Tampereen yliopisto

Sharing data among data structures

COMP.CS.300 Data structures and algorithms 1

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Value semantics (C++)
Reference semantics (Python...)

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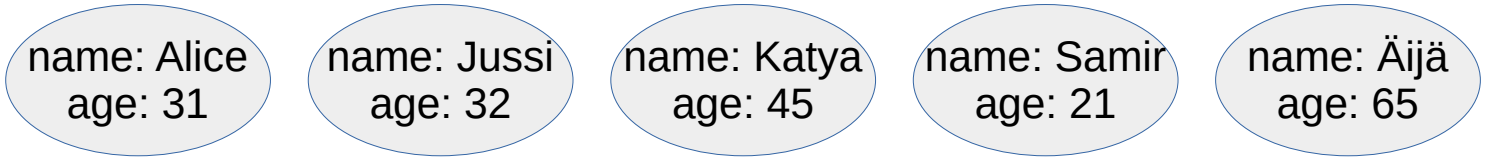
Case 1: no problems yet?


name: Alice
age: 31
name: Jussi
age: 32
name: Katya
age: 45
name: Samir
age: 21
name: Äijä
age: 65

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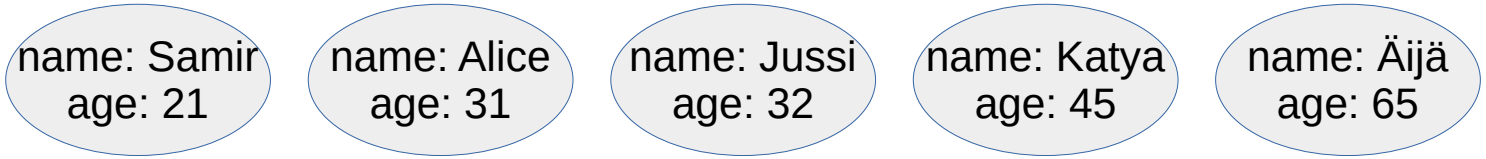
Case 2: Duplicating data?


name: Samir
age: 21
name: Alice
age: 31
name: Jussi
age: 32
name: Katya
age: 45
name: Äijä
age: 65

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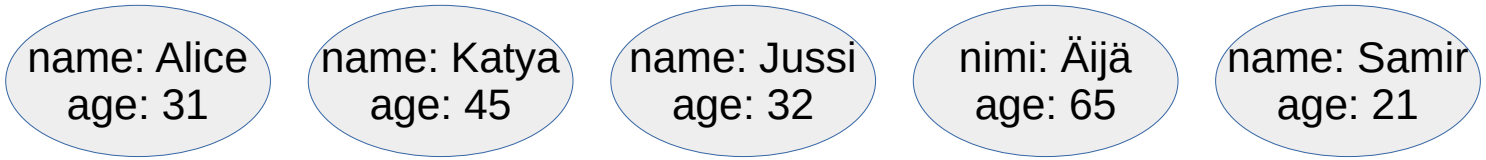
Case 3: Sharing data?


name: Alice
age: 31
name: Katya
age: 45
name: Jussi
age: 32
nimi: Äijä
age: 65
name: Samir
age: 21

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Case 4: Referring to data?

Alternatives with indirect referral

- Pointers (references)
- Smart pointers (memory management)
- Indices (if data in a vector, etc.)
- Iterators (if data in a data structure)
- *Any other way to easily access the data!*

- **(Note. danger of reference invalidation!)**