Requirements + Objective

Objective: Develop an application that allows users to manage the inventory of a small grocery shop. The application must provide functionality for users to control and track all products in stock.

Not specified in client request:
Authentication (!)
Time Zone (WA/Syd/Bris/Intl)
Date Format (yyyy-mm-dd vs dd-mm-yyyy vs mm-dd-yyyyy)

Management:
Product Management: (/products)
/Create/:id
/Update/:id
/Delete/:id
/:id

Aisle Management: (/aisles)
/All List all aisles.
/Create - Create new aisles.
/Update/:id - Update existing aisles.
/Delete/:id - Delete aisles.
/:id - List all products that belong to a specific aisle.

Data: (ID Columns Excluded)
Product Data:
Name
Quantity - Track the quantity of products in stock.
Price - Manage product prices.
Expiry Date - Monitor expiry dates.
Purchase Date - Record the date of purchase.
Aisle - Identify the aisle/location where each product can be found.

Aisle Data:
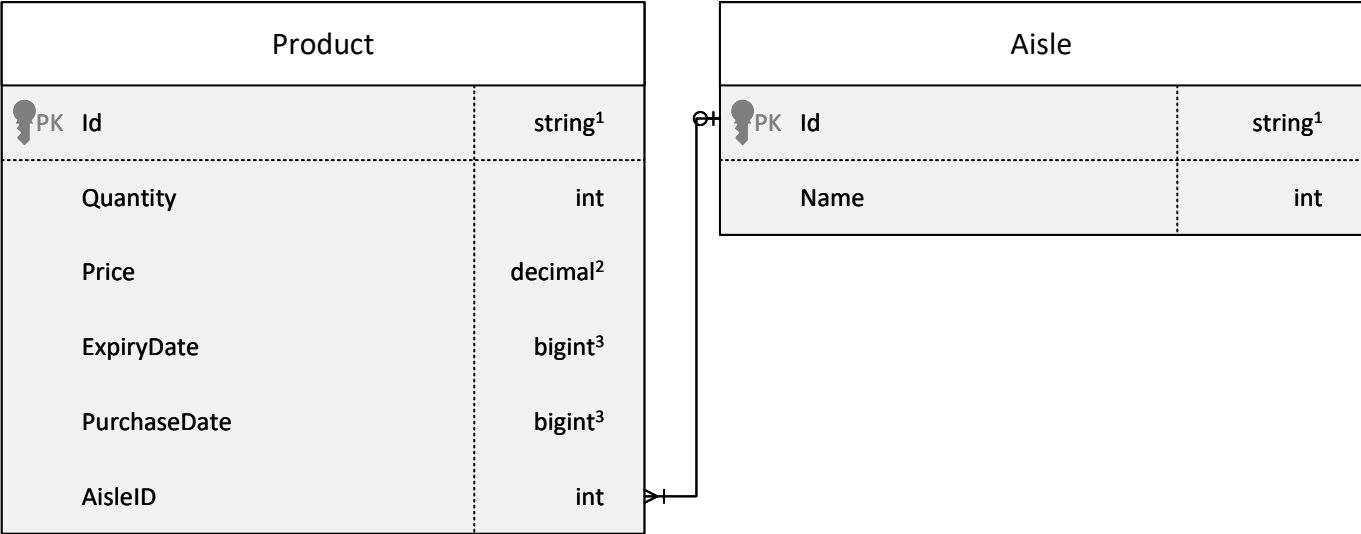Name

Database Planning

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<tr><td>

Considered:
- Basic CRUD requested
- SME business
  - Small development budget
  - Small inventory (uint not required but could be used in future)

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Not Considered:
- Authentication
  - Not required for this stage of product demonstration. (also dependant on client infrastructure)
- ID Security (Sequential ID vs External use GUID)

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Product

PK	Id	string[1]
	Quantity	int
	Price	decimal[2]
	ExpiryDate	bigint[3]
	PurchaseDate	bigint[3]
	AisleID	int

Aisle

PK	Id	string[1]
	Name	int

1. Normally int/bigint is preferred for ids because of performance, but string is easier to get working with MongoDb, and the performance would not be required for the scope of this project
2 .NET Decimal primative, MongoDB uses Decimal128.
3 .NET DateTime, MongoDB stores as Int64, should be UTC.

GroceryShop.App.V1

GreyShop.Web

Product(/s) Page

Display All Products

Search/Filter? — No → Display All Products

Search/Filter? — Yes → Display Matching Products

Delete Product Confirmation Dialog

Confirmed Action — No → Abort

Confirmed Action — Yes

Update Product Dialog

Input Valid? — No → Update Product Dialog

Input Valid? — Yes → Update Data

Aisle Page

Display All Aisles + Products

Search/Filter? — No → Display All Aisles + Products

Search/Filter? — Yes → Display Matching Aisles/Products

Abort

Aisle Empty (No Products) — No → Aisle must be Empty

Aisle Empty (No Products) — Yes

Confirmed Action — No → Abort

Delete Aisle Button

Report Status

GroceryShop.API

Product Service

Product Controller

Product Data

Process Data

Product Repo

Delete Product

Update Product

Get Aisle(/s) and Products

Process Data

Delete Aisles

GroceryShop.Db

Product Documents

Product Data

Product Documents

Product Documents

Product Documents

Aisle + Product Data

Aisle Documents