a specific property based on its ID.

**Example**

http://localhost:3000/property/101/metadata

**Sample Output**

{

"name": "Palm Beach Villa",

"description": "Fractional ownership of Palm Beach Villa. Earn real ETH yield.",

"image": "https://yourcdn.com/images/palm-villa.png",

"attributes": [

{ "trait\_type": "Property ID", "value": 101 },

{ "trait\_type": "Price Per Share (ETH)", "value": 0.05 },

{ "trait\_type": "Yield Rate (ETH/day/share)", "value": 0.0001 },

{ "display\_type": "date", "trait\_type": "Last Updated", "value": 1720812345 }

]

}

**Property Simulation**

The server starts with two sample properties:

* **Property 101**
  + Name: Palm Beach Villa
  + Price per Share: 0.05 ETH
  + Initial Yield Rate: 0.0001 ETH/day/share
* **Property 102**
  + Name: Downtown Loft
  + Price per Share: 0.08 ETH
  + Initial Yield Rate: 0.00015 ETH/day/share

These values are stored in-memory and reset when the server restarts.

**Yield Rate Updates**

A scheduled background task automatically updates each property’s yield rate every 12 hours. The yield rate is adjusted slightly to simulate changing market conditions.

This uses the node-cron module and runs without manual input.

**Root Route**

**GET /**

This returns a plain text confirmation message:

Fractional Real Estate Metadata API is running.

Useful for confirming the server is live.

**Local Setup Instructions**

1. Create a new folder for the backend code.
2. Run npm init -y to create a package.json file.
3. Install required packages:
4. npm install express cors node-cron
5. Create a file named index.js and paste the backend code.
6. Run the server with:
7. node index.js
8. Open your browser at:
9. http://localhost:3000/property/101/metadata

**Summary**

This backend service allows the fractional real estate platform to support dynamic NFT metadata. It provides:

* Property-specific JSON metadata
* Real-time simulation of ETH yield
* Simple and readable API structure
* Compatibility with smart contracts and external platforms