



# The Java List Interface

Topic of Software Systems (TCS module 2)

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# THE LIST INTERFACE

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## Principle

- Separate the **abstract concept of a list** and its **possible implementations**
- This video: the **abstract list concept**
- Later videos:
  - The methods list interface (requires generics)
  - Techniques to implement (dynamic) lists

# LIST PROPERTIES AND METHODS

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- A list is a data structure
  - What are the **properties of a list**?
    - Elements stored in sequence
  - What are the **queries**?
    - Empty, size, looking up elements
  - What are the **commands**?
    - Updating an element, adding, removing elements

# JAVA COLLECTIONS FRAMEWORK

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- Interfaces, implementations and algorithms to **implement collections** (sets, bags, lists, etc.)
- Various implementations **of the List interface**
  - **ArrayList**
  - **LinkedList**
  - **...**

# LIST INTERFACE (FOR A LIST OF STUDENTS)

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Queries (amongst others)

- Get the length of the list
- Test if the list is empty
- Get student in position  $i$  (index  $i$ )

Commands (amongst others)

- Add student to the end of the list
- Replace (set) student in position  $i$