

Designing an Object-oriented Solution from a Business Case



Gill Cleeren

CTO Xpirit Belgium

@gillcleeren

Overview



Gathering the requirements

Identifying the classes and their functionalities

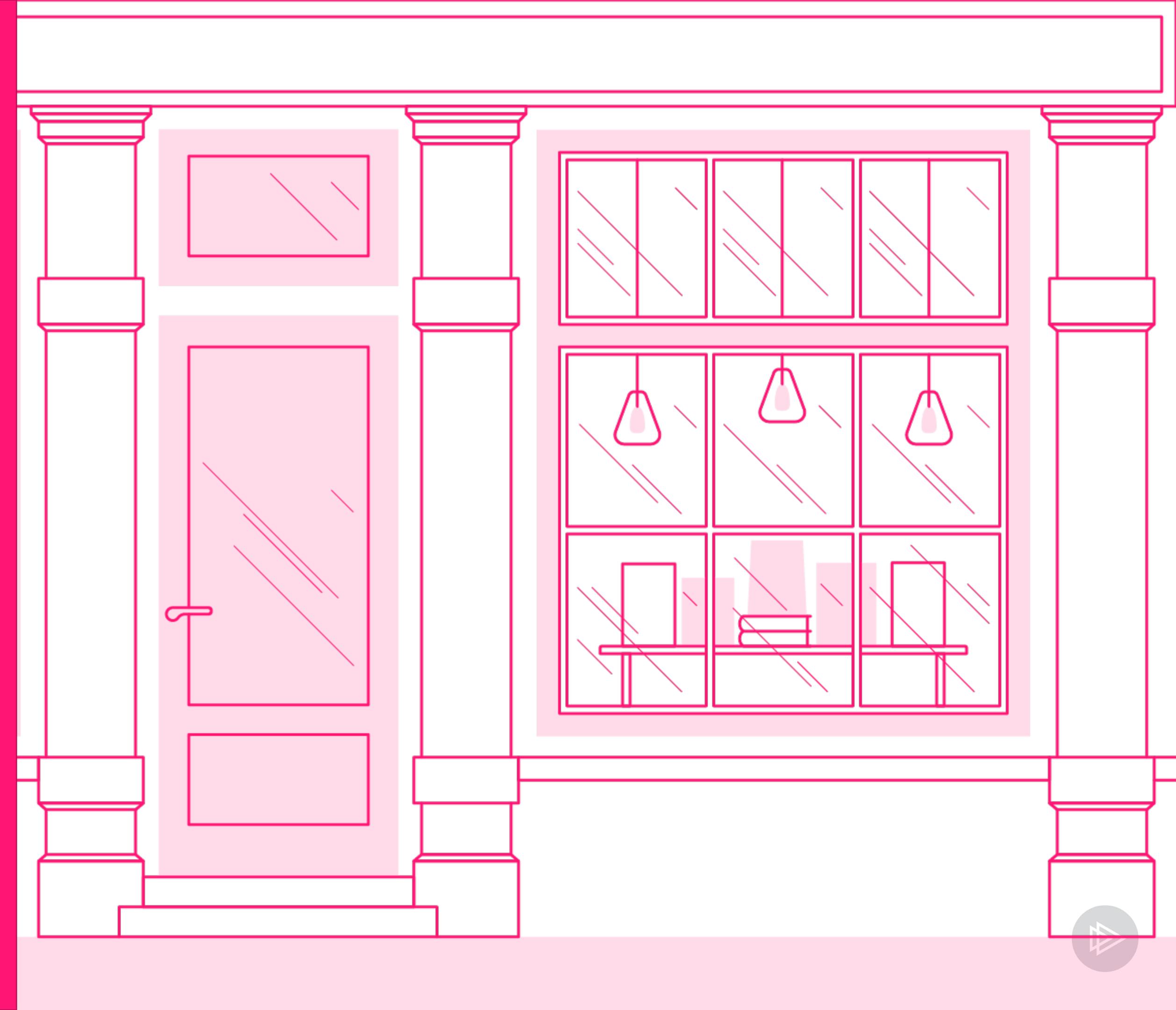


Gathering the Requirements



Welcome to Bethany's Pie Shop!

The most delicious pies





**“Hi!
I’m Bethany!”**





“I will need an application for the management of our inventory of ingredients, so that we can continue baking our pies!”

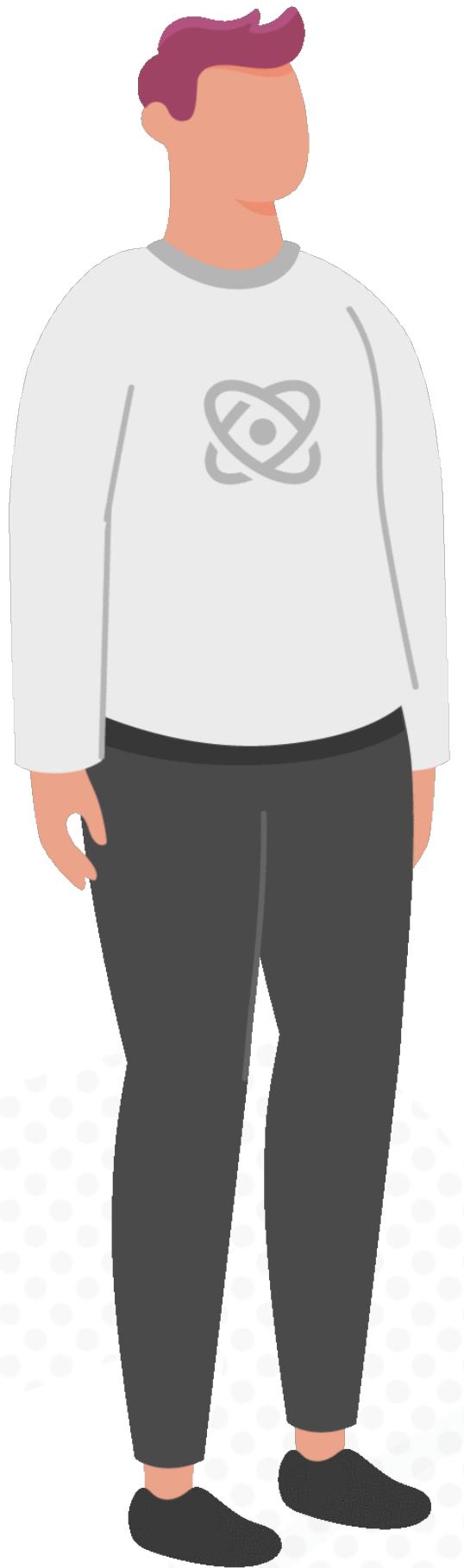


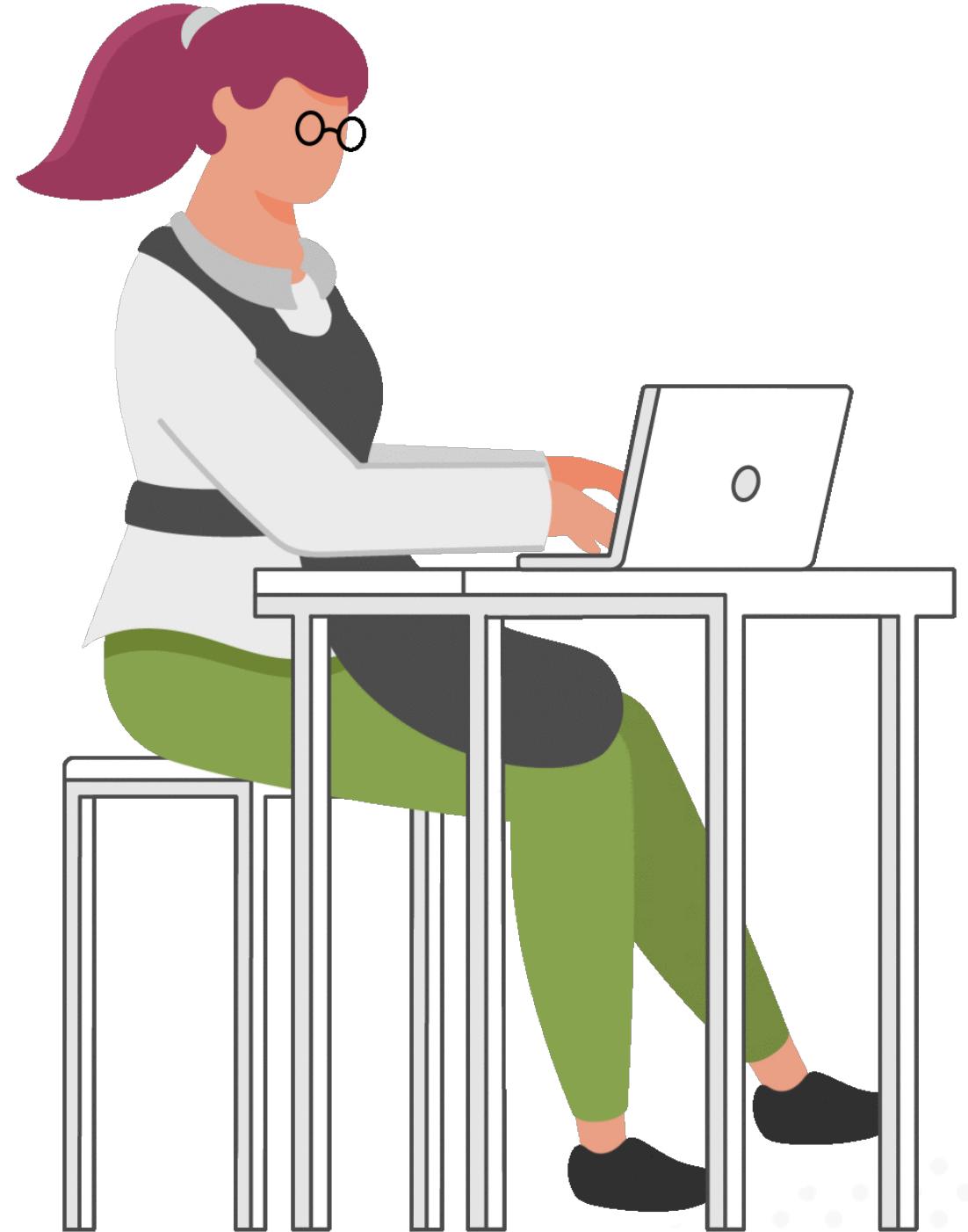
**This... is you,
the developer for the new application.**



“OK, Bethany, I think we can do that.

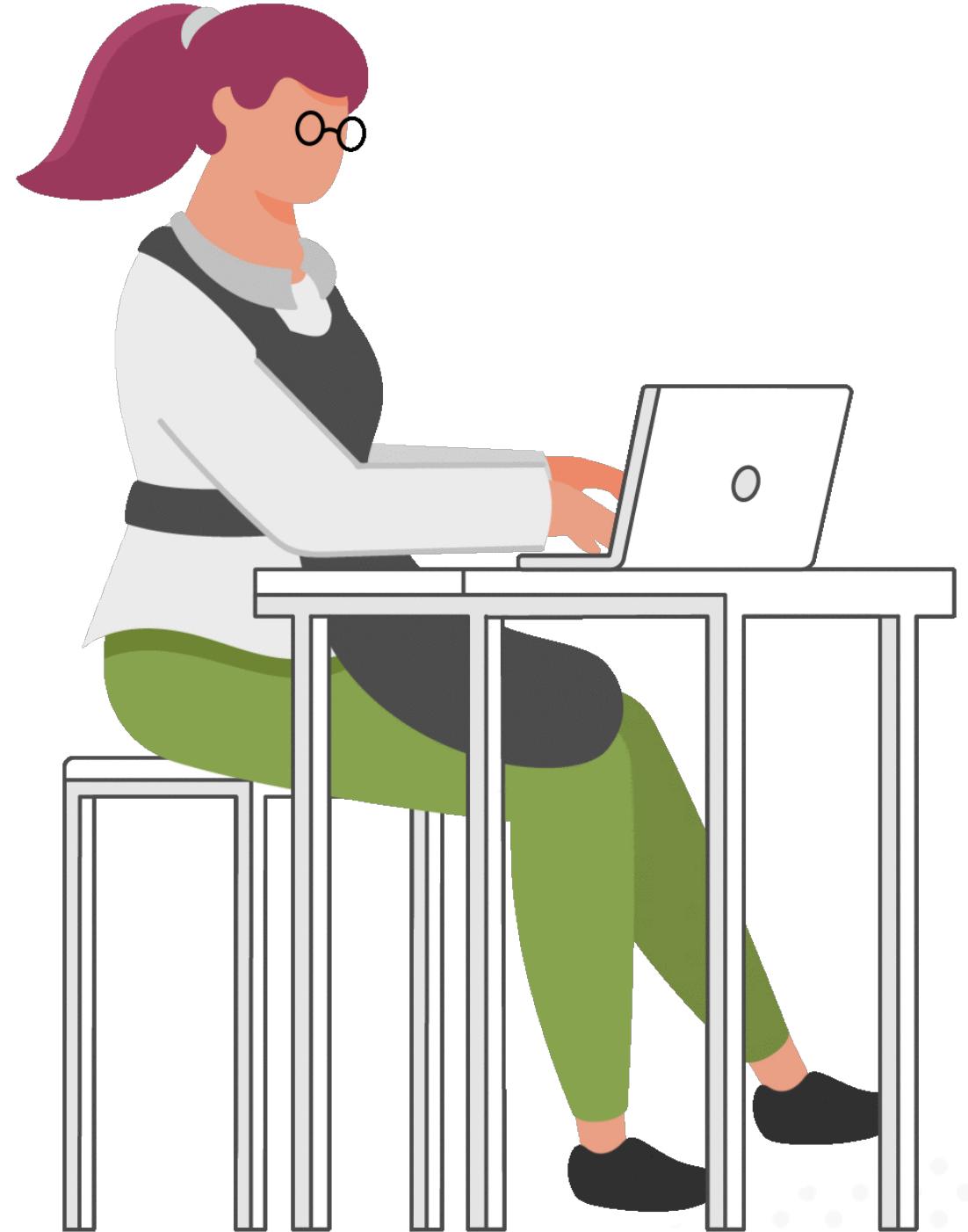
**Let’s discuss what the application will need
to be capable of doing first!”**





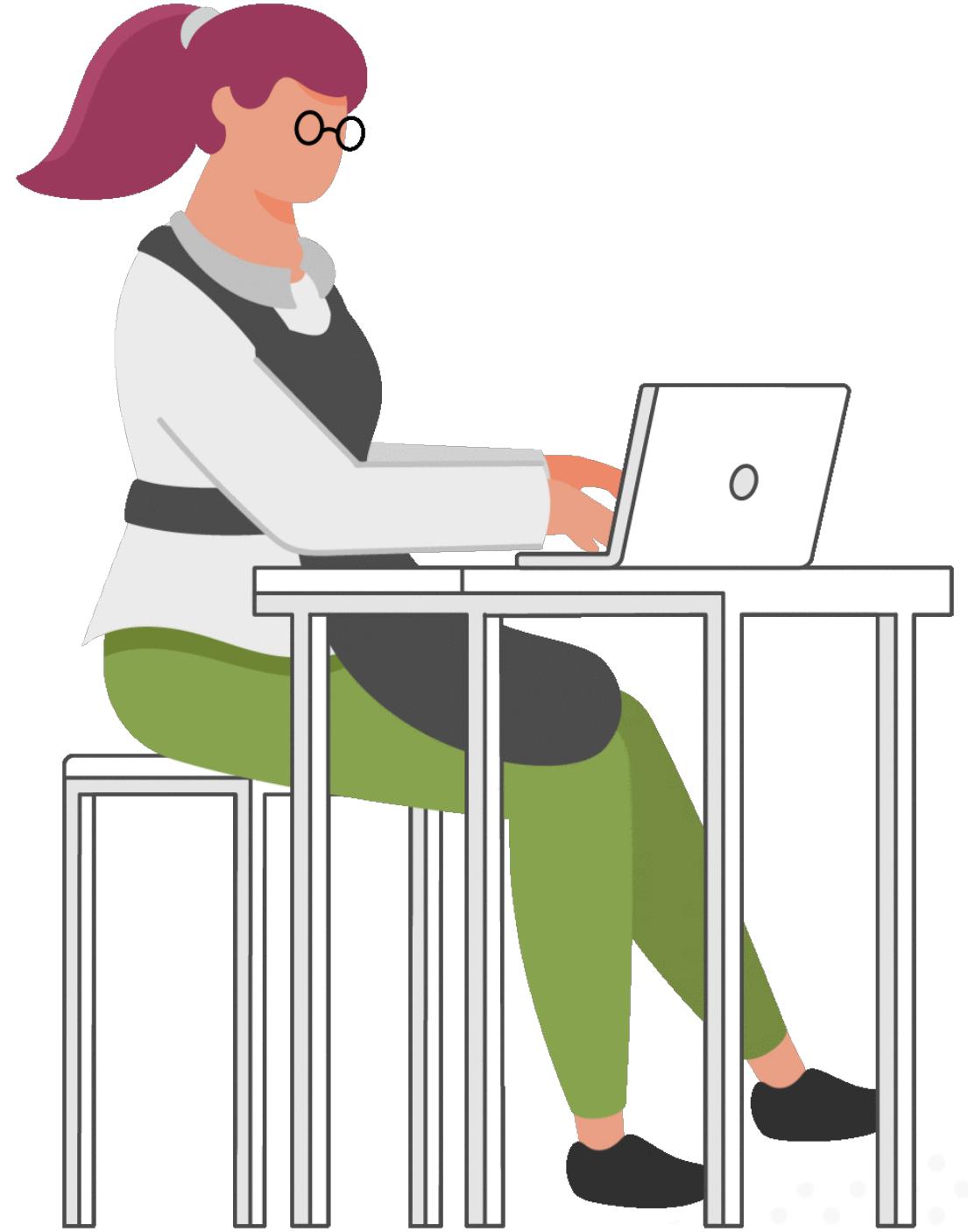
“Let’s call the application ‘Bethany’s Pie Shop Inventory Management’, I think that covers what it will need to do!”





“It will be used by our inventory managers in the warehouse.”

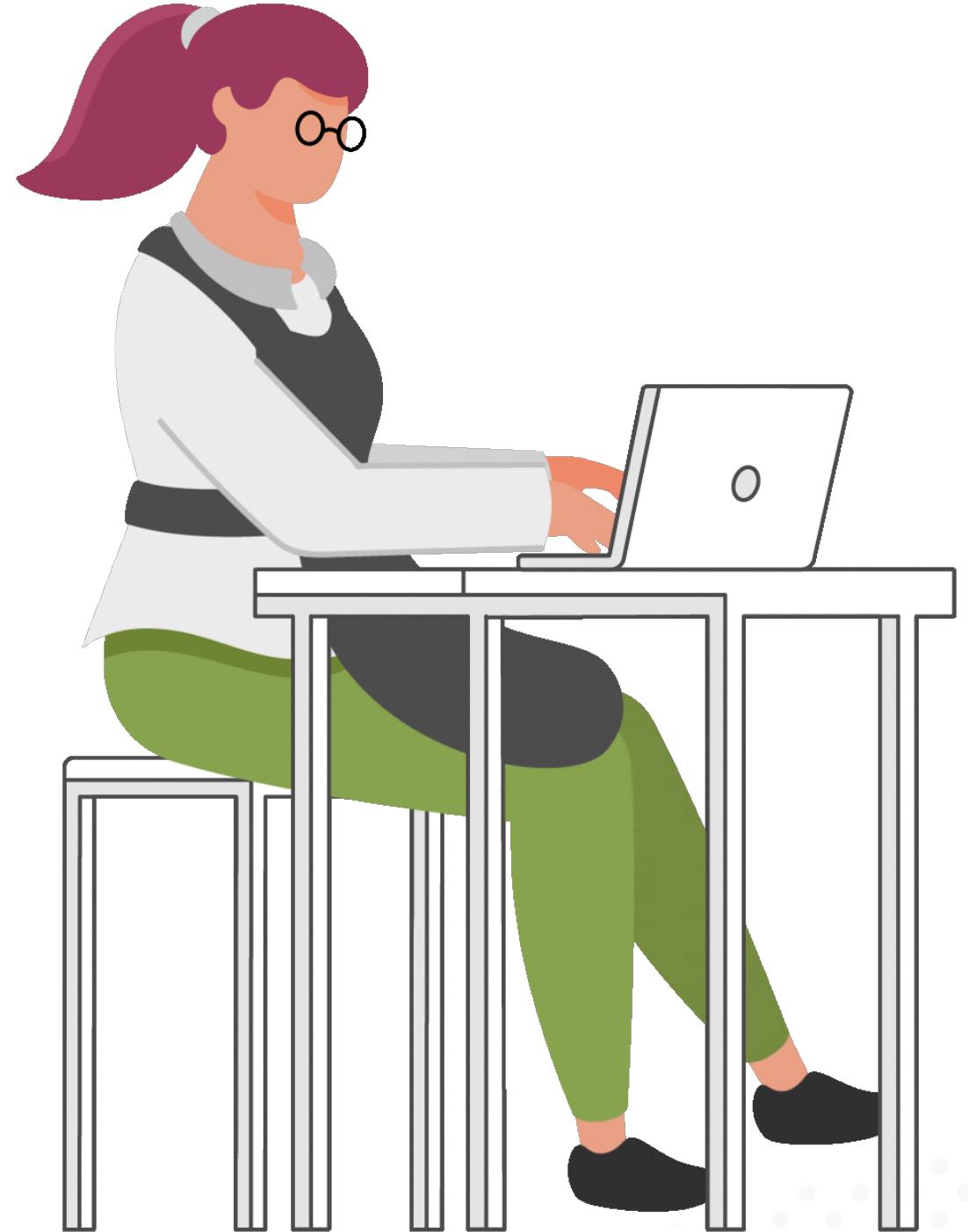




“When a product is used, the inventory of course needs to be updated to reflect the new situation.

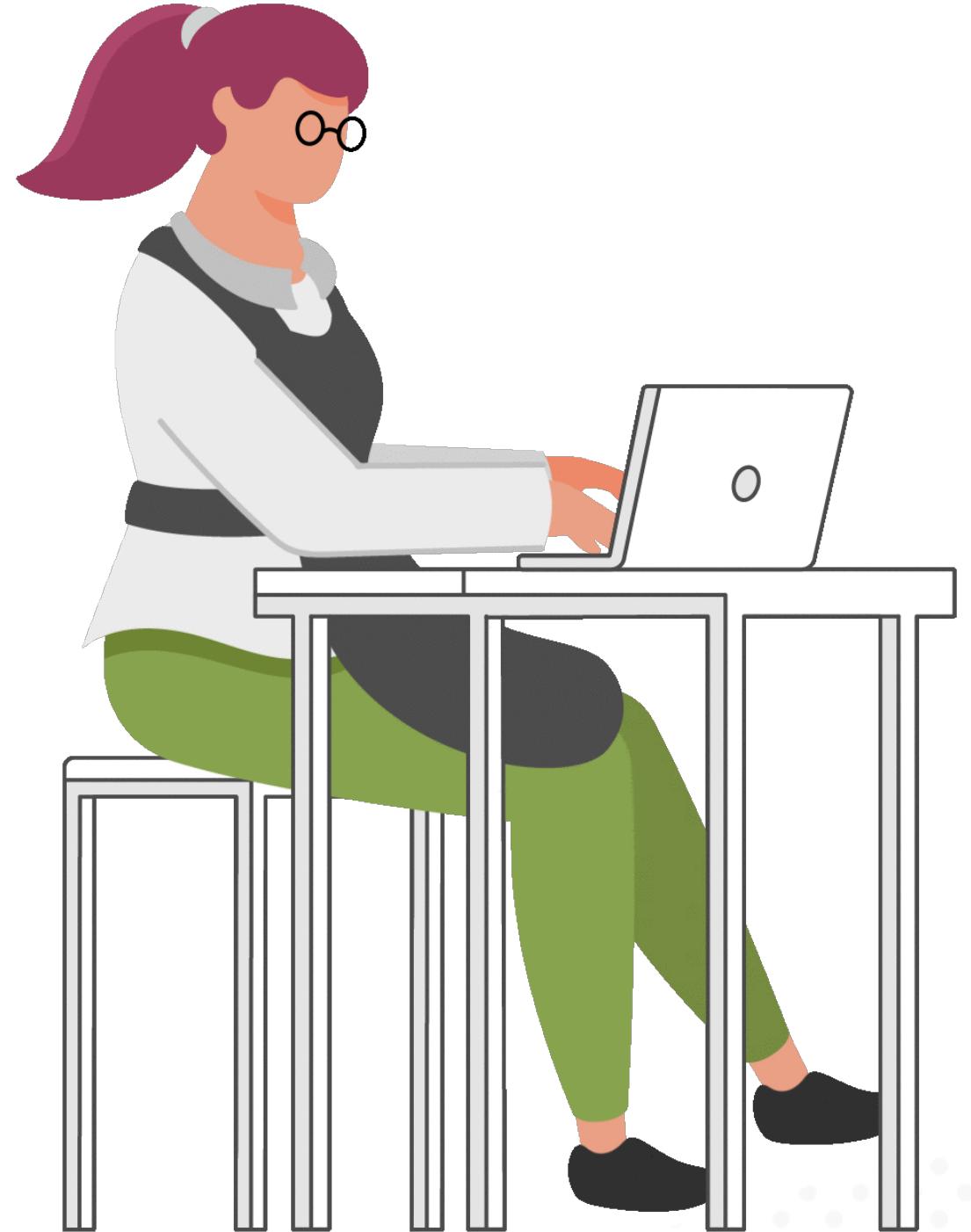
Some products are stored and used per item, in fact most of them are. But some, like flour, are stored per kilo. And some like eggs are bought per box.”





**“They need to be able to see which products
are low on stock, so we don’t run out!”**





“And it would be great from the application that they can directly create a new order for one or more products.

Most of our products are purchased in dollar, but some are also ordered in euro currency. A few I believe are ordered in British pound.

We also need to make sure not to order too many of a product, since we have limited storage capacity.”



“That is great information, I think we can start with this!”



Gathering the Requirements



Work with Products

Products exist in different unit types

Create Orders to increase stock of one or more Products

Products can have a Price in different Currencies



Gathering the Requirements



Work with Products

Products exist in different unit types

Create Orders to increase stock of one or more Products

Products can have a Price in different Currencies





“I may not have mentioned it: our inventory managers will also need to be able to add new products!”





**Requirements will
change!**

**OOP design will help you making this
possible!**



Gathering the Requirements



Work with Products

Products exist in different unit types

Create Orders to increase stock of one or more Products

Products can have a Price in different Currencies

Add new Product



Identifying the Classes and Their Functionalities

Identifying the Types

Product

Order & OrderItem

Price

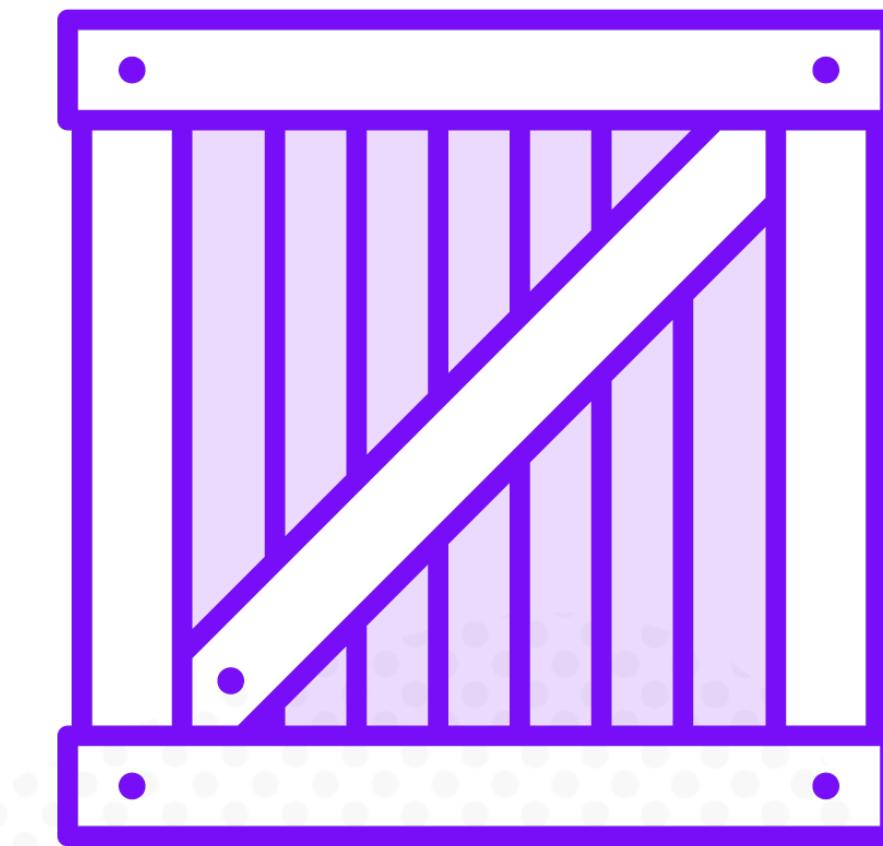
Currency

UnitType



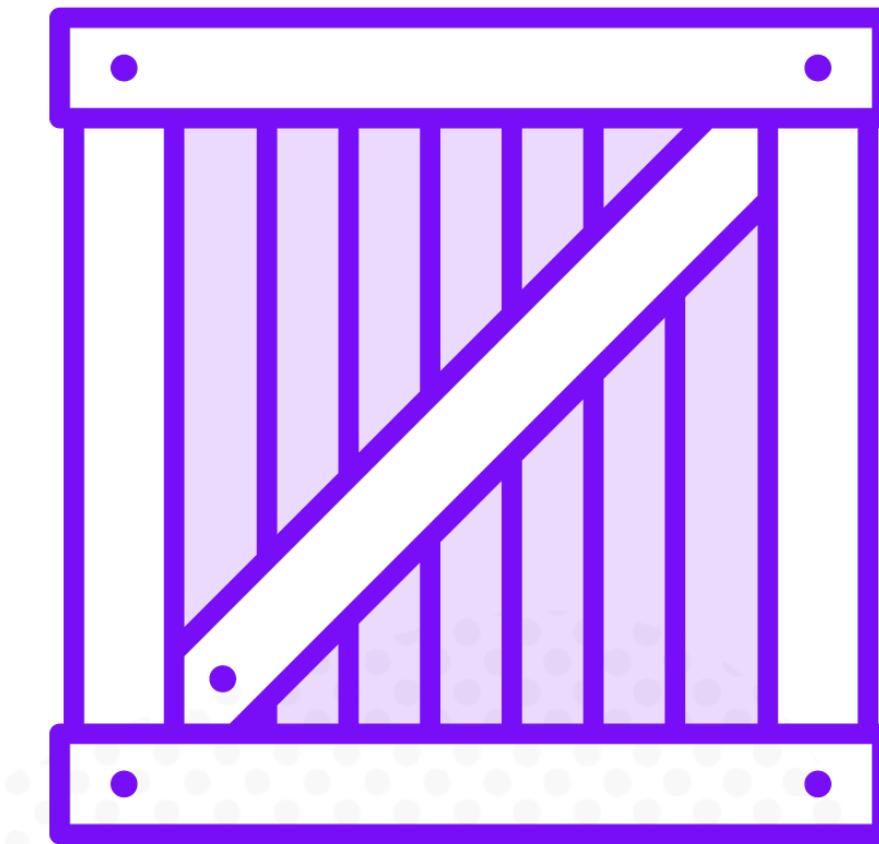
The Product Class: Data

Id
Name
Description
Maximum in stock
Price & currency
Unit type
Current amount in stock
Low on stock?



The Product Class: Functionalities

- “Use” product
- Add new product to inventory
- Alert if low on stock
- Display the details of a product (short & long)
- Increase stock when order arrives



The Order Class: Data

Id
List of Order Items (amount of product)
Fulfilled
Fulfilment date



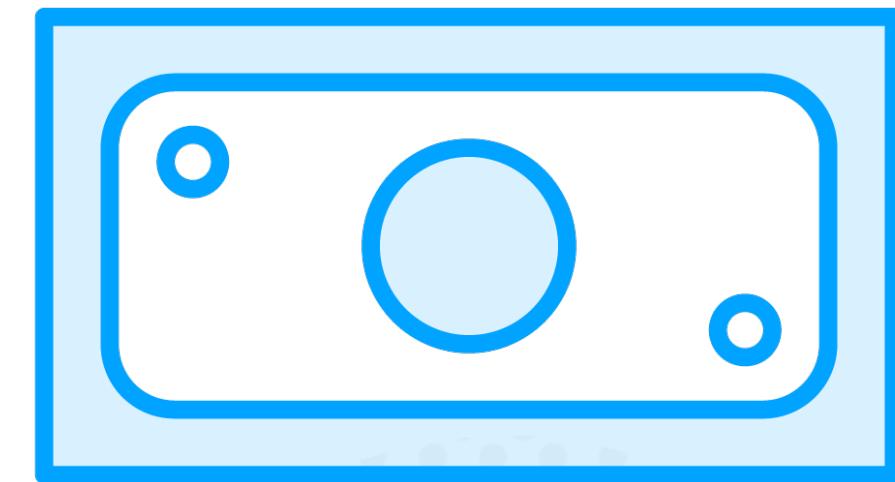
The Order Class: Functionalities

Show details of order and order lines



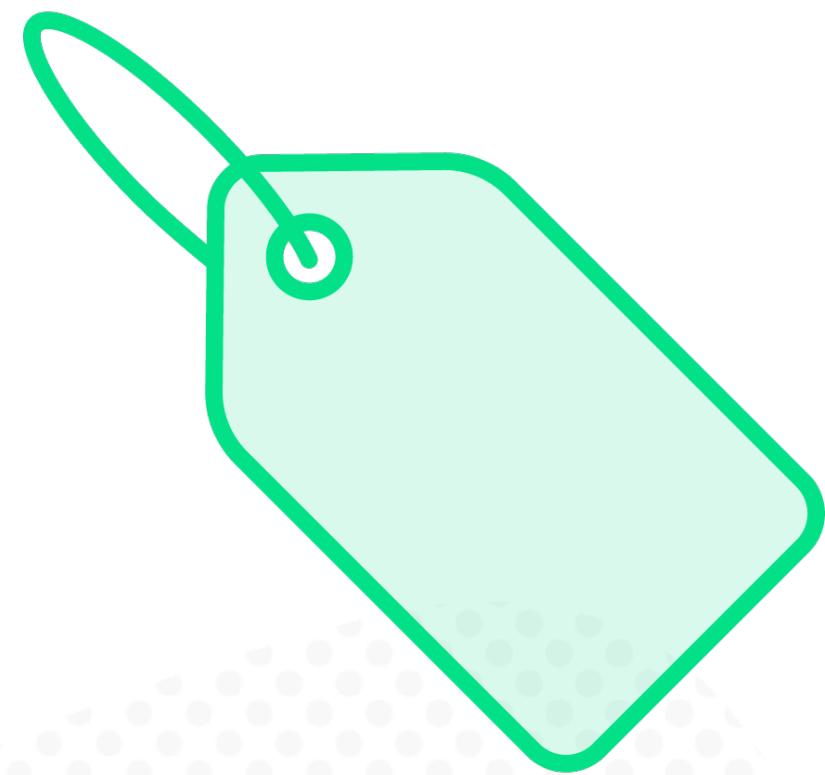
The Price and Currency Types

Item price
Currency (Euro, Dollar or Pound)

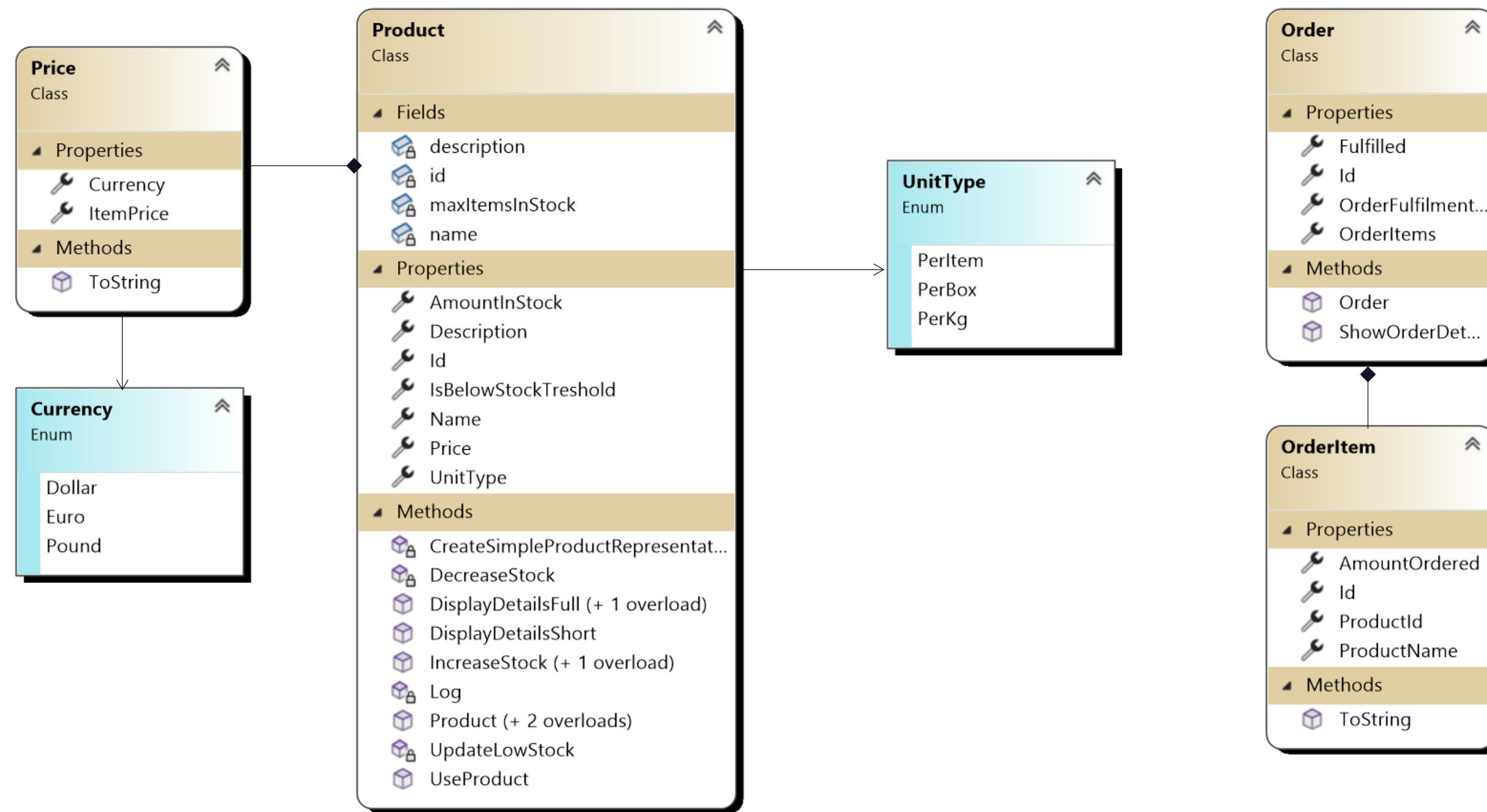


The “Unit Type” Type

Can be “per item”, “per kilogram” or “per box”



A First Class Diagram



“We have enough information to start coding. Let’s do this!”



Up Next:

Creating the Classes

