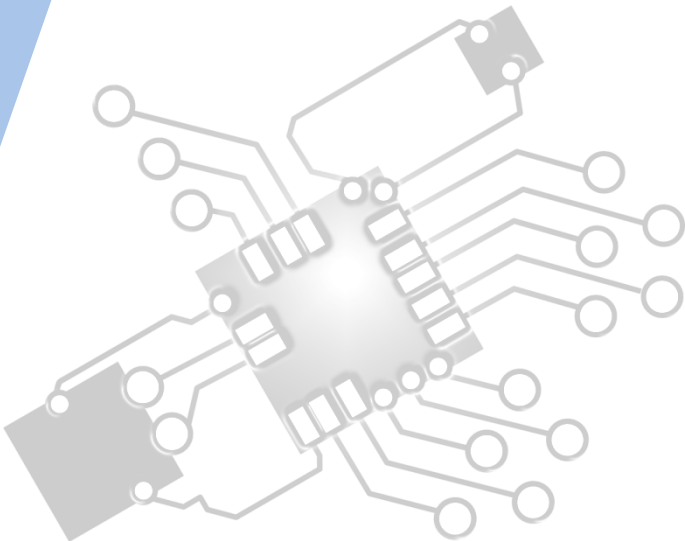




Objects as a programming concept

IB Computer Science



*Content developed by
Dartford Grammar School
Computer Science Department*



HL Topics 1-7, D1-4



1: System design



2: Computer Organisation



3: Networks



4: Computational thinking



5: Abstract data structures



6: Resource management



7: Control



D: OOP

HL & SL D.1 Overview

D.1 Objects as a programming concept

D.1.1 Outline the general nature of an object

D.1.2 Distinguish between an object (definition, template or class) and instantiation

D.1.3 Construct unified modelling language (UML) diagrams to represent object designs

D.1.4 Interpret UML diagrams

D.1.5 Describe the process of decomposition into several related objects

D.1.6 Describe the relationships between objects for a given problem

D.1.7 Outline the need to reduce dependencies between objects in a given problem

D.1.8 Construct related objects for a given problem

D.1.9 Explain the need for different data types to represent data items

D.1.10 Describe how data items can be passed to and from actions as parameters



1: System design

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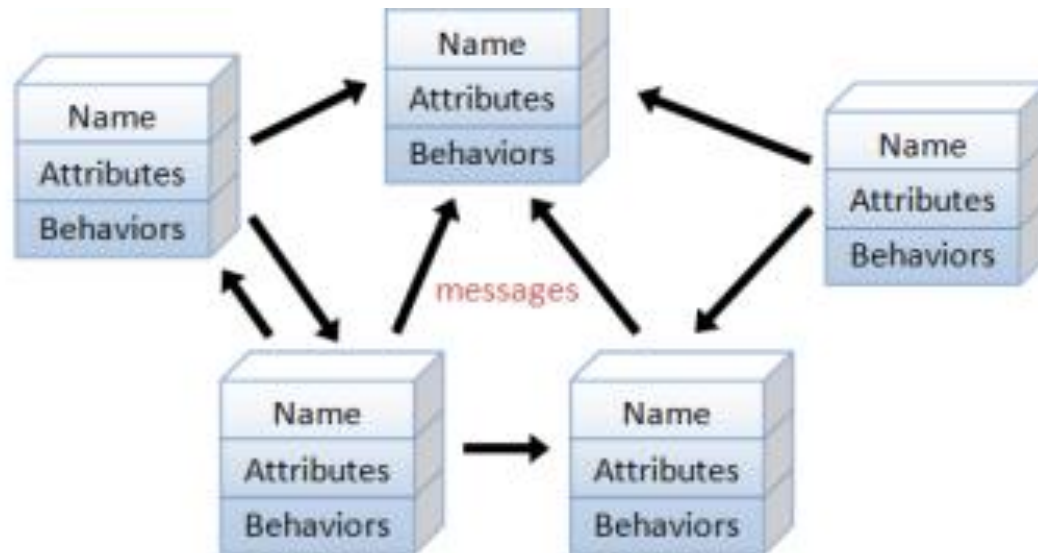
D: OOP





Topic D.1.8

Construct related objects for a given problem





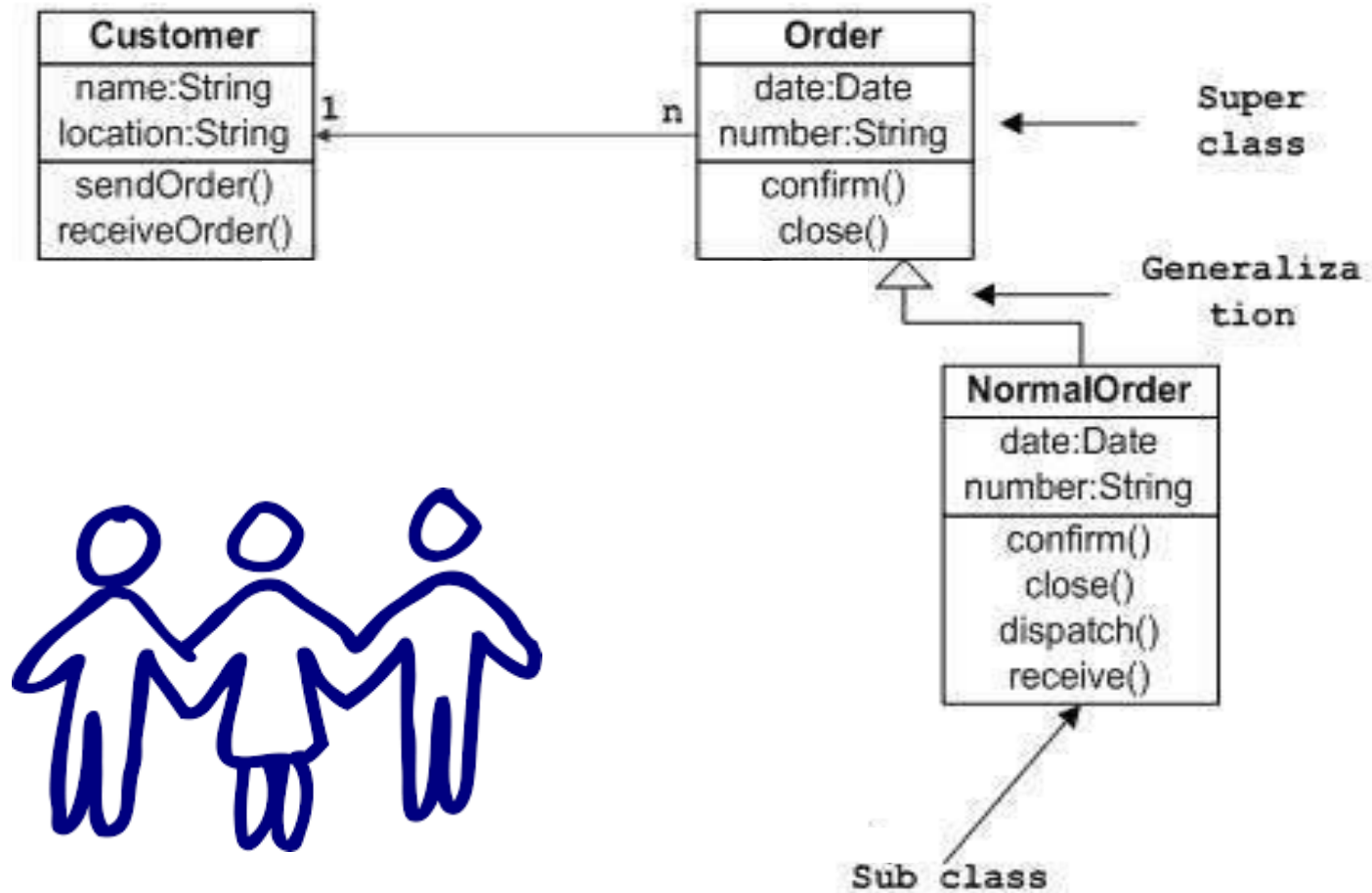
Exam note!

The **official teacher guidance** says:

*In examinations, problems will require students to construct definitions for **no more than three objects** and to explain their **relationships** to each other and other to any additional classes defined by the examiners.*

three

Three class UML example



Possible problem



- You work for a music shop: **Take Note**
- It has two types of **employees**: **managers** and **office staff**
- The managers have all the same states as the office staff, but an additional '*responsibility*' state
- The TakeNote driver class has two **linked lists**: one of managers and another of office staff

Construct a UML class diagram to show the **relationships** between these classes

Possible solution?

