SUPCOM

Stockholms universitet

Managing Problematic Modelling Situations with UML Class Diagram

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Problematic modelling situation

Attributes have multiplicity as well

Problem:

Associations have multiplicity, but attributes have multiplicty as well.

We have assumed that the multiplicity for all attributes are 1..1.

But how do we handle a situation when this is not the case?

Attibutes and Associations

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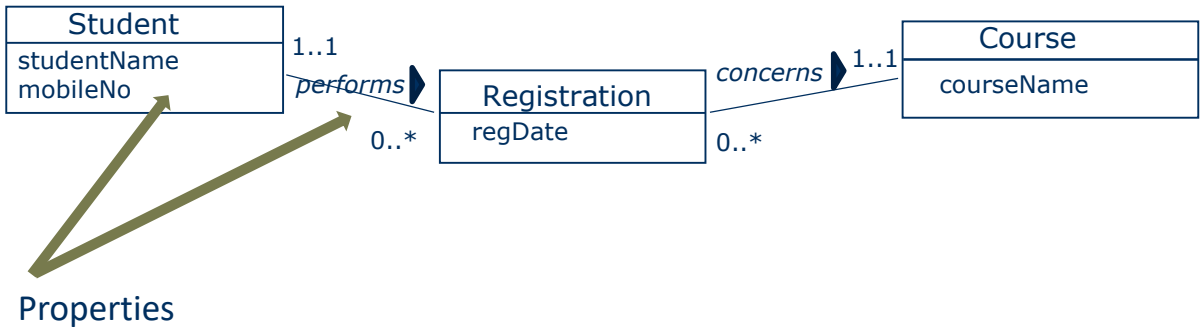


All properties in UML have multiplicity

- Moreover, **all properties in a UML class diagram have multiplicity**
- **Hence, both attributes** and **associations have multiplicity**

Attibutes have multiplicity

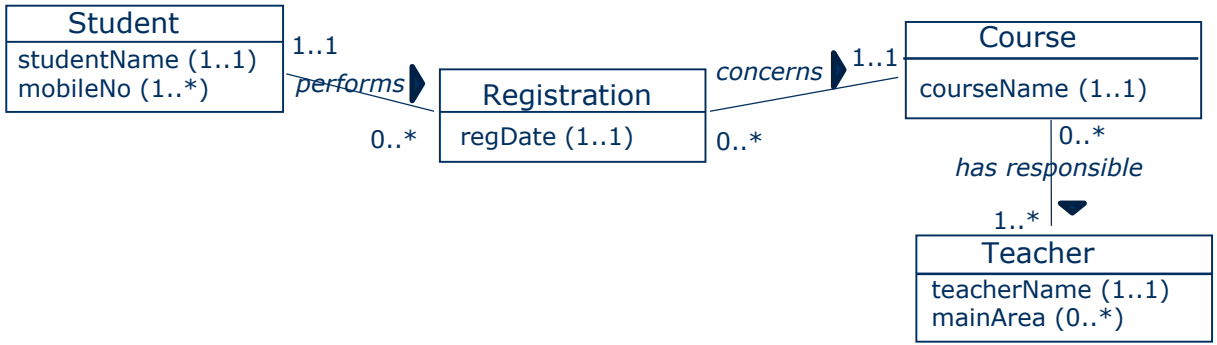
- **Attributes have multiplicity as well**
- In this course, **we assume that the multiplicity for attributes are 1..1**

Attibutes have multiplicity

- In this course, **we have assumed that the multiplicity for attributes are 1..1**
- **If not, we need to transform the diagram** so the multiplicity is 1..1 for all attributes

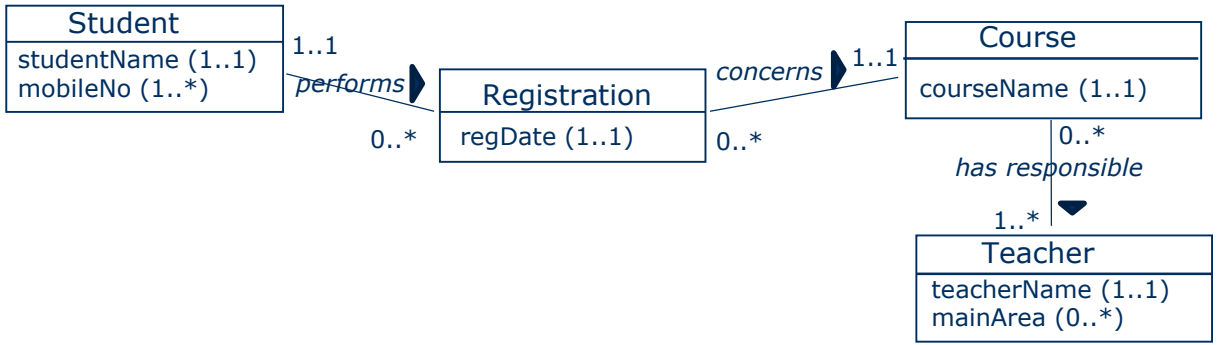
Attibutes have multiplicity

- Let us assume that the multiplicity for all attributes is not 1..1



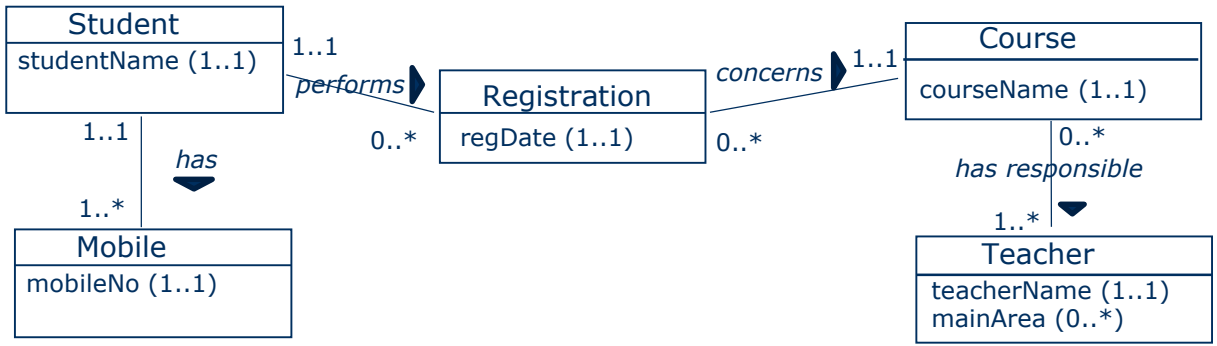
Attibutes have multiplicity

- Let us assume that the multiplicity for all attributes is not 1..1
- How can we transform the diagram so that all attributes have the multiplicity 1..1?



Attibutes have multiplicity

- How can we transform the diagram so that all attributes have the multiplicity 1..1?
- Transform the attribute to a new class (see the class Mobile)



Attibutes have multiplicity

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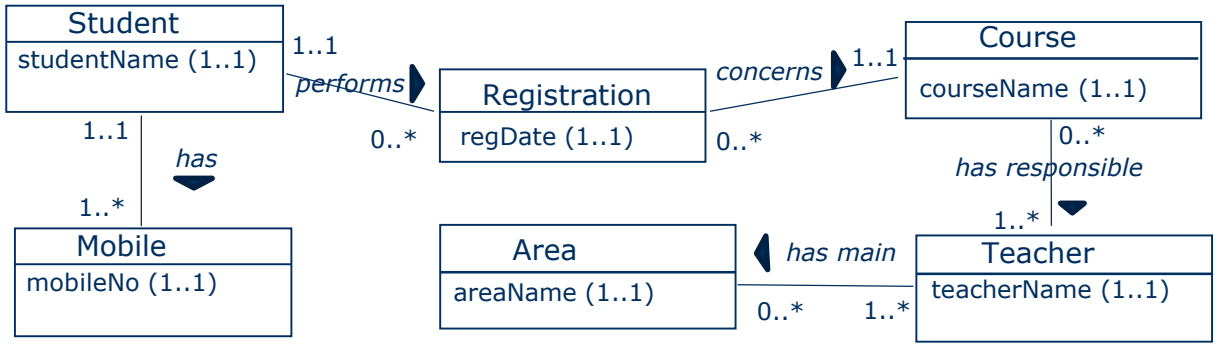
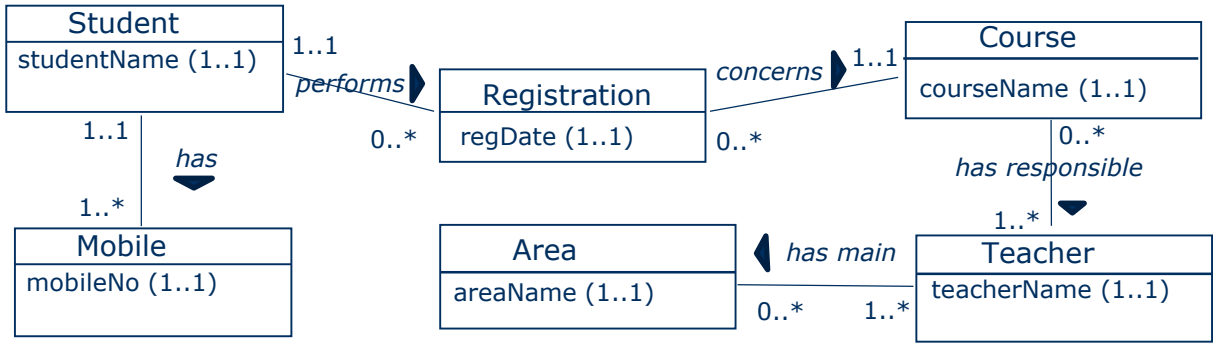


Why this rules?

- Rule: All attributes in a class diagram should have the multiplicity 1..1
- Rule: If not all attibutes in a class diagram have the multiplicity 1..1, transform the diagram so all attributes have the multiplicity 1..1



In this module

- In this module, we assume that all attributes in a class diagram have the multiplicity 1..1
- Therefore, we do not need to show the multiplicity for the attributes