

# UML Class Diagrams

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COP3330 - Fall 2006  
University of Central Florida

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## Outline

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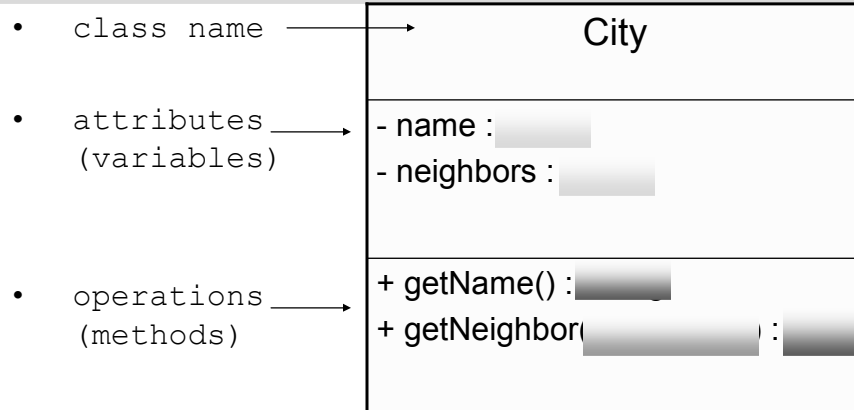
- UML overview
- A Class
- Extends (is-a)
- has-a
- Implements

# UML Overview

- Unified Modeling Language
  - “...specifying, visualizing, constructing, and documenting...”
  - Models are very important in developing large software, especially among multiple people.
  - It is also possible to program using models themselves as a more readable language.

source: UML Tutorial - Kennesaw State OO Analysis and Design Team COP 3330 - Fall 2006

## A class



source: UML Tutorial - Kennesaw State OO Analysis and Design Team COP 3330 - Fall 2006

# A class

## Visibility:

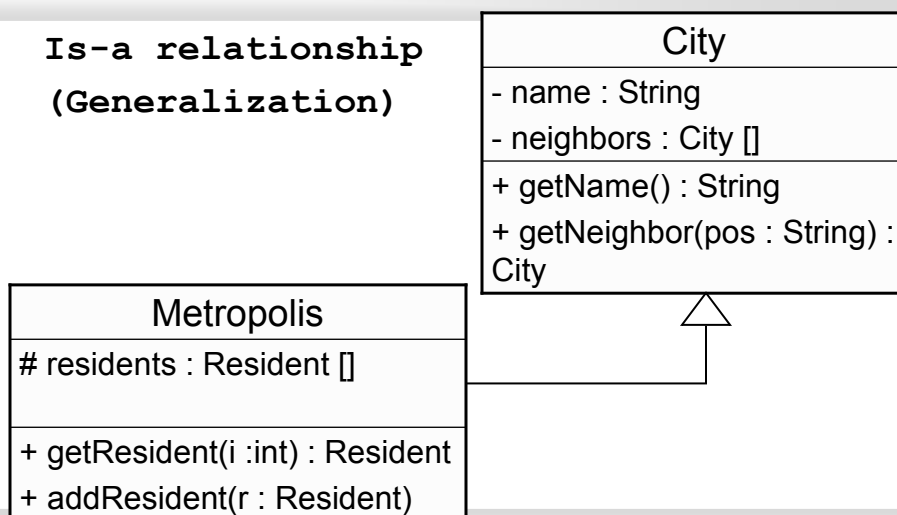
+ public  
- private  
# protected

(for attributes and operations)

source: UML Tutorial - Kennesaw State OO Analysis and Design Team COP 3330 - Fall 2006

# Extends

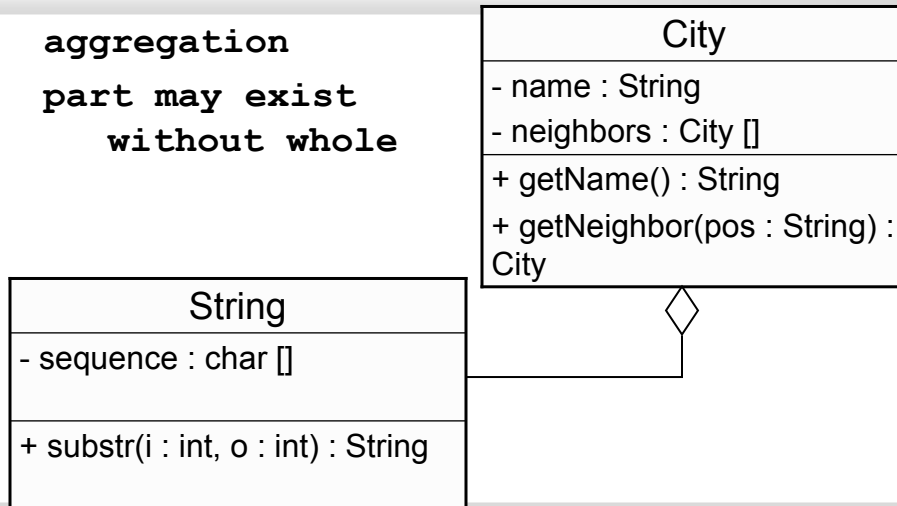
**Is-a relationship  
(Generalization)**



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# Has-a

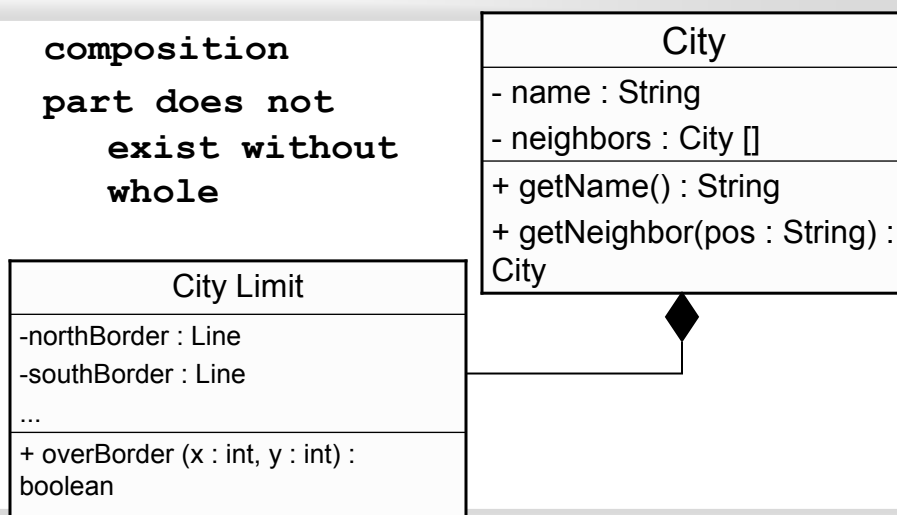
**aggregation**  
part may exist  
without whole



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# Has-a

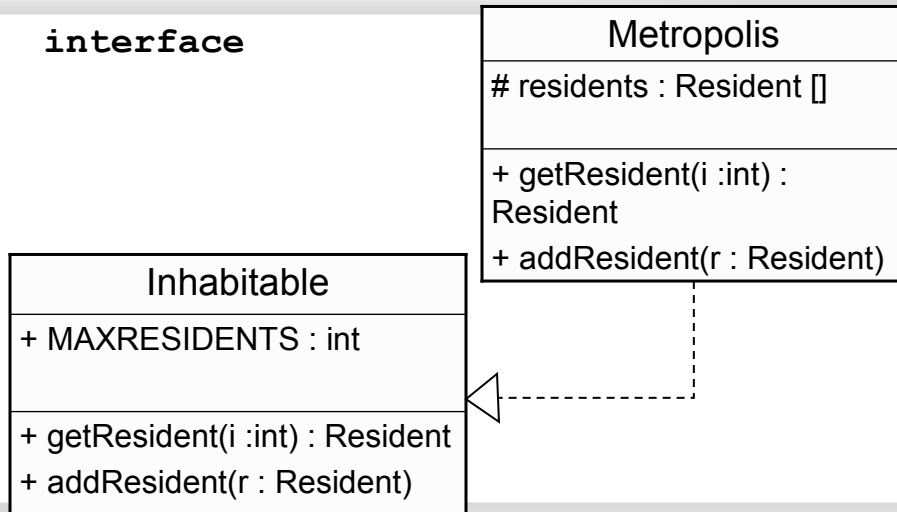
**composition**  
part does not  
exist without  
whole



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# Implements

**interface**



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