Types of Relationships

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Association

Association happens when an object has a method that interacts with another object, i.e. the parameter to a method of an object is an object too.

Examples:

Boy eats fruit.

Soldier equips weapon.

UML Notation

Association

UML Notation

Association

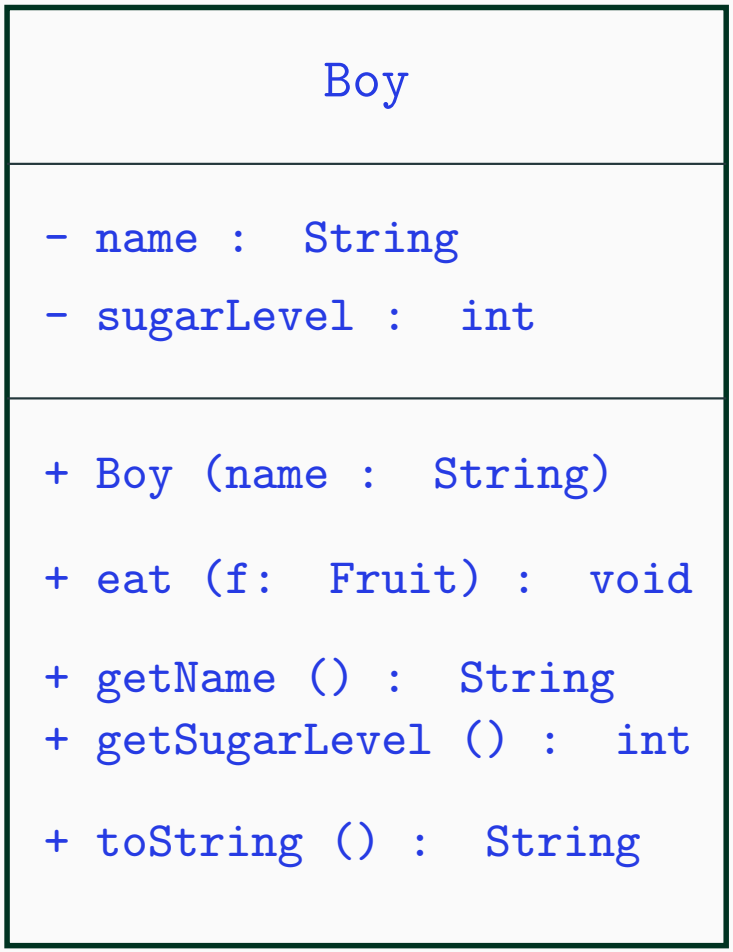
1. The arrow points from the object who is initiating the interaction to the object who is being interacted with.

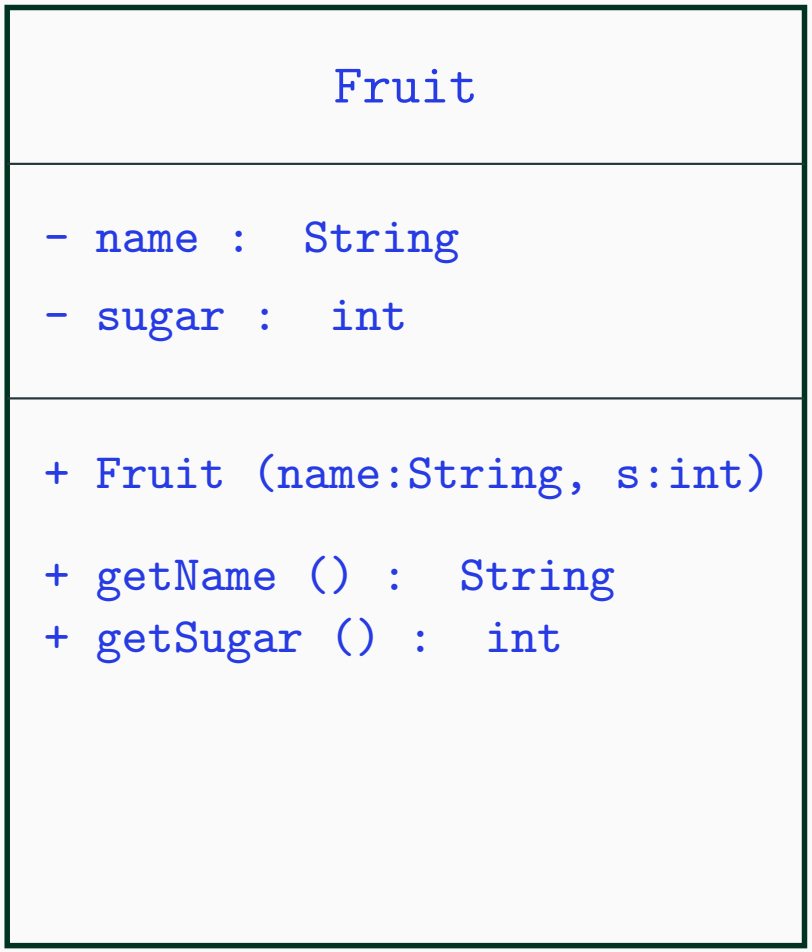
UML Notation

Association

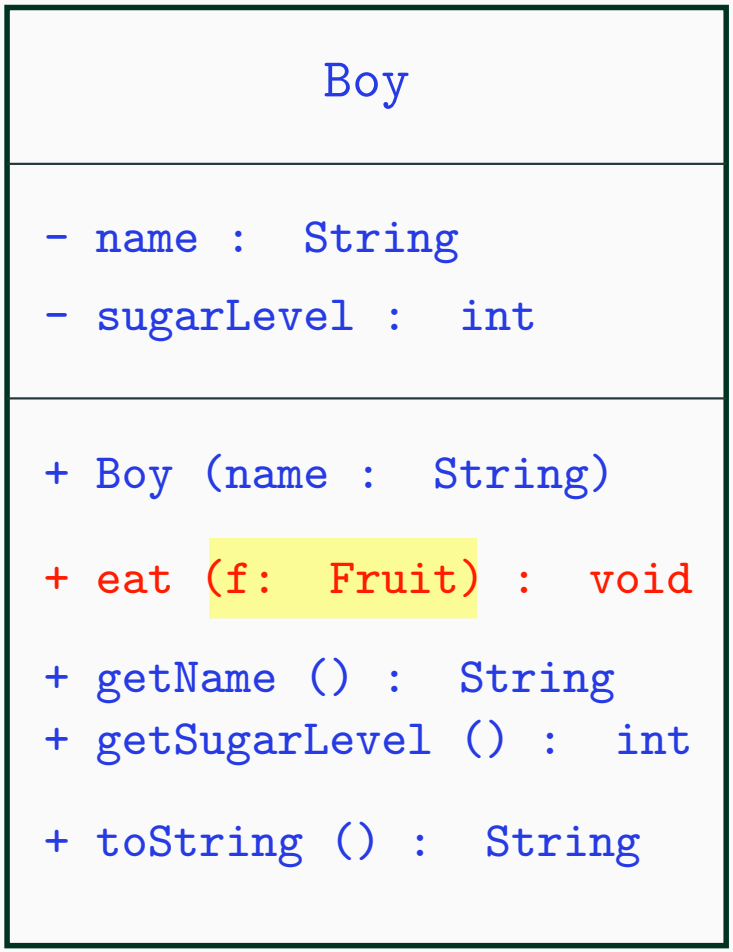
1. The arrow points from the object who is initiating the interaction to the object who is being interacted with.
2. There should be a **label** describing the kind of association.

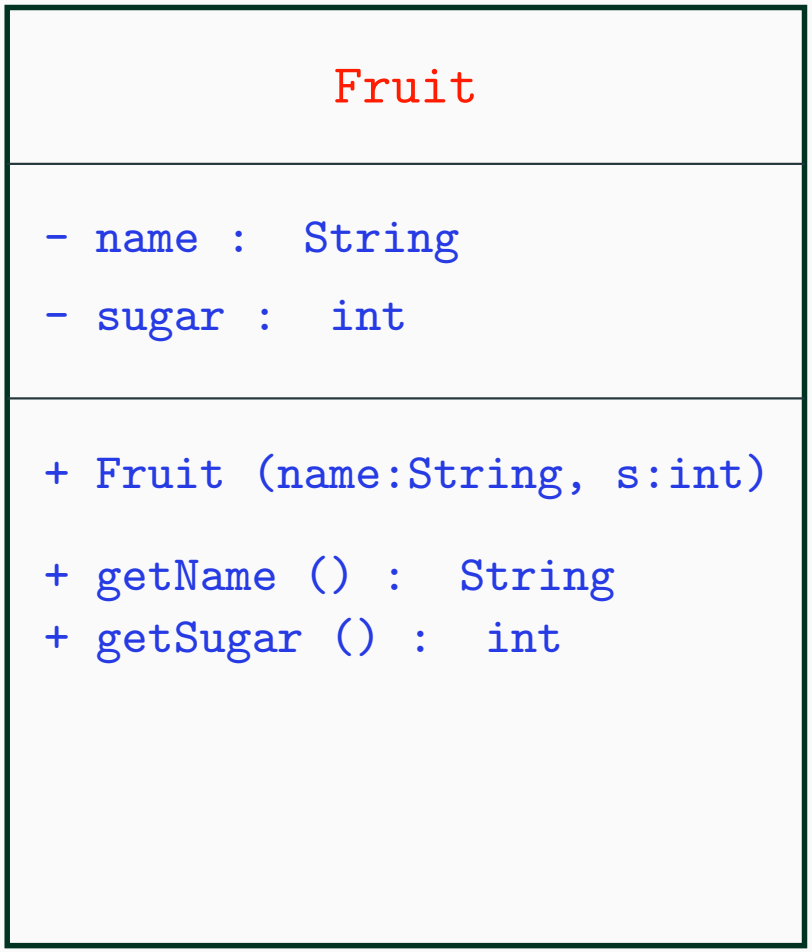
Boy Eats Fruit





Boy Eats Fruit





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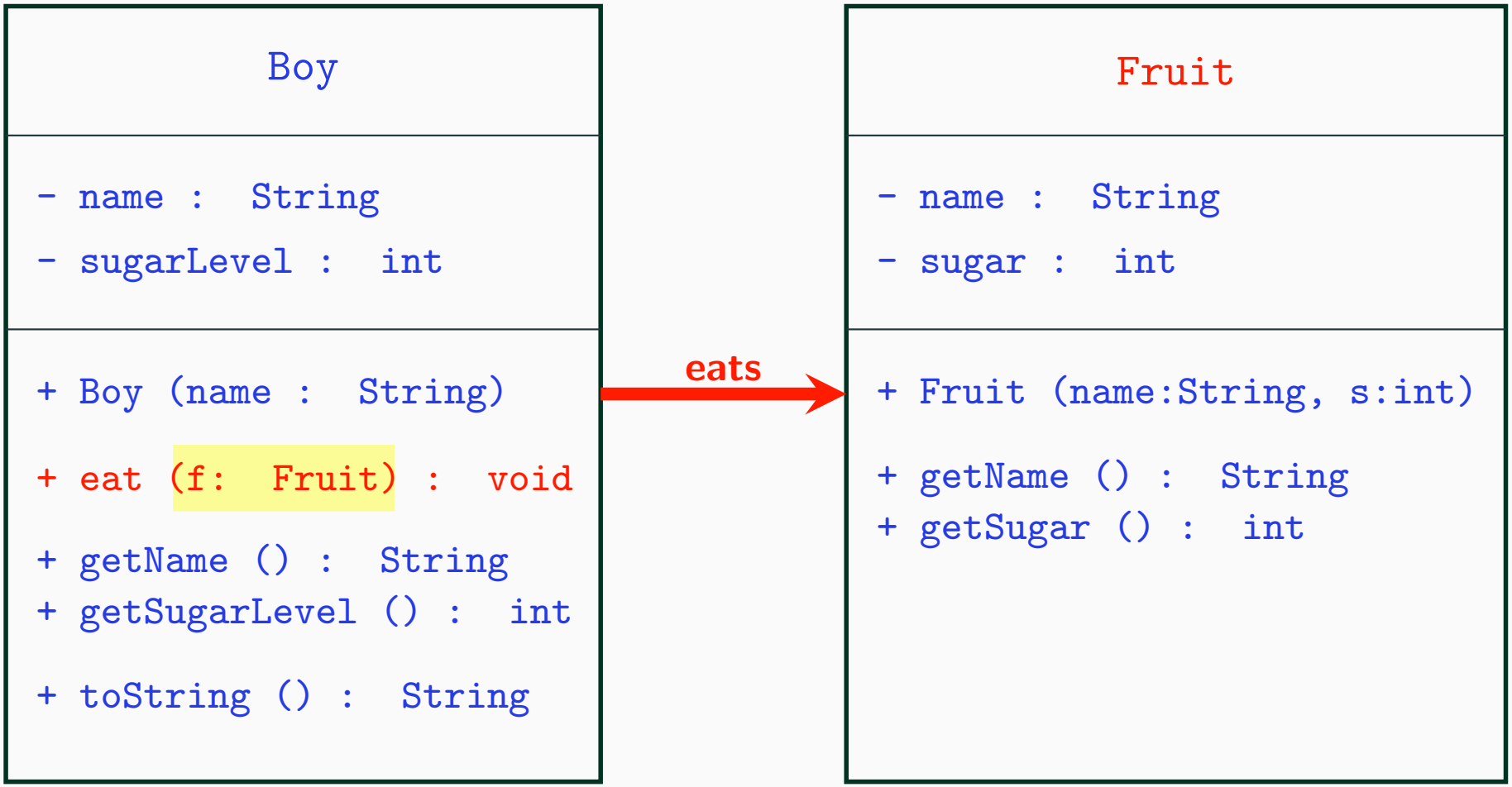


Aggregation

Aggregation happens when an object is owned by another object, and that object is **assigned** to become part of that object, i.e. one of the properties of an object is another object.

Examples:

Shopping cart has products.

Person has a spouse.

UML Notation

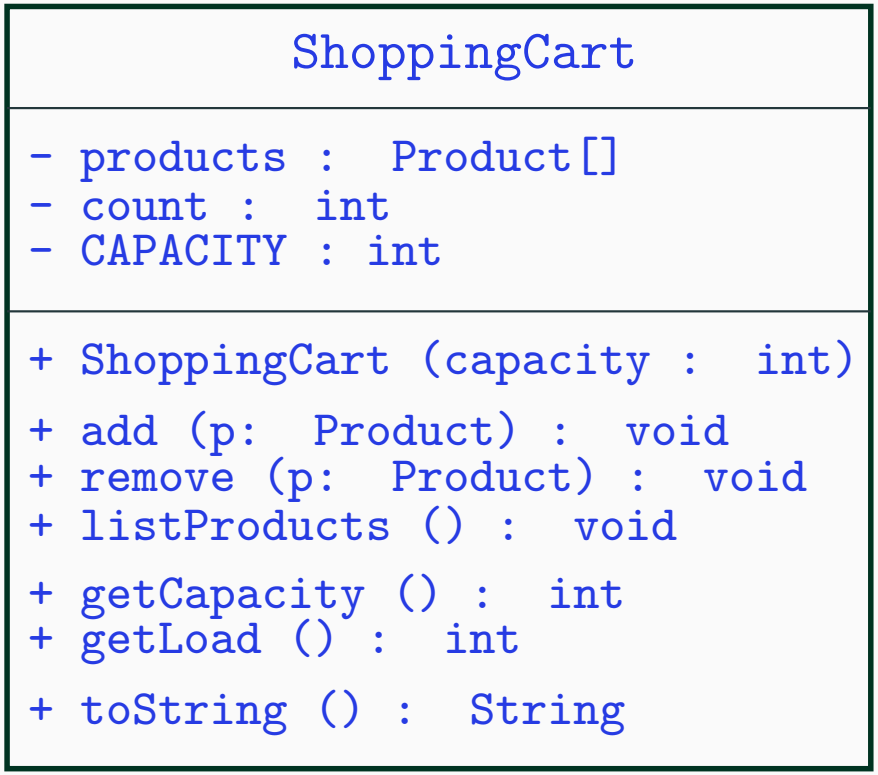
Aggregation

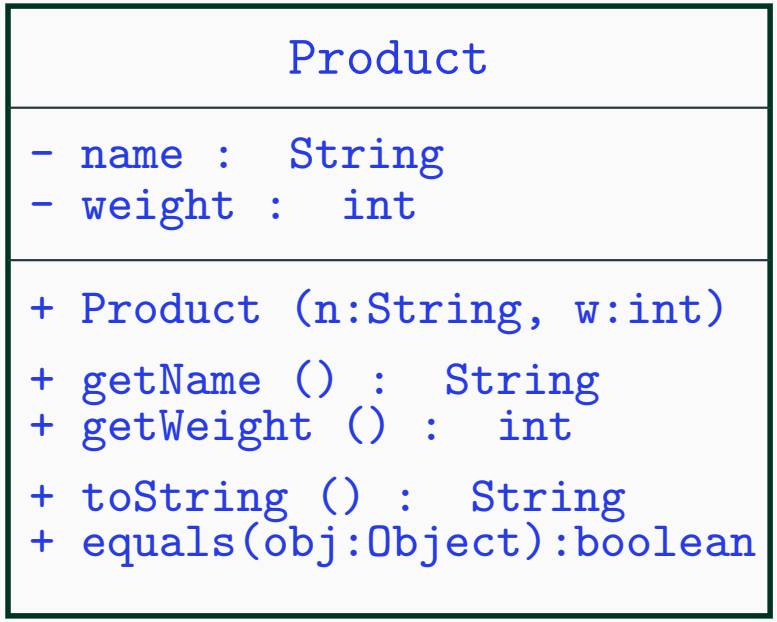
UML Notation

Aggregation

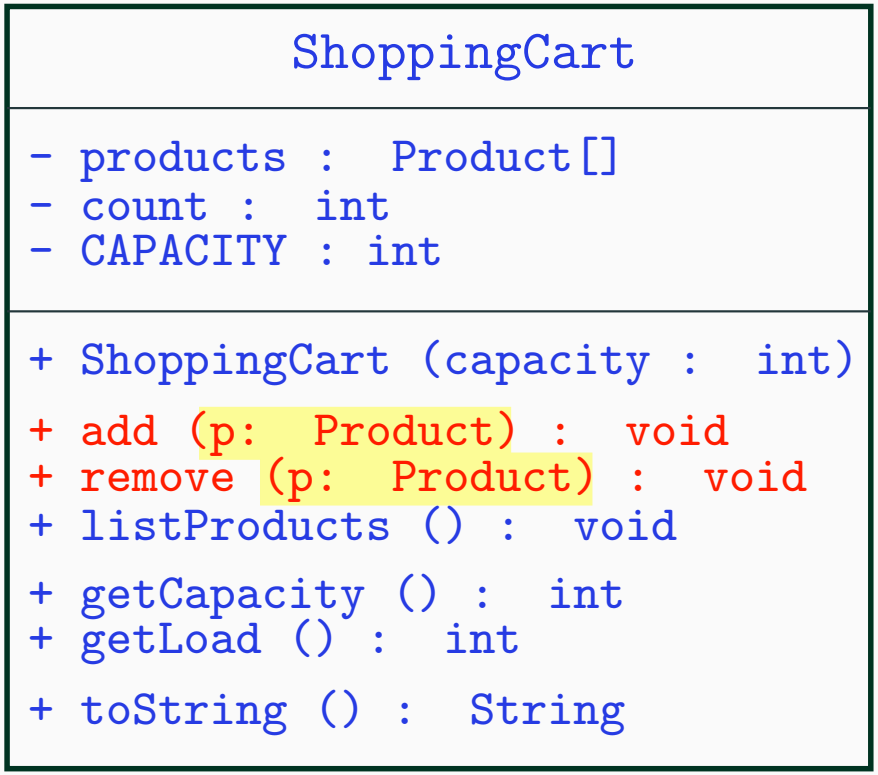
The diamond should be **beside the owner** in the relationship.

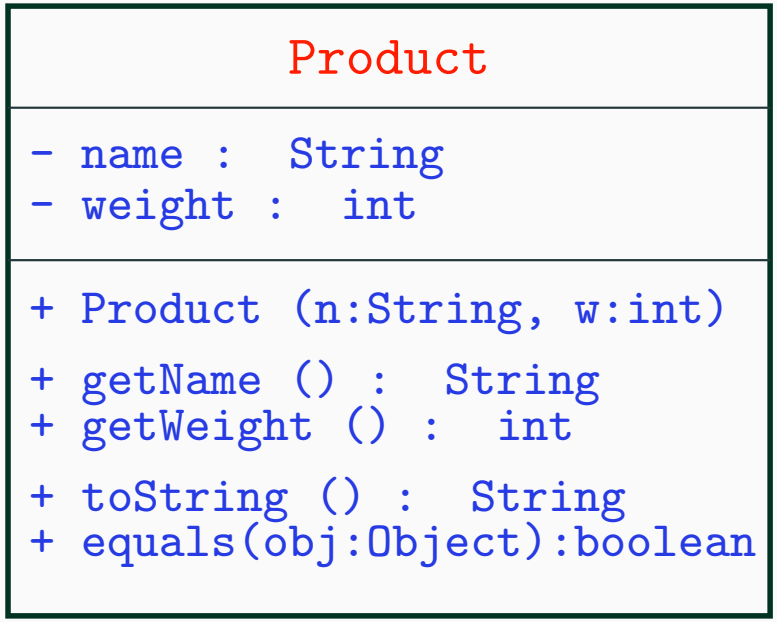
Shopping Cart



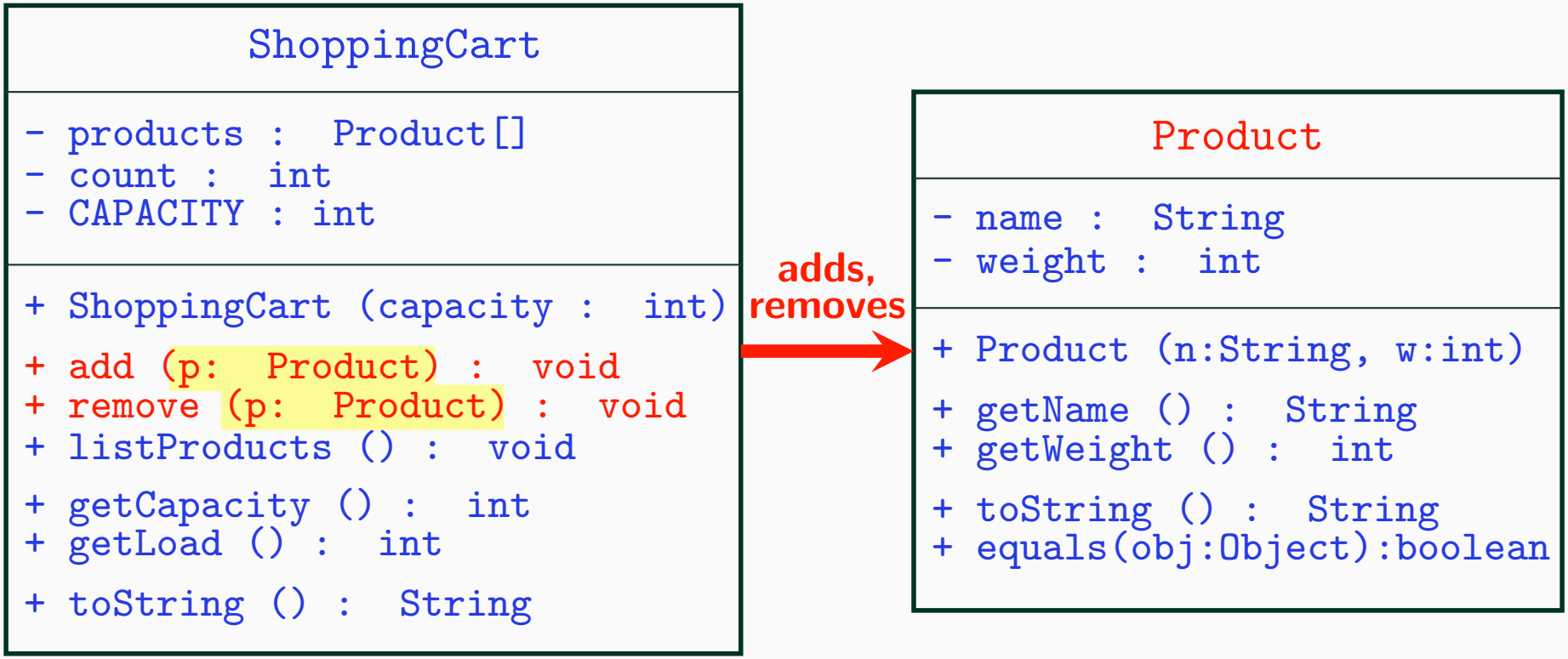


Shopping Cart

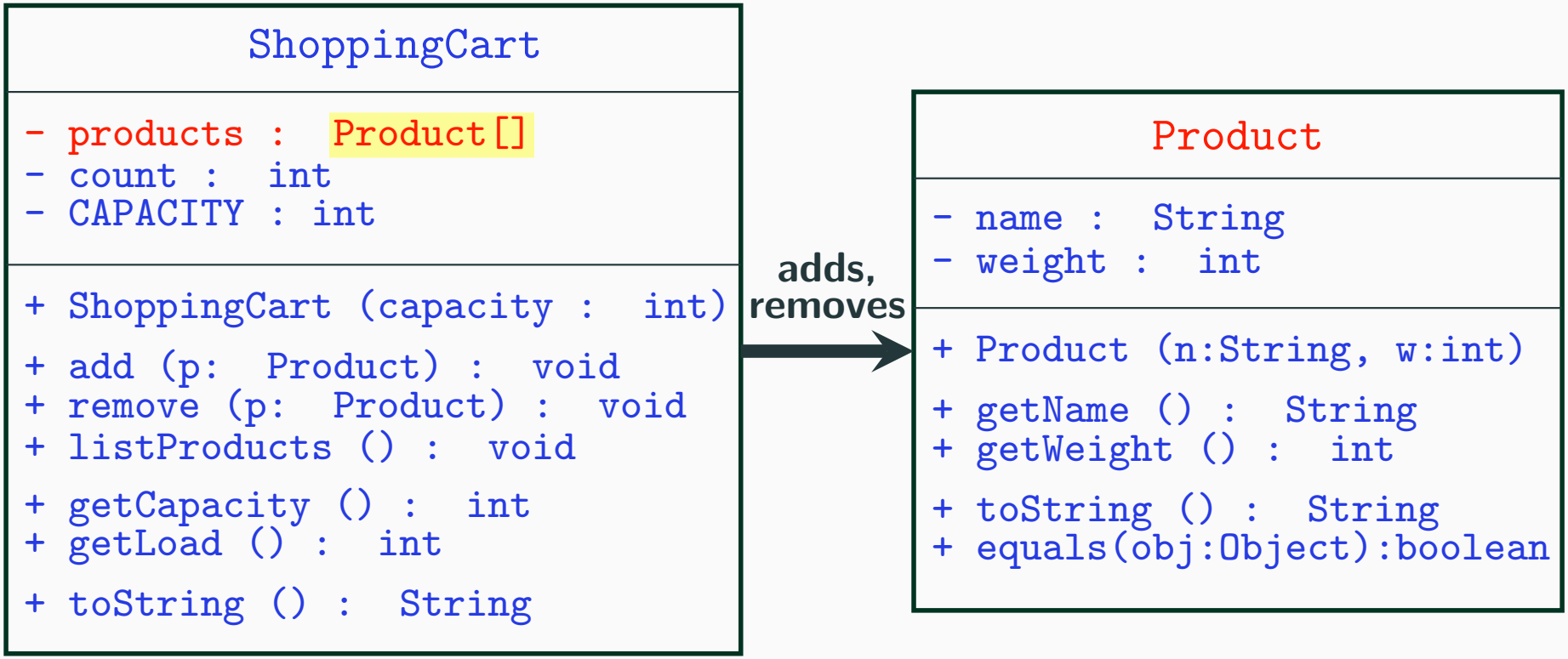




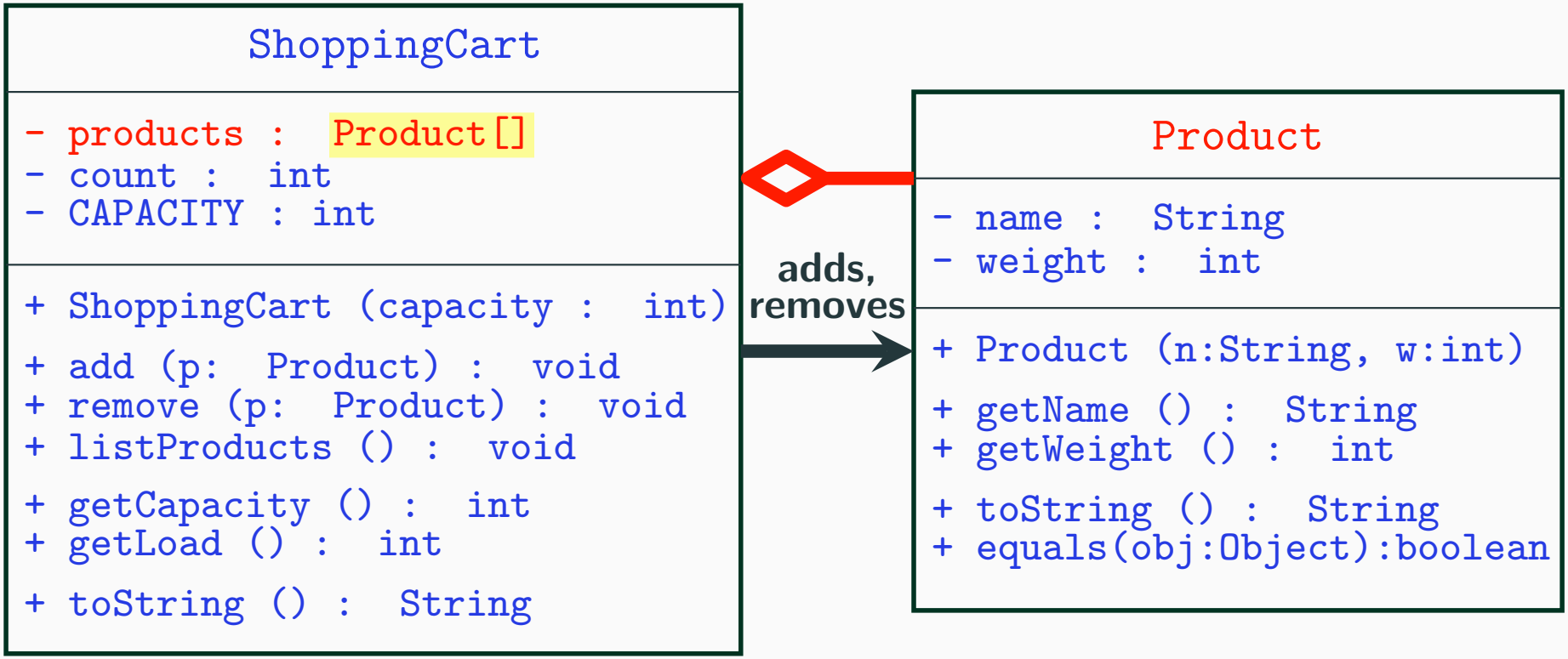
Shopping Cart



Shopping Cart



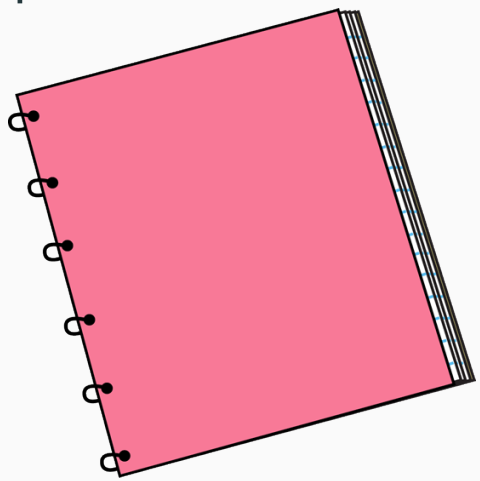
Shopping Cart



Composition

Composition happens when an object is owned by another object, and that object is **an integral part of** that object, i.e. one of the properties of an object is another object, and it is **being built or instantiated inside that object**.

Example:



Notebook has pages,
and the pages are an integral part of the notebook.

UML Notation

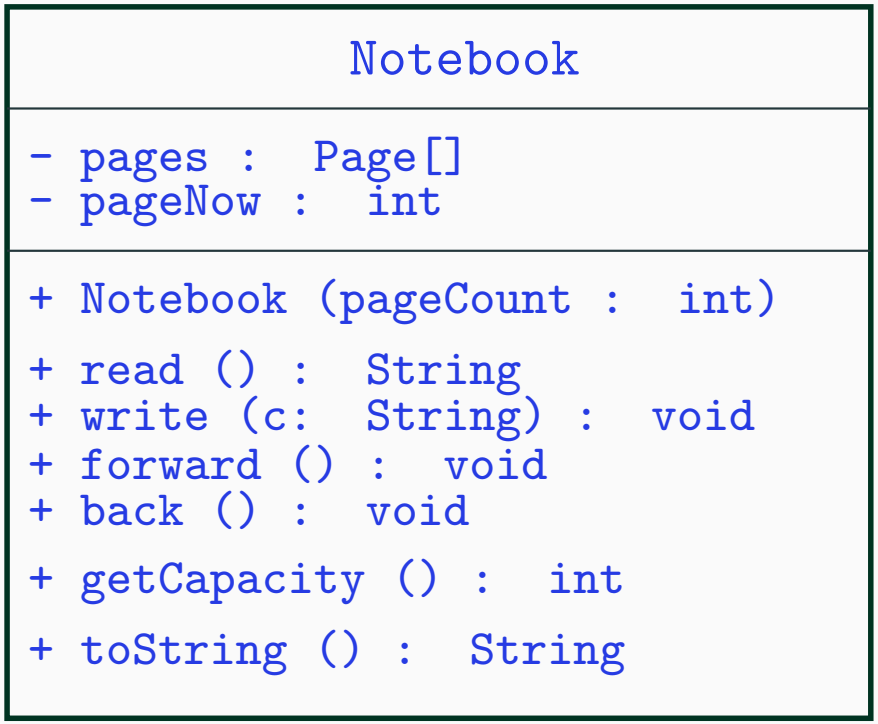
Composition

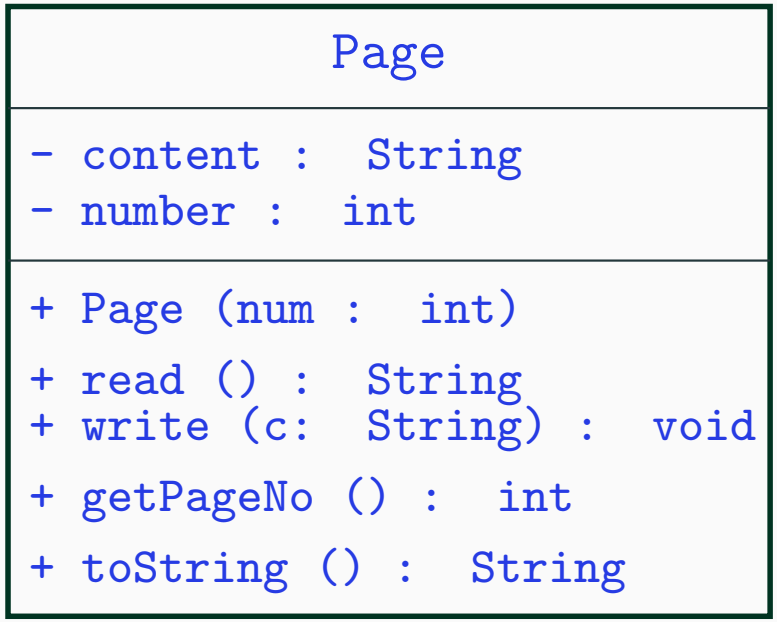
UML Notation

Composition

The diamond should be **beside the owner** in the relationship.

Notebook


Notebook
- pages : Page[]
- pageNow : int
+ Notebook (pageCount : int)
+ read () : String
+ write (c: String) : void
+ forward () : void
+ back () : void
+ getCapacity () : int
+ toString () : String


Page
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- number : int
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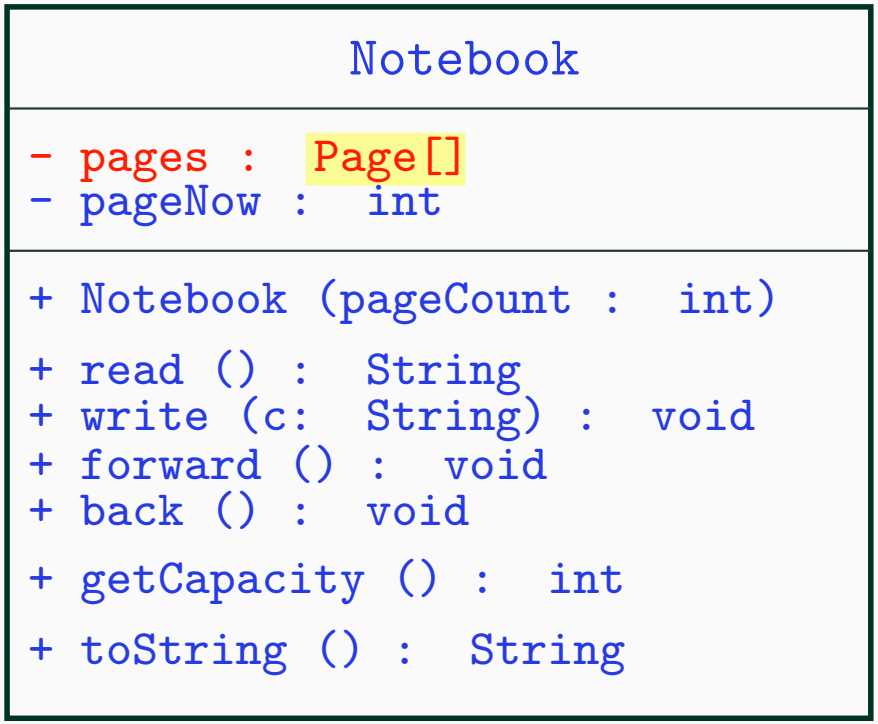
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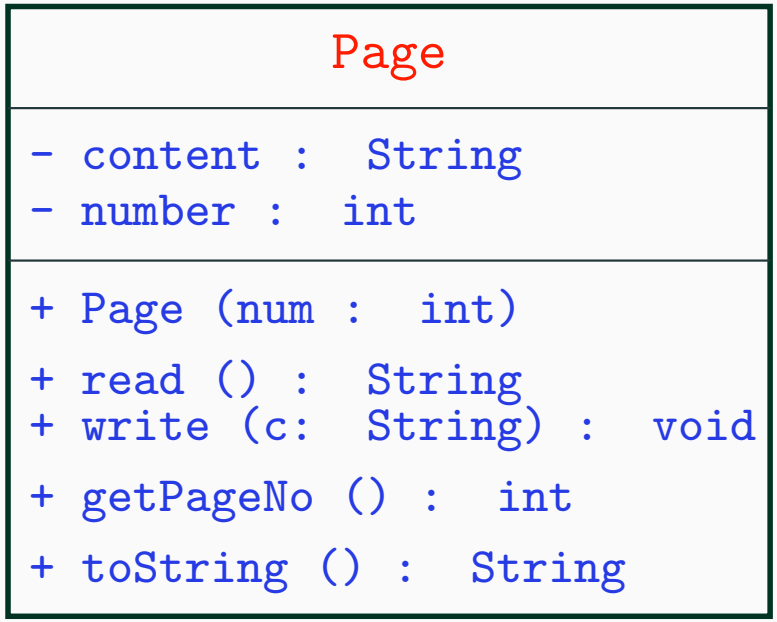
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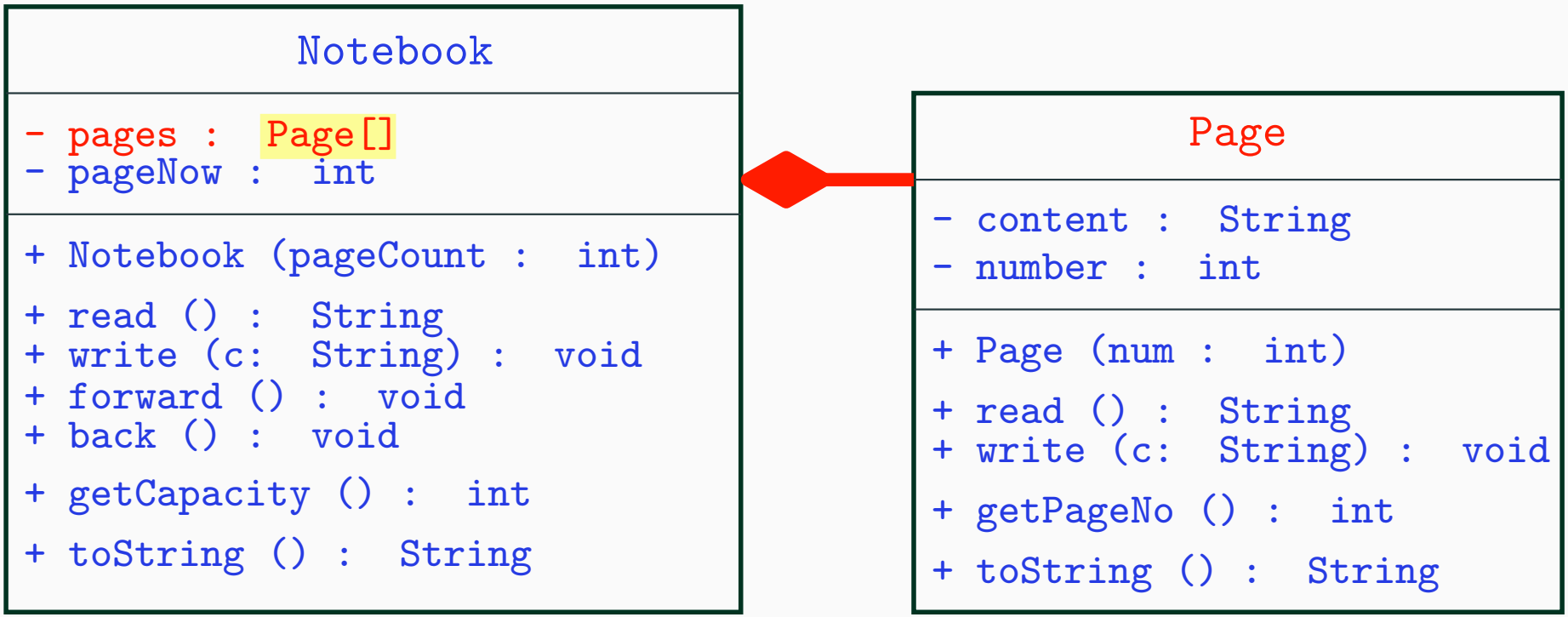
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☺ **Thank you!** ☺