Development

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API development is the process of building Application Programming Interfaces (APIs) that allow software components to exchange data. APIs are essential for modern software development because they simplify and accelerate the process.

- RESTful 웹서비스
- 개념정리
- OAS로 API 설계

RESTful 웹서비스

REST API

API 통신 수단

SOAP(Simple Object Access Protocal) : 성공적이지 않았다 하나도 쉽지 않았다.

--> REST (Representational State Transfer) 을 따르는 웹 서비스 "RESTful 웹서비스"

이베이 처음 사용 > AWS > Flickr > 페이스북, 트위터, 구글 등 사용

- 리소스 URI
- HTTP 메소드
- HATEOAS(헤이티오스) Hypermedia As The Engine Of Application State **하이퍼미디어 링크 , "리소스와 관련된 다른 리소스로의 링크를 포함하는 것"**

베스트 프렉티스

- **명사형**
- **복수형**
- **HATEOAS**
- **API 버전**
- **중첩된 리소스 : 메서드로 분리한다. 동일 URI를 GET호출은 조회, POST로 호출할 때 추가 = "PUT /gist/2/star 별추가 , DELETE /gist/2/star 별 취소"**
- **API 보안 : JWT, OAuth 2.0 ..**
- **문서 유지 관리**
- **상태코드 준수**
- **캐싱 보장 : ETag, Last-Modified**
- **요청 제한**

개념정리

IoC 제어의 역전(Inversion of Control, IoC)

Gof Design Pattern 책에서 Hollywood principle' --> 'Don't call us, we'll call you' (우리한테 연락하지 마세요. 우리가 당신에게 연락할게요.)
Dependency Inversion Principle은 class의 의존성 부패(Dependency Rot)를 제거하기 위한 대표적인 디자인 방법 Martin, Robert C.가 1996년 'The Dependency Inversion Principle'에서 제언함

A Class --> B Class 를 A Class --> <-- B Class

AOP Aspect Oriented Programming

관점 중심의 프로그램 방식으로 하나의 Object는 하나의 역할을 수행해야 합니다. 따라서 하나의 오브젝트에 필요한 기능들을 다른 오브젝트에 할당하므로서 오브젝트에게 하나만의 역할을 수행할 수 있도록 한다. 예를 들어서 트렌젝션이나 로그 , 보안에 해당하는 기능은 별도의 오브젝트에 의해서 역할을 수행함으로서 오브젝트는 그 기능 구현만을 수행할 수 있도록 한다.

OAS로 API 설계

는 OpenAPI Specification의 약자로, "OpenAPI 명세서" 의미

OpenAPI 또는 OAS(OpenAPI Specification)로 불리며, RESTful API를 정해진 표준 규칙에 따라 API Spec을 json 혹은 yaml 로 표현하는 방식 , 즉 "Restful API 디자인의 정의 방법의 표준"

예

API 설계 예제 YAML

```
openapi: 3.0.3
info:
  title: Sample Ecommerce App
  description: >
    'This is a ***sample ecommerce app API***.  You can find out more about Swagger
at [swagger.io](http://swagger.io).
    Description supports markdown markup. For example, you can use the `inline
code` using back ticks.'
  termsOfService: https://github.com/PacktPublishing/Modern-API-Development-with-
Spring-6-and-Spring-Boot-3/blob/main/LICENSE
  contact:
    name: Packt Support
    url: https://www.packt.com
    email: support@packtpub.com
  license:
    name: MIT
    url: https://github.com/PacktPublishing/Modern-API-Development-with-Spring-6-
and-Spring-Boot-3/blob/main/LICENSE
  version: 1.0.0
externalDocs:
  description: Any document link you want to generate along with API.
  url: http://swagger.io
servers:
  - url: https://ecommerce.swagger.io/v2
tags:
  - name: cart
    description: Everything about cart
    externalDocs:
      description: Find out more (extra document link)
      url: http://swagger.io
  - name: order
    description: Operation about orders
  - name: user
    description: Operations about users
  - name: customer
    description: Operations about user's persona customer
```

```
  - name: address
    description: Operations about user's address
  - name: payment
    description: Operations about payments
  - name: shipping
    description: Operations about shippings
  - name: product
    description: Operations about products
  - name: card
    description: card operation

paths:
  /api/v1/carts/{customerId}:
    get:
      tags:
        - cart
      summary: Returns the shopping cart
      description: Returns the shopping cart of given customer
      operationId: getCartByCustomerId
      parameters:
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: successful operation
          content:
            application/xml:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Cart'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Cart'
        404:
          description: Given customer ID doesn't exist
          content: {}
    delete:
      tags:
        - cart
      summary: Delete the shopping cart
      description: Deletes the shopping cart of given customer
      operationId: deleteCart
      parameters:
```

```
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      responses:
        204:
          description: successful operation
        404:
          description: Given customer ID doesn't exist
          content: {}
  /api/v1/carts/{customerId}/items:
    get:
      tags:
        - cart
      summary: Returns the list of products in user's shopping cart
      description: Returns the items in shopping cart of given customer
      operationId: getCartItemsByCustomerId
      parameters:
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: successful operation
          content:
            application/xml:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Item'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Item'
        404:
          description: Given customer ID doesn't exist
          content: {}
    post:
      tags:
        - cart
      summary: Adds an item in shopping cart
      description: Adds an item to the shopping cart if it doesn't already exist,
or increment quantity by the specified number of items if it does.
      operationId: addCartItemsByCustomerId
```

```
      parameters:
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      requestBody:
        description: Item object
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Item'
          application/json:
            schema:
              $ref: '#/components/schemas/Item'
      responses:
        201:
          description: Item added successfully
          content:
            application/xml:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Item'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Item'
        404:
          description: Given customer ID doesn't exist
          content: {}
    put:
      tags:
        - cart
      summary: Replace/add an item in shopping cart
      description: Adds an item to the shopping cart if it doesn't already exist,
or replace with given item if it does.
      operationId: addOrReplaceItemsByCustomerId
      parameters:
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      requestBody:
        description: Item object
        content:
```

```
        application/xml:
          schema:
            $ref: '#/components/schemas/Item'
        application/json:
          schema:
            $ref: '#/components/schemas/Item'
    responses:
      201:
        description: Item added successfully
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Item'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Item'
      404:
        description: Given customer ID doesn't exist
        content: {}
/api/v1/carts/{customerId}/items/{itemId}:
  get:
    tags:
      - cart
    summary: Returns given item from user's shopping cart
    description: Returns given item from shopping cart of given customer
    operationId: getCartItemsByItemId
    parameters:
      - name: customerId
        in: path
        description: Customer Identifier
        required: true
        schema:
          type: string
      - name: itemId
        in: path
        description: Item (product) Identifier
        required: true
        schema:
          type: string
    responses:
      200:
        description: If item exists in cart
        content:
          application/xml:
            schema:
              type: array
```

```
                items:
                  $ref: '#/components/schemas/Item'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Item'
        404:
          description: Given item (product) ID doesn't exist
          content: {}
    delete:
      tags:
        - cart
      summary: Delete the item from shopping cart
      description: Deletes the item from shopping cart of given customer
      operationId: deleteItemFromCart
      parameters:
        - name: customerId
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
        - name: itemId
          in: path
          description: Item (product) Identifier
          required: true
          schema:
            type: string
      responses:
        202:
          description: Accepts the request, regardless of whether the specified
item exists in the cart or not.
  /api/v1/orders:
    post:
      tags:
        - order
      summary:  Creates a new order for the given order request
      description: Creates a new order for the given order request.
      operationId: addOrder
      requestBody:
        description: New Order Request object
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/NewOrder'
          application/json:
            schema:
              $ref: '#/components/schemas/NewOrder'
      responses:
```

```
      201:
        description: Order added successfully
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Order'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Order'
      406:
        description: If payment is not authorized.
        content: {}
  get:
    tags:
      - order
    summary: Returns the orders of given user
    description: Returns orders of given user
    operationId: getOrdersByCustomerId
    parameters:
      - name: customerId
        in: query
        description: Customer Identifier
        required: true
        schema:
          type: string
    responses:
      200:
        description: If order exists.
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Order'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Order'
      404:
        description: Order doesn't exist for given user.
        content: {}
/api/v1/orders/{id}:
  get:
    tags:
      - order
```

```
    summary: Returns the order of given order ID
    description: Returns orders of given order ID
    operationId: getOrdersByOrderId
    parameters:
      - name: id
        in: path
        description: Order Identifier
        required: true
        schema:
          type: string
    responses:
      200:
        description: If order exists.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Order'
          application/json:
            schema:
              $ref: '#/components/schemas/Order'
      404:
        description: Order doesn't exist for given user.
        content: {}
/api/v1/customers:
  get:
    tags:
      - customer
    summary: Returns all customers
    description: Returns all customers, or empty collection if no use found
    operationId: getAllCustomers
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/User'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/User'
/api/v1/customers/{id}:
  get:
    tags:
      - customer
    summary: Returns a customer
    description: Returns a customers identifiable by given ID
```

```
      operationId: getCustomerById
      parameters:
        - name: id
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                $ref: '#/components/schemas/User'
            application/json:
              schema:
                $ref: '#/components/schemas/User'
    delete:
      tags:
        - customer
      summary: Deletes the customer
      description: Deletes the customer identifiable by given ID
      operationId: deleteCustomerById
      parameters:
        - name: id
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
      responses:
        202:
          description: Request accepted, returns this status even if user does not
exist
          content: {}
  /api/v1/customers/{id}/cards:
    get:
      tags:
        - customer
      summary: Returns all customer's cards
      description: Returns all customer's cards based on given customer ID
      operationId: getCardsByCustomerId
      parameters:
        - name: id
          in: path
          description: Customer Identifier
          required: true
          schema:
            type: string
```

```
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Card'
          application/json:
            schema:
              $ref: '#/components/schemas/Card'
/api/v1/customers/{id}/addresses:
  get:
    tags:
      - customer
    summary: Returns all customer's addresses
    description: Returns all customer's addresses based on given customer ID
    operationId: getAddressesByCustomerId
    parameters:
      - name: id
        in: path
        description: Customer Identifier
        required: true
        schema:
          type: string
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Address'
          application/json:
            schema:
              $ref: '#/components/schemas/Address'
/api/v1/addresses:
  get:
    tags:
      - address
    summary: Returns all user's addresses
    description: Returns all user's addresses, else empty collection
    operationId: getAllAddresses
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Address'
```

```
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Address'
    post:
      tags:
        - address
      summary: Creates a new user addresses
      description: Creates a new user addresses. Does nothing if address already
exists.
      operationId: createAddress
      requestBody:
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/AddAddressReq'
          application/json:
            schema:
              $ref: '#/components/schemas/AddAddressReq'
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                $ref: '#/components/schemas/Address'
            application/json:
              schema:
                $ref: '#/components/schemas/Address'
  /api/v1/addresses/{id}:
    get:
      tags:
        - address
      summary: Returns user's address
      description: Returns user's address based on given address ID.
      operationId: getAddressesById
      parameters:
        - name: id
          in: path
          description: address Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
```

```
                $ref: '#/components/schemas/Address'
            application/json:
              schema:
                $ref: '#/components/schemas/Address'
    delete:
      tags:
        - address
      summary: Deletes user's address
      description: Deletes user's address based on given address ID.
      operationId: deleteAddressesById
      parameters:
        - name: id
          in: path
          description: address Identifier
          required: true
          schema:
            type: string
      responses:
        202:
          description: Accepts the deletion request and perform deletion. If ID
does not exist, does nothing.
          content: {}
  /api/v1/cards:
    get:
      tags:
        - card
      summary: Returns all user's cards
      description: Returns all user's cards, else empty collection
      operationId: getAllCards
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Card'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Card'
    post:
      tags:
        - card
      summary: Creates a  new card
      description: Creates a new card. or replaces the existing one
      operationId: registerCard
      requestBody:
```

```
      content:
        application/xml:
          schema:
            $ref: '#/components/schemas/AddCardReq'
        application/json:
          schema:
            $ref: '#/components/schemas/AddCardReq'
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Card'
          application/json:
            schema:
              $ref: '#/components/schemas/Card'
/api/v1/cards/{id}:
  get:
    tags:
      - card
    summary: Returns user's card
    description: Returns user's card based on given card ID.
    operationId: getCardById
    parameters:
      - name: id
        in: path
        description: card Identifier
        required: true
        schema:
          type: string
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Card'
          application/json:
            schema:
              $ref: '#/components/schemas/Card'
  delete:
    tags:
      - card
    summary: Deletes card's address
    description: Deletes card's address based on given card ID.
    operationId: deleteCardById
    parameters:
      - name: id
        in: path
```

```
          description: card Identifier
          required: true
          schema:
            type: string
      responses:
        202:
          description: Accepts the deletion request and perform deletion. If ID
does not exist, does nothing.
          content: {}
  /api/v1/payments:
    post:
      tags:
        - payment
      summary: Authorize a payment request
      description: Authorize a payment request.
      operationId: authorize
      requestBody:
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/PaymentReq'
          application/json:
            schema:
              $ref: '#/components/schemas/PaymentReq'
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                $ref: '#/components/schemas/Authorization'
            application/json:
              schema:
                $ref: '#/components/schemas/Authorization'
    get:
      tags:
        - payment
      summary: Returns the payment authorization
      description: Return the payment authorization for the specified order
      operationId: getOrdersPaymentAuthorization
      parameters:
        - name: id
          in: query
          description: Order Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: For successful fetch.
```

```
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Authorization'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Authorization'
/api/v1/shipping:
  post:
    tags:
      - shipping
    summary: Ship the specified shipping request
    description: Ship the specified shipping request
    operationId: shipOrder
    requestBody:
      content:
        application/xml:
          schema:
            $ref: '#/components/schemas/ShippingReq'
        application/json:
          schema:
            $ref: '#/components/schemas/ShippingReq'
    responses:
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              $ref: '#/components/schemas/Authorization'
          application/json:
            schema:
              $ref: '#/components/schemas/Authorization'
  get:
    tags:
      - shipping
    summary: Return the Shipment
    description: Return the Shipment for the specified order
    operationId: getShipmentByOrderId
    parameters:
      - name: id
        in: query
        description: Order Identifier
        required: true
        schema:
          type: string
    responses:
```

```
      200:
        description: For successful fetch.
        content:
          application/xml:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Shipment'
          application/json:
            schema:
              type: array
              items:
                $ref: '#/components/schemas/Shipment'
/api/v1/products:
  get:
    tags:
      - product
    summary: Returns all the matched products
    description: Returns the products that matches the given query criteria
    operationId: queryProducts
    parameters:
      - name: tag
        in: query
        description: Product tag
        required: false
        schema:
          type: string
      - name: name
        in: query
        description: Product name
        required: false
        schema:
          type: string
      - name: page
        in: query
        description: Query page number
        required: false
        schema:
          type: integer
          format: int32
          default: 1
      - name: size
        in: query
        description: Query page size
        required: false
        schema:
          type: integer
          format: int32
          default: 10
    responses:
```

```
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Product'
            application/json:
              schema:
                type: array
                items:
                  $ref: '#/components/schemas/Product'
  /api/v1/products/{id}:
    get:
      tags:
        - product
      summary: Returns a product
      description: Returns the product that matches the given product ID
      operationId: getProduct
      parameters:
        - name: id
          in: path
          description: Product Identifier
          required: true
          schema:
            type: string
      responses:
        200:
          description: For successful fetch.
          content:
            application/xml:
              schema:
                $ref: '#/components/schemas/Product'
            application/json:
              schema:
                $ref: '#/components/schemas/Product'
components:
  schemas:
    Cart:
      description: Shopping Cart of the user
      type: object
      properties:
        customerId:
          description: Id of the customer who possesses the cart
          type: string
        items:
          description: Collection of items in cart.
          type: array
          items:
```

```
        $ref: '#/components/schemas/Item'
Item:
  description: Items in shopping cart
  type: object
  properties:
    id:
      description: Item Identifier
      type: string
    quantity:
      description: The item quantity
      type: integer
      format: int32
    unitPrice:
      description: The item's price per unit
      type: number
      format: double
Order:
  description: Represents an order
  type: object
  properties:
    id:
      description: Order identifier
      type: string
    customer:
      $ref: '#/components/schemas/User'
    address:
      $ref: '#/components/schemas/Address'
    card:
      $ref: '#/components/schemas/Card'
    date:
      description: Order's data and time details
      type: string
      format: date-time
    items:
      description: Collection of order items.
      type: array
      items:
        $ref: '#/components/schemas/Item'
    total:
      description: Order total
      type: number
      format: double
    payment:
      $ref: '#/components/schemas/Payment'
    shipment:
      $ref: '#/components/schemas/Shipment'
    status:
      description: Order Status
      type: string
      enum:
```

```
        - CREATED
        - PAID
        - SHIPPED
        - PAYMENT_FAILED
        - SHIPMENT_FAILED
        - COMPLETED
    xml:
      name: Order
  AddAddressReq:
    allOf:
      - $ref: '#/components/schemas/Address'
      - type: object
        properties:
          userId:
            type: string

    xml:
      name: AddAddressReq
  Address:
    type: object
    properties:
      number:
        description: house of flat number
        type: string
      residency:
        description: Socieity or building name
        type: string
      street:
        description: street name
        type: string
      city:
        description: city name
        type: string
      state:
        description: state name
        type: string
      country:
        description: country name
        type: string
      pincode:
        description: postal code
        type: string
    xml:
      name: Address
  Card:
    type: object
    properties:
      cardNumber:
        description: Card Number
        type: string
```

```
      expires:
        description: Expiration date
        type: string
      ccv:
        description: CCV code
        type: string
    xml:
      name: Card
  AddCardReq:
    description: Request object for new card registration.
    allOf:
      - $ref: '#/components/schemas/Card'
      - type: object
        properties:
          userId:
            type: object
    xml:
      name: AddCardReq
  Payment:
    type: object
    properties:
      authorized:
        description: Flag that specified whether payment is authorized or not
        type: boolean
      message:
        description: Approval or rejection message
        type: string
    xml:
      name: Payment
  Shipment:
    type: object
    properties:
      orderId:
        description: Order Identifier
        type: string
      carrier:
        description: Shipping Carrier
        type: string
      trackingNumber:
        description: Shipping Tracking Number
        type: string
      estDeliveryDate:
        description: Estimated Delivery Date
        type: string
        format: date
    xml:
      name: Shipment
  ShippingReq:
    description: Contains information required for Shipping request
    type: object
```

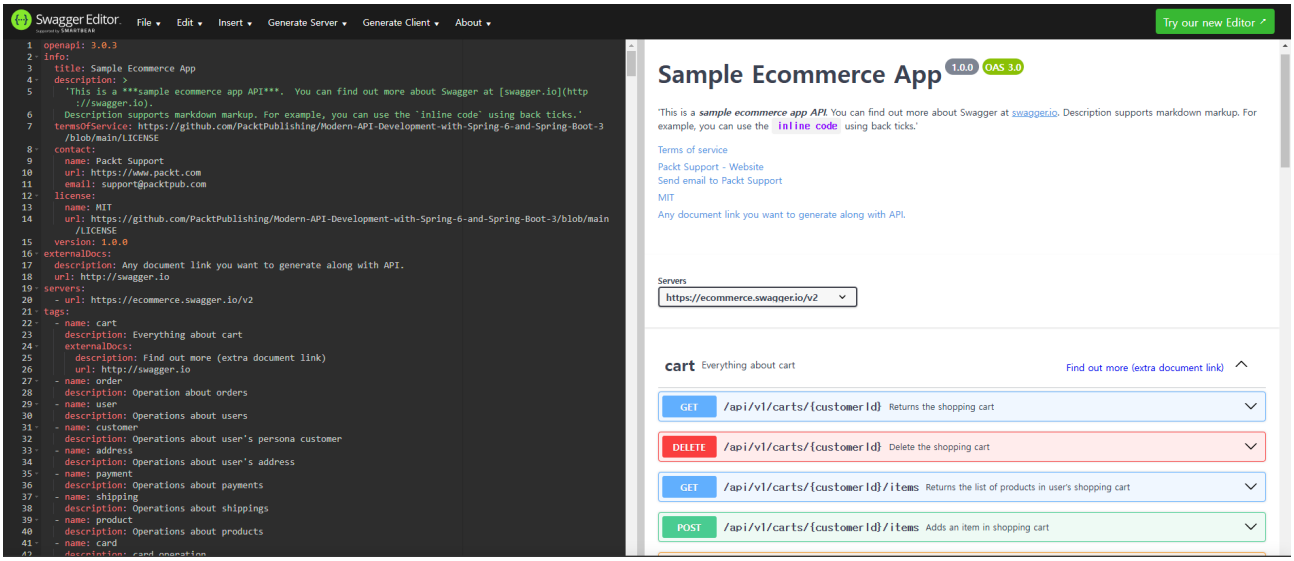
```
    properties:
      orderId:
        description: Order Identifier
        type: string
      address:
        $ref: '#/components/schemas/Address'
      itemCount:
        description: The number of items in the order
        type: integer
        format: int32
    xml:
      name: ShippingReq

  User:
    type: object
    properties:
      id:
        type: integer
        format: int64
      username:
        type: string
      firstName:
        type: string
      lastName:
        type: string
      email:
        type: string
      password:
        type: string
      phone:
        type: string
      userStatus:
        type: integer
        description: User Status
        format: int32
    xml:
      name: User
  NewOrder:
    description: Contains the new order request information
    type: object
    properties:
      customer:
        #description: URI that should be used to fetch the customer
        $ref: '#/components/schemas/URI'
      address:
        #description: URI that should be used to fetch the address
        $ref: '#/components/schemas/URI'
      card:
        #description: URI that should be used to fetch the payment card
        $ref: '#/components/schemas/URI'
```

```
        items:
          #description: URI that should be used to fetch the items from shopping
cart
          $ref: '#/components/schemas/URI'
      xml:
        name: NewOrder
    URI:
      type: object
      xml:
        name: URI
    Authorization:
      type: object
      properties:
        orderId:
          description: Order Identification
          type: string
        time:
          description: Timestamp when this authorization was created
          type: string
          format: date-time
        authorized:
          description: Flat that specify whether the payment is authorized
          type: boolean
        message:
          description: Approavl or rejection message
          type: string
        error:
          description: Processing error description, if any
          type: string
      xml:
        name: Authorization
    PaymentReq:
      description: Contains the payment request information
      type: object
      properties:
        orderId:
          description: Order Identifier
          type: string
        customer:
          $ref: '#/components/schemas/CustomerInfoOnCard'
        address:
          $ref: '#/components/schemas/Address'
        card:
          $ref: '#/components/schemas/Card'
        amount:
          description: Payment amount
          type: number
          format: double
      xml:
        name: PaymentReq
```

```
    CustomerInfoOnCard:
      description: Customer information required for payment processing
      type: object
      properties:
        firstName:
          description: Customer first name
          type: string
        lastName:
          description: Customer last name
          type: string
      xml:
        name: CustomerInfoOnCard
    Product:
      description: Product information
      type: object
      properties:
        id:
          description: Product identifier
          type: string
        name:
          description: Product Name
          type: string
        description:
          description: Prodcut's description
          type: string
        imageUrl:
          description: Product image's URL
          type: string
        price:
          description: Product price
          type: number
          format: double
        count:
          description: Product count
          type: integer
          format: int32
        tag:
          description: Tags associated with the product
          type: array
          uniqueItems: true
          items:
            type: string
```

https://editor.swagger.io/ 사이트를 통하여 확인


Swagger Editor
File
Edit
Insert
Generate Server
Generate Client
About
Try our new Editor
openapi: 3.0.3
info:
title: Sample Ecommerce App
description: >
'This is a ***sample ecommerce app API***. You can find out more about Swagger at swagger.io.
Description supports markdown markup. For example, you can use the `inline code` using back ticks.'
termsOfService: https://github.com/PacktPublishing/Modern-API-Development-with-Spring-6-and-Spring-Boot-3/blob/main/LICENSE
contact:
name: Packt Support
url: https://www.packt.com
email: support@packtpub.com
license:
name: MIT
url: https://github.com/PacktPublishing/Modern-API-Development-with-Spring-6-and-Spring-Boot-3/blob/main/LICENSE
version: 1.0.0
externalDocs:
description: Any document link you want to generate along with API.
url: http://swagger.io
servers:
- url: https://ecommerce.swagger.io/v2
tags:
- name: cart
description: Everything about cart
externalDocs:
description: Find out more (extra document link)
url: http://swagger.io
- name: order
description: Operation about orders
- name: user
description: Operations about users
- name: customer
description: Operations about user's persona customer
- name: address
description: Operations about user's address
- name: payment
description: Operations about payments
- name: shipping
description: Operations about shippings
- name: product
description: Operations about products
- name: card
description: card operation
Sample Ecommerce App
1.0.0
OAS 3.0
'This is a sample ecommerce app API. You can find out more about Swagger at swagger.io. Description supports markdown markup. For example, you can use the inline code using back ticks.'
Terms of service
Packt Support - Website
Send email to Packt Support
MIT
Any document link you want to generate along with API.
Servers
https://ecommerce.swagger.io/v2
cart
Everything about cart
Find out more (extra document link)
GET
/api/v1/carts/{customerId}
Returns the shopping cart
DELETE
/api/v1/carts/{customerId}
Delete the shopping cart
GET
/api/v1/carts/{customerId}/items
Returns the list of products in user's shopping cart
POST
/api/v1/carts/{customerId}/items
Adds an item in shopping cart