Exercise 1.5: Object-Oriented Programming in Python

Learning Goals

- Apply object-oriented programming concepts to your Recipe app

Reflection Questions

1. In your own words, what is object-oriented programming? What are the benefits of OOP?

OOP creates objects from classes which is beneficial for creating clear and organized code. This makes it so you do not have to rewrite code every time a new object is introduced. OOP makes the code easier to read and more efficient.

2. What are objects and classes in Python? Come up with a real-world example to illustrate how objects and classes work.

Objects are variables and methods, whereas classes are a layout for that object. If recipe is the class, then you can create different parameters or objects to fit into that class. Objects could include ingredients, cooking time, and difficulty.

3. In your own words, write brief explanations of the following OOP concepts; 100 to 200 words per method is fine.

Method	Description
Inheritance	This is when you inherit traits from one class to another. Properties from a parent class can be shared with an inherited class to avoid repeating code over and over in different classes.
Polymorphism	This is where a given data attribute or method has the same name across different classes or data types, but performs different operations depending on where it was defined.
Operator Overloading	When special operators don't work in custom classes, they need to be overridden with the process operator overloading. It requires you to define a function with a name that Python already reserves for your operator, and surrounding it with double underscores like __add__().