**WellnessWorld – Healthy Living**

**Overview**

**WellnessWorld: Healthy Living** is an e-commerce platform focused on health and wellness products, including supplements, personal care items, and equipment. The platform supports **product attributes** specific to health and wellness (e.g., dosage, usage instructions, ingredients, expiry date), **subscription models** for recurring deliveries, and **advanced filtering** based on health goals like weight loss and immunity boosting.

**Core Functionalities**

1. **Category Management**
   * Organize products into categories like **Supplements**, **Personal Care**, and **Fitness Equipment**.
   * Subcategories such as **Vitamins**, **Skin Care**, and **Home Gym Equipment**.
2. **Product Type Management**
   * Define reusable **Product Types** with attributes such as dosage, ingredients, expiry date, and health benefits.
3. **Product Management**
   * Create and manage products with attributes such as **dosage**, **usage instructions**, and **ingredients**.
   * Track **expiry dates** for perishable health products.
4. **Product Variant Management**
   * Handle variants for attributes like dosage strength, flavors, and pack sizes.
   * Assign **unique SKUs** to each variant.
5. **Subscription Management**
   * Provide subscription options for recurring deliveries of health products (e.g., monthly vitamin packs).
   * Customize delivery frequency (e.g., monthly, quarterly).
6. **Advanced Filtering and Search**
   * Enable filtering by health goals (e.g., weight loss, muscle gain), dosage, and ingredients.
   * Provide sorting options such as most purchased, highly rated, and nearest expiry date.

**Entity Relationships**

| **Entity** | **Relationships** |
| --- | --- |
| **Category** | One-to-Many: A category can have multiple subcategories, and products belong to one category. |
| **ProductType** | One-to-Many: A product type defines attributes for multiple products. |
| **Product** | One-to-Many: A product can have multiple variants, and belongs to one category and one product type. |
| **ProductVariant** | Many-to-One: A product variant belongs to one product. |
| **Subscription** | Many-to-Many: Subscriptions can include multiple products, and products can belong to multiple subscriptions. |

**Entity Descriptions**

**1. Category**

* Represents a hierarchical structure for browsing health and wellness products.
* **Attributes**:
  + id: Unique identifier.
  + name: Category name (e.g., Supplements, Personal Care).
  + parentCategory: Reference to the parent category for hierarchy.
  + description: Description of the category.

**2. ProductType**

* Defines a template for products with reusable attributes.
* **Attributes**:
  + id: Unique identifier.
  + name: Name of the product type (e.g., Vitamin, Skincare).
  + attributes: List of attributes (e.g., Dosage, Ingredients, Usage Instructions, Expiry Date).

**3. Product**

* Represents a specific product linked to a category and product type.
* **Attributes**:
  + id: Unique identifier.
  + name: Product name (e.g., Vitamin C Supplement).
  + price: Base price of the product.
  + dosage: Dosage details (e.g., 500mg, 1000mg).
  + usageInstructions: Instructions for using the product.
  + ingredients: List of ingredients (e.g., Vitamin C, Zinc).
  + expiryDate: Expiry date for perishable items.
  + categoryId: Reference to the category.
  + productTypeId: Reference to the product type.

**4. ProductVariant**

* Represents specific variations of a product (e.g., different dosages or flavors).
* **Attributes**:
  + id: Unique identifier.
  + sku: Unique SKU for the variant.
  + variantAttributes: Attributes specific to the variant (e.g., Dosage: 500mg, Flavor: Orange).
  + stock: Stock quantity for the variant.
  + additionalPrice: Price adjustment for this variant.

**5. Subscription**

* Represents subscription plans for recurring deliveries.
* **Attributes**:
  + id: Unique identifier.
  + name: Subscription name (e.g., Monthly Vitamin Pack).
  + products: List of products included in the subscription.
  + frequency: Delivery frequency (e.g., monthly, quarterly).
  + price: Subscription price.

**API Requirements**

**1. Category Management**

**1.1 Create Category**

* **Endpoint**: POST /categories
* **Request Body**:

json

Copy code

{

"name": "Supplements",

"parentCategoryId": null,

"description": "All types of dietary supplements."

}

* **Response**:

json

Copy code

{

"id": 1,

"name": "Supplements",

"parentCategoryId": null,

"description": "All types of dietary supplements."

}

**2. Product Type Management**

**2.1 Create Product Type**

* **Endpoint**: POST /product-types
* **Request Body**:

json

Copy code

{

"name": "Vitamin",

"attributes": [

{ "name": "Dosage", "type": "Text" },

{ "name": "Usage Instructions", "type": "Text" },

{ "name": "Ingredients", "type": "Array" },

{ "name": "Expiry Date", "type": "Date" }

]

}

* **Response**:

json

Copy code

{

"id": 1,

"name": "Vitamin",

"attributes": [

{ "name": "Dosage", "type": "Text" },

{ "name": "Usage Instructions", "type": "Text" },

{ "name": "Ingredients", "type": "Array" },

{ "name": "Expiry Date", "type": "Date" }

]

}

**3. Product Management**

**3.1 Create Product**

* **Endpoint**: POST /products
* **Request Body**:

json

Copy code

{

"name": "Vitamin C Supplement",

"categoryId": 1,

"productTypeId": 1,

"price": 10.00,

"dosage": "500mg",

"usageInstructions": "Take one tablet daily after meals.",

"ingredients": ["Vitamin C", "Zinc"],

"expiryDate": "2025-01-01",

"variants": [

{

"variantAttributes": { "Dosage": "500mg", "Flavor": "Orange" },

"stock": 50,

"additionalPrice": 0,

"sku": "VITAMIN-500MG-ORANGE"

},

{

"variantAttributes": { "Dosage": "1000mg", "Flavor": "Lemon" },

"stock": 30,

"additionalPrice": 5,

"sku": "VITAMIN-1000MG-LEMON"

}

]

}

* **Response**:

json

Copy code

{

"id": 101,

"name": "Vitamin C Supplement",

"category": "Supplements",

"price": 10.00,

"dosage": "500mg",

"usageInstructions": "Take one tablet daily after meals.",

"ingredients": ["Vitamin C", "Zinc"],

"expiryDate": "2025-01-01",

"variants": [

{

"id": 201,

"variantAttributes": { "Dosage": "500mg", "Flavor": "Orange" },

"stock": 50,

"additionalPrice": 0,

"sku": "VITAMIN-500MG-ORANGE"

},

{

"id": 202,

"variantAttributes": { "Dosage": "1000mg", "Flavor": "Lemon" },

"stock": 30,

"additionalPrice": 5,

"sku": "VITAMIN-1000MG-LEMON"

}

]

}

**4. Subscription Management**

**4.1 Create Subscription**

* **Endpoint**: POST /subscriptions
* **Request Body**:

json

Copy code

{

"name": "Monthly Wellness Pack",

"products": [101],

"frequency": "Monthly",

"price": 25.00

}

* **Response**:

json

Copy code

{

"id": 301,

"name": "Monthly Wellness Pack",

"products": [

{ "id": 101, "name": "Vitamin C Supplement" }

],

"frequency": "Monthly",

"price": 25.00

}