EXPRESS LAB 1: CART API - ARRAY

Task: Use Express to create an API server that provides a RESTful API for a collection of cart items. You can test your API using https://gc-express-tester.surge.sh.

Build Specifications:

- 1. Use Express to create your server.
- 2. Require the module that will contain the routes you have created.
- 3. Start your server out with a hard-coded array of cart items, each including id, product, price, and quantity.
- 4. Test your endpoints using Postman.
- 5. Also test your finished API using https://gc-express-tester.surge.sh. To do so, you must enable CORS support using the node **cors** package.

Endpoints:

The API should have the following endpoints.

- 1. GET /cart-items
 - a. Action: None
 - b. Response: a JSON array of all cart items
 - c. Response Code: 200 (OK)
 - d. Query string parameters: the request may have one of the following or it may have none. (See tests below for examples.)
 - i. **maxPrice** if specified, only include products that are at or below this price.
 - ii. **prefix** if specified, only includes products that start with the given string in the response array.
 - iii. **pageSize** if specified, only includes up to the given number of items in the response array. For example, if there are ten items total, but pageSize=5, only return an array of the first five items.
- 2. GET /cart-items/:id
 - a. Action: None
 - b. Response: a JSON object of the item with the given ID
 - c. Response Code: 200 (OK)
 - d. However, if the item with that ID cannot be found in the array, return a string response "ID Not Found" with response code **404** (Not Found)
- 3. **POST /cart-items**
 - a. Action: Add a cart item to the array using the JSON body of the request. Also generate a unique ID for that item.
 - b. Response: the added cart item object as ISON.
 - c. Response Code: **201** (Created)

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4. PUT /cart-items/:id

- a. Action: Update the cart item in the array that has the given id. Use the JSON body of the request as the new properties.
- b. Response: the updated cart item object as JSON.
- c. Response Code: 200 (OK).

5. DELETE /cart-items/:id

- a. Action: Remove the item from the array that has the given ID.
- b. Response: Empty
- c. Response Code: **204** (No Content)

Extended Challenges:

- 1. In the above instructions, GET /cart-items takes any one of the query string parameters: maxPrice, prefix, or pageSize. Make it also allow any combination of those. e.g.
 - /cart-items?prefix=A&maxPrice=20.0&pageSize=5
- 2. Build an Angular app to call your API and display results. Then use a form to add items by calling your POST endpoint. Add clicks to call your DELETE endpoint.

Tests

- 1. **GET /cart-items** responds with a JSON array of all cart items
- 2. **GET /cart-items** responds with status code **200**
- 3. **GET /cart-items?maxPrice=3.0** responds with a JSON array of only the cart items that have **price** <= 3.0
- 4. **GET /cart-items?prefix=Fancy** responds with a JSON array of only the cart items that have **product** starting with "Fancy".
- 5. **GET /cart-items?pageSize=10** responds with a JSON array of all cart items, but if there are more than ten items, the response includes only the first ten.
- 6. **GET /cart-items/:id** responds with a JSON object of the item with the given ID
- 7. **GET /cart-items/:id** responds with status code **200**
- 8. **GET /cart-items/:id** responds with status code **404** when not found
- 9. **POST /cart-items** add a cart item to the array using the JSON body of the request. Also generates a unique ID for that item.
- 10. **POST /cart-items** responds with the added cart item object as JSON and status code **201**.
- 11. PUT /cart-items/:id Updates the cart item in the array that has the given id.
- 12. **PUT /cart-items/:id** Responds with the updated cart item as JSON and status code **200**.
- 13. **DELETE** /cart-items/:id Removes the item from the array that has the given ID.
- 14. **DELETE** /cart-items/:id Responds with no content and status code **204**.

