1. **Add a new formula.**

**POST** /formulas

Adds a new formula to the collection of formulas.

**Request**

**Method**: POST

**Path**: /formulas

**Body**:

**inputs**: An array of input objects, each containing the ingredient and its quantity.

**outputs**: An array of output objects, each containing the product and its quantity.

**Example Request Body:**

A screenshot of a computer program

Description automatically generated

**Responses**

* **201 Created**: The formula has been successfully created.
* **400 Bad Request**: Invalid request body format.

1. **See the inputs and outputs of a specific formula.**

**GET** /formulas/:id

Retrieves the details of a specific formula, including its inputs and outputs in a sentence format.

**Request**

**Method**: GET

**Path**: /formulas/:id

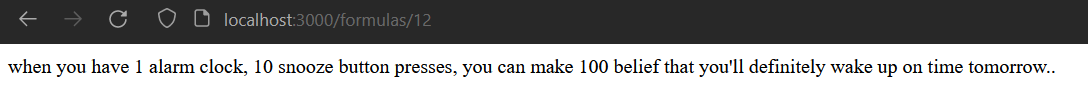
**Path Parameter**:

**id**: A non-negative integer representing the formula's unique identifier.

**Responses**

* **200 OK**: The formula details have been successfully retrieved. The response body contains a sentence describing the formula's inputs and outputs.
* **404 Not Found**: The specified formula does not exist.
* **400 Bad Request**: Invalid formula id.

**Example Response (200 OK):**



1. **List which plans contain a specific formula.**

**GET** /formulas/:id/plans

List which plans contain a specific formula.

**Request**

**Method**: GET

**Path**: /formulas/:id/plans

**Path Parameter**:

**id**: A non-negative integer representing the formula's unique identifier.

**Responses**

* **200 OK**: The plan details have been successfully retrieved. The response body contains a Json output of the plans that contains that formula
* **404 Not Found**: The specified formula does not exist.
* **400 Bad Request**: Invalid formula id.

**Example Response (200 OK):**

**A screenshot of a computer

Description automatically generated**

1. **Add a new Plan.**

**POST** /plans

Adds a new Plan

**Request**

**Method**: POST

**Path**: /plans

**Body**:

**inputs**: An array of input objects, each containing the list of formulas.

**Example Request Body:**

**A screenshot of a computer

Description automatically generated**

**Responses**

* **201 Created**: The plan has been successfully created.
* **400 Bad Request**: Invalid request body format.

1. **Append a formula to the end of a plan.**

**POST** /plans/:id/formulas

Append a formula to the end of a plan.**Request**

**Method**: POST

**Path**: /plans/:id/formulas

**Body**:

**inputs**: An array of input objects, each containing the Formulas.

**Example Request Body:**

A screenshot of a computer

Description automatically generated

**Responses**

* **201 Created**: The formula has been successfully created.
* **400 Bad Request**: Invalid request body format.
* **404 Not Found**: The specified formula does not exist.

1. **Replace formula in a plan with another.**

PUT / plans/:id/replace

Replace formula in a plan with another.

**Request**

**Method**: PUT

**Path**: /plans/:id/replace

**Body**:

**replace**: An input object, containing a Formula.

**Replace\_with**: An input object, containing a Formula.

**Example Request Body:**

**A screenshot of a computer program

Description automatically generated**

**Responses**

* **200 Created**: The formula has been successfully created.
* **400 Bad Request**: Invalid request body format.
* **404 Not Found**: The specified formula does not exist.

1. **list all formulas in a plan.**

**GET** /plans/:id/formulas

list all formulas in a plan.

**Request**

**Method**: GET

**Path**: /plans/:id/formulas

**Path Parameter**:

**id**: A non-negative integer representing the formula's unique identifier.

**Responses**

* **200 OK**: The plan details have been successfully retrieved. The response body contains a Json output of the plans that contains that formula
* **404 Not Found**: The specified formula does not exist.
* **400 Bad Request**: Invalid formula id.

**Example Response (200 OK):**

**A screenshot of a computer

Description automatically generated**

1. **Delete a spefic plan with id**

**DELETE** /plans/:id

Delete a specific plan with id.

**Request**

**Method**: DELETE

**Path**: /plans/:id

**Path Parameter**:

**id**: A non-negative integer representing the formula's unique identifier.

**Responses**

* **200 OK**: The plan details have been successfully deleted.
* **404 Not Found**: The specified formula does not exist.
* **400 Bad Request**: Invalid plan id.

**Example Response (200 OK):**

**A black screen with text and symbols

Description automatically generated with medium confidence**