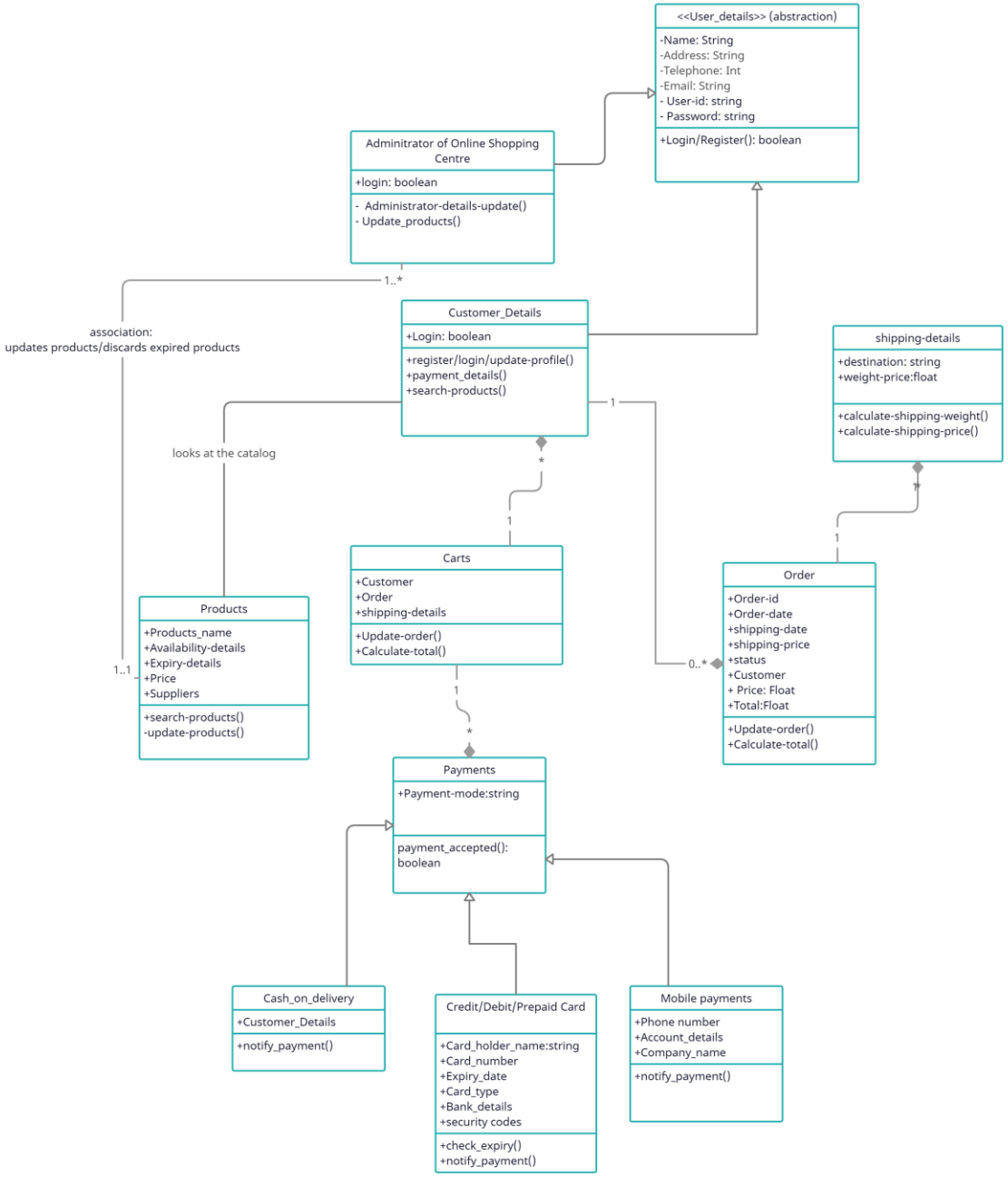
UNIT 3: PRACTICAL ACTIVITY OBJECT-ORIENTED DESIGN WITH UML

Attempt 1: Unit 3 Practical exercise

- I've used the app 'creately' to create an object model to represent an online supermarket: https://app.creately.com/diagram/Vgtclz6sb2O/edit
- The model, sources, explanations are on the following pages.



Attempt 1: The object-oriented model of an online supermarket.

My sources...

- Buckley, O. (2021) Unit 3: Object-Oriented Information Systems, Lecture Notes, Object-oriented Information Systems OOIS_PCOM7E, University of Essex Online, delivered August 2021
- Lucidchart (July 21, 2017) "UML Class Diagram Tutorial". Available from: [Accessed 5 September 2021]
- Philips, D. (2018) « Chapter 1: Object-Oriented Design », *Python 3 Object-Oriented Programming*, Birmingham: Packt Publication. 3rd Edition.
- To watch: https://www.youtube.com/watch?v=WnMQ8HlmeXc

UML Class Diagram Tutorial

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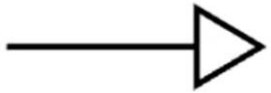
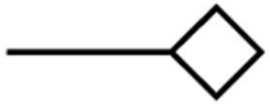
Relationships

Inheritance 

Subclasses inherit all the attributes of the superclass (e.g no need to repeat name, id, address etc.

Association

Simple line between two classes, no dependency between them (e.g otters eat sea urchins);

Aggregation 

Can exist without the other class (in contrast to composition?)

Composition 

Composition: when a child object cannot exist without the parent object. Eg. Destroying the customer will remove all orders....
Use closed diamond to represent it

The symbols used to represent the relationships:

Abstraction (linked to inheritance)
DRY=Do not repeat yourself
Put <<....>> or italics to the class/instance that other classes will inherit from

UML Class Diagram Tutorial

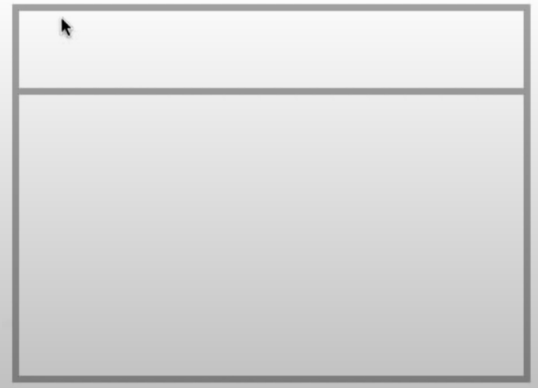
Zoo System

Example from Lucidchart (July 21, 2017) to create a class, with or without visibility

Animal
~name: string ~id: int ~age: int
~setName() ~eat()

Visibility

- \- private
- \+ public
- \# protected
- ~ package/default



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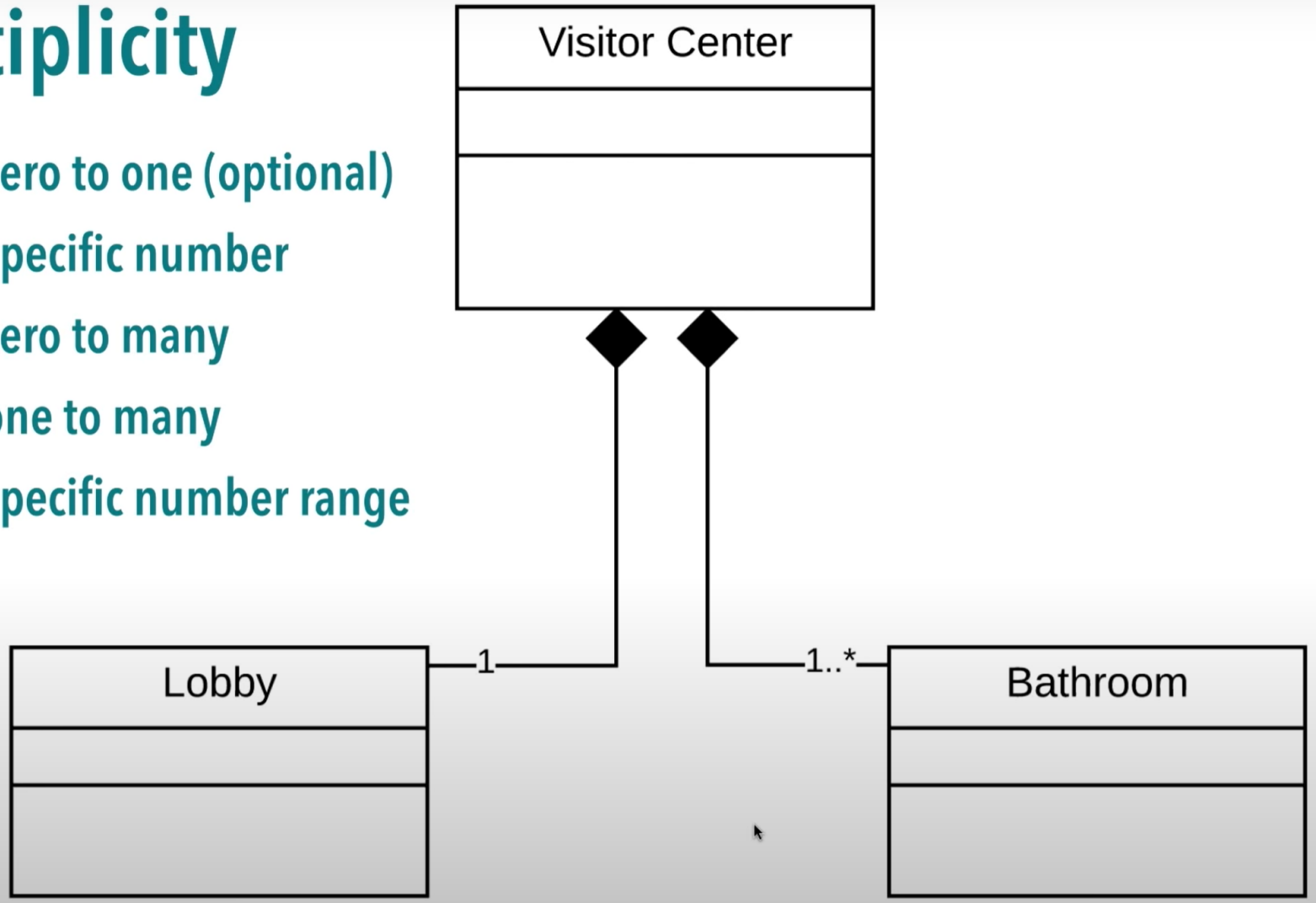
Multiplicity

0..1	zero to one (optional)
n	specific number
0..*	zero to many
1..*	one to many
m..n	specific number range



Unit 3: Practical Activity Object-oriented Design: Brainstorming Session…

Use users (superclass) – then 2 subclasses (admin+customers)

Some of the ideas I jotted down before creating the model.