

FSSE2305 E-commerce Final Project

Backend Requirement

1. Product
2. Shopping Cart
3. Transaction
4. User

Product API:

1. Get All Product
2. Get Product By Product Id

Shopping Cart:

Authentication is needed

3. Add New Item To Cart
 - Add quantity only, do not reduce stock
4. Get User Cart Items
5. Update Cart Item Quantity
 - Update Quantity
6. Remove Cart Item

Transaction:

Authentication is needed

7. Create a New Transaction
 - Transaction status → "PREPARE"
8. Get Transaction Details By Transaction id
9. Update the Transaction Status: Pay
 - Deduce the stock
 - Transaction status → "PROCESSING"
10. Update the Transaction Status: Success
 - Empty the cart
 - Transaction status → "SUCCESS"

Core API Spec

1. GET /public/product: Get all products

Request:

No authentication required

Parameters: None

Response:

JSON

```
[
  {
    "pid": 1,
    "name": "Product Name",
    "image_url": "https://placeholder.com/image/url",
    "price": 123.45,
    "has_stock": true
  }, ...
]
```

2. GET /public/product/{id}: Get a product by pid

Request:

No authentication required

Parameters:

Path – id: Product ID

Response:

JSON

```
{
  "pid": 1,
  "name": "Product Name",
  "description": "A long long product description",
  "image_url": "https://placeholder.com/image/url",
  "price": 123.45,
  "stock": 100
}
```

3. PUT /cart/{pid}/{quantity}: Add a new item to cart

Request:

Authentication is needed

Parameters:

Path – pid: The product ID to be added to the cart

Path – quantity: The quantity of the product to be added to the cart

Response:

JSON

```
{
  "result": "SUCCESS"
}
```

4. GET /cart: Get user cart

Request:

Authentication is needed

Parameters: None

Response:

JSON

```
[
  {
    "pid": 1,
    "name": "Product Name",
    "image_url": "https://placeholder.com/image",
  }
]
```

```
    "price": 123.45,  
    "cart_quantity": 2,  
    "stock": 100  
  }, ...  
]
```

5. PATCH /cart/{pid}/{quantity}: Update cart quantity

Request:

Authentication is needed

Parameters:

Path – pid: The product ID to be updated

Path – quantity: The new quantity to be updated

Response:

JSON

```
{  
  "pid": 1,  
  "name": "Product Name",  
  "image_url": "https://placeholder.com/image",  
  "price": 123.45,  
  "cart_quantity": 3,  
  "stock": 100  
}
```

6. DELETE /cart/{pid}: Remove cart item

Request:

Authentication is needed

Parameters:

Path – pid: The product ID to be removed from the cart

Response:

JSON

```
{  
  "result": "SUCCESS"  
}
```

7. POST /transaction/prepare: Create a new transaction (Preparing state)

Request:

Authentication is needed

Parameters: None

Response:

JSON

```
{  
  "tid": 1,  
  "buyer_uid": 1,  
  "datetime": "20210924T12:34:00",  
  "status": "PREPARE",  
  "total": 123.45,  
  "items": [  
    {  
      "tpid": 1,  
      "product": {  
        "pid": 1,  
        "name": "Product Name",  
        "description": "A very very long description",  
        "image_url": "https://placeholder.com/image/url",  
        "price": 12.34,  
        "stock": 100  
      },  
      "quantity": 2,  
      "subtotal": 24.68  
    }, ...  
  ]  
}
```

8. GET /transaction/{tid}: Get transaction details by ID

Request:

Authentication is needed

Parameters:

Path – tid: The transaction ID

Response:

JSON

```
{
  "tid": 1,
  "buyer_uid": 1,
  "datetime": "20210924T12:34:00",
  "status": "PREPARE",
  "total": 123.45,
  "items": [
    {
      "tpid": 1,
      "product": {
        "pid": 1,
        "name": "Product Name",
        "description": "A very very long description",
        "imag_url": "https://placeholder.com/image/url",
        "price": 12.34,
        "stock": 100
      },
      "quantity": 2,
      "subtotal": 24.68
    }, ...
  ]
}
```

9. PATCH /transaction/{tid}/pay: Update the transaction status (PROCESSING)

Request:

Authentication is needed

Parameters:

Path – tid: The transaction ID to be processed

Response:

JSON

```
{
  "result": "SUCCESS"
}
```

10. PATCH /transaction/{tid}/finish

Request:

Authentication is needed

Parameters:

Path – tid: The transaction ID to be processed

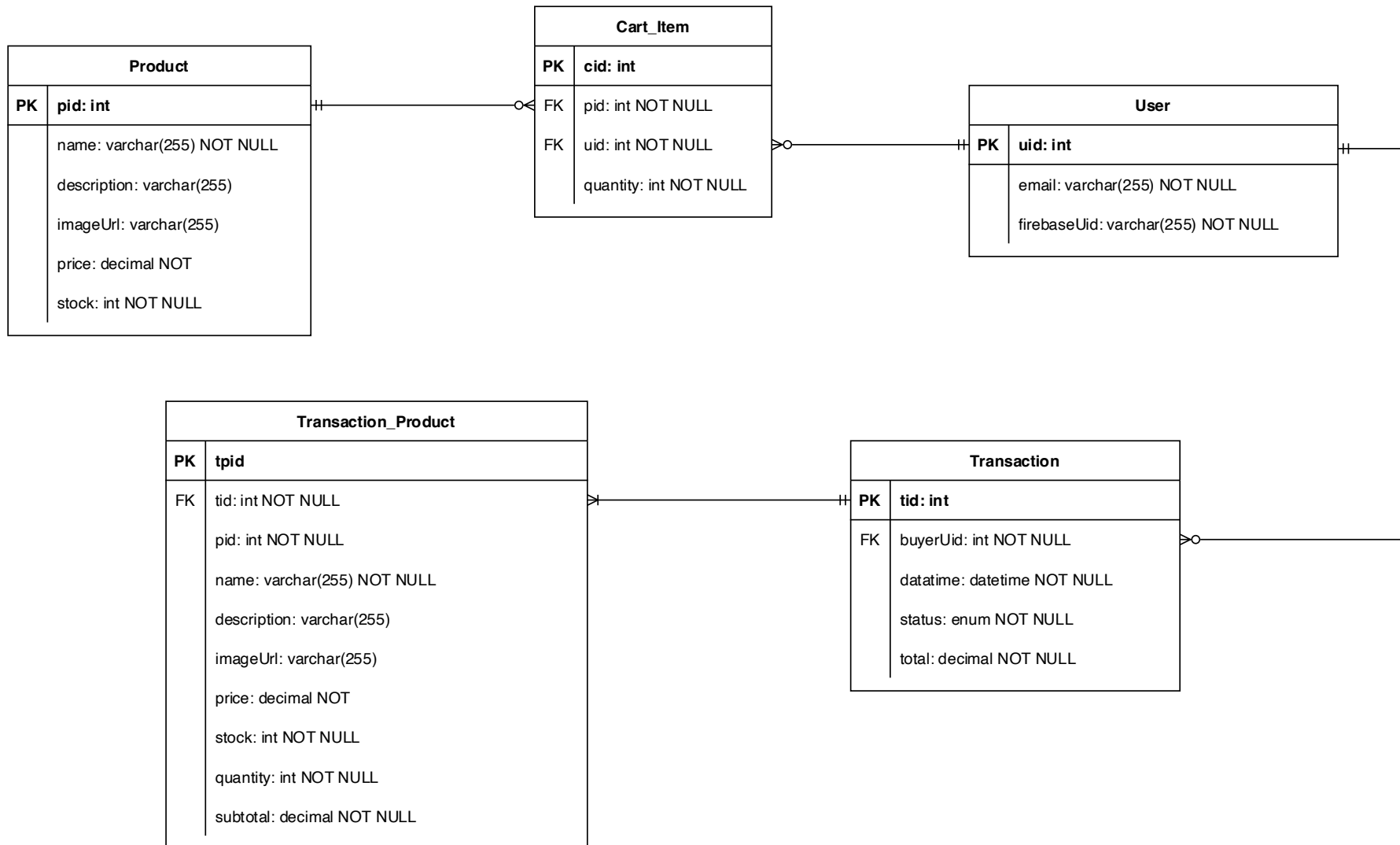
Response:

JSON

```
{
  "tid": 1,
  "buyer_uid": 1,
  "datetime": "20210924T12:34:00",
  "status": "SUCCESS",
  "total": 123.45,
  "items": [
    {
      "tpid": 1,
      "product": {
        "pid": 1,
```

```
    "name": "Product Name",
    "description": "A very very long description",
    "image_url": "https://placeholder.com/image/url",
    "price": 12.34,
    "stock": 100
  },
  "quantity": 2,
  "subtotal": 24.68
}, ...
```

ER Diagram



User Management Flow

