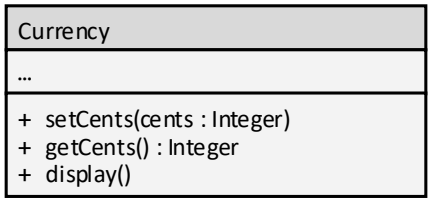
CSE 230 Problem Set 05

Problem 21.1: Currency

Consider the following scenario:

> A financial package uses a `Currency` class to manage money. This class cannot have rounding errors so, for fidelity reasons, uses an integer as the internal representation. Note that the software only works with dollars and cents, does not need to make coin change or anything like that. The software would add a dollar to a total, or find the difference between two values.

Consider the following class diagram



Classify the level of convenience for this class. Justify your answer.

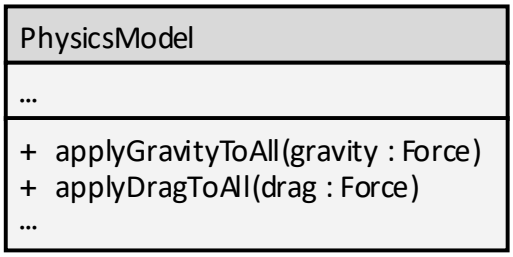
The level of convenience for this class is straightforward, as the user would have to convert to cents if dealing with more than 100 cents. If a user wanted to store $2.50, they would need to convert it on their own.

Problem 21.2: Physics Model

Consider the following scenario:

> A video game uses one class to manage all applications of physics. Everything in the game uses a `Force` object to monitor force: force due to gravity, force due to thrusting, force due to drag, and force due to collisions. Note that the `Force` class is used throughout the project and we can assume that it is fully flushed out and has seamless convenience.

Consider the following class diagram:



Classify the level of convenience for this class. Justify your answer.

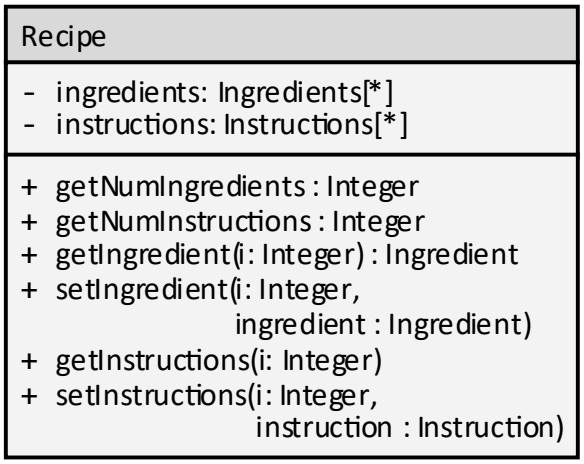
The convenience for this class is easy as there is no other functionality the user has to implement.

Problem 21.3: Recipe I

Consider the following scenario:

> A recipe program has a scaling option where the user can specify the number of servings needed for a given meal. For example, you should be able to scale a taco recipe originally designed for three people to accommodate a party of seven.

Consider the following class diagram:



Classify the level of convenience for this class. Justify your answer.

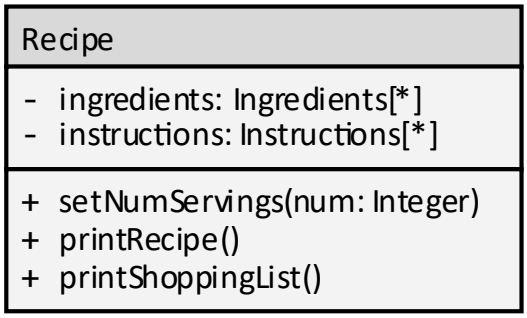
The convenience for this class is convoluted as it does not have the implantation to scale a recipe to accommodate for a larger/smaller party size. The client would have to write extra code to allow this class to function correctly.

Problem 21.4: Recipe II

Consider the following scenario:

> A recipe program has a scaling option where the user can specify the number of servings needed for a given meal. For example, you should be able to scale a taco recipe originally designed for three people to accommodate a party of seven.

Consider the following class diagram:



Classify the level of convenience for this class. Justify your answer.

The level of convenience for this class is seamless as it handles all data for the client. The number of servings is able to be set, and a recipe and a shopping list are both printed.