

Computer Science 3A

Practical 2

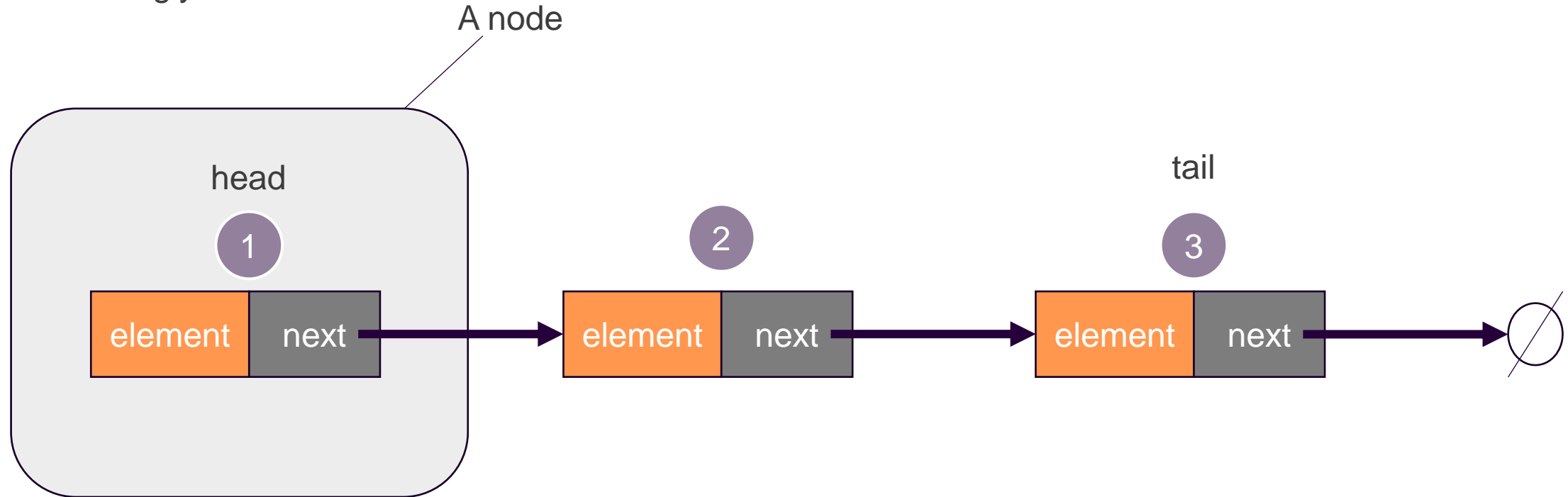
23 February 2023



UNIVERSITY
OF
JOHANNESBURG

Singly Linked Lists:

The basic Singly Linked List:



Size = 3



Looking at:

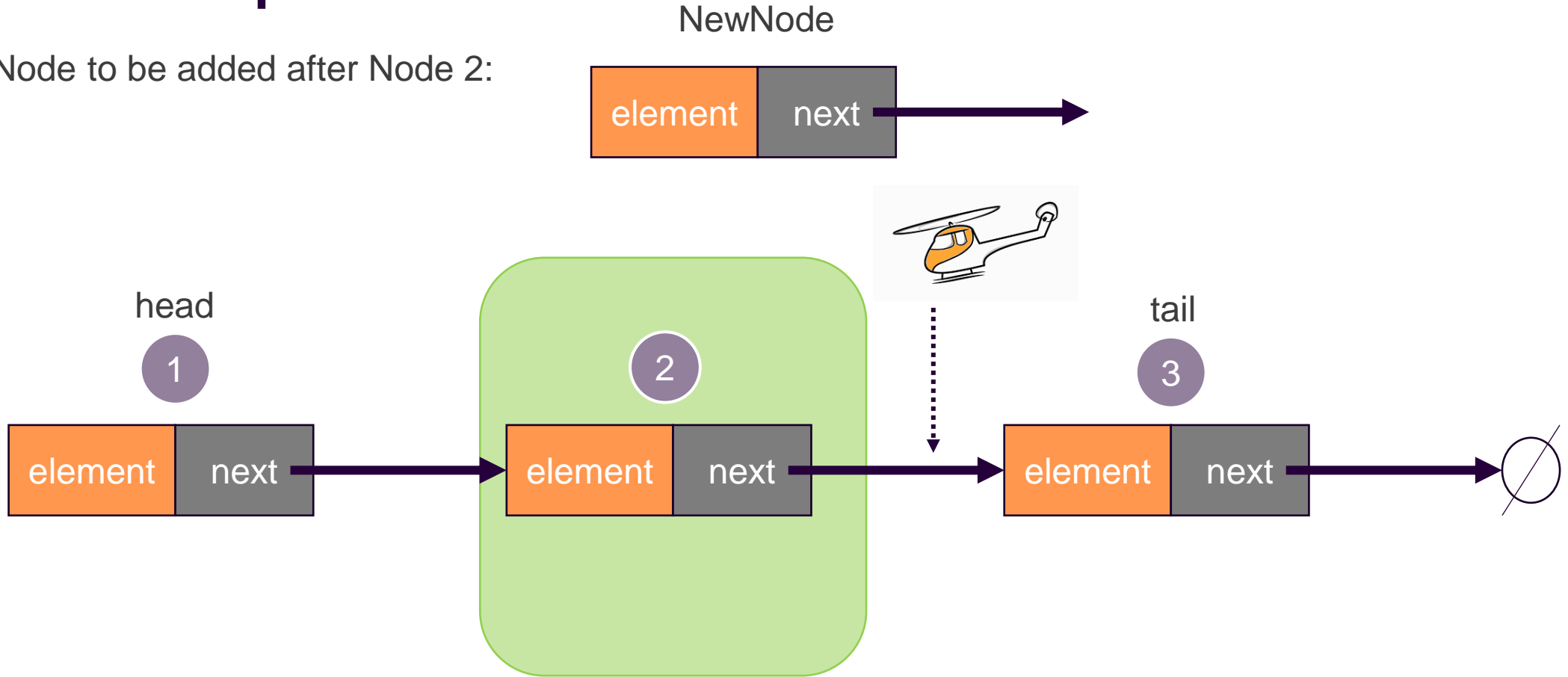
The “add after” method

-Add an element after the given node



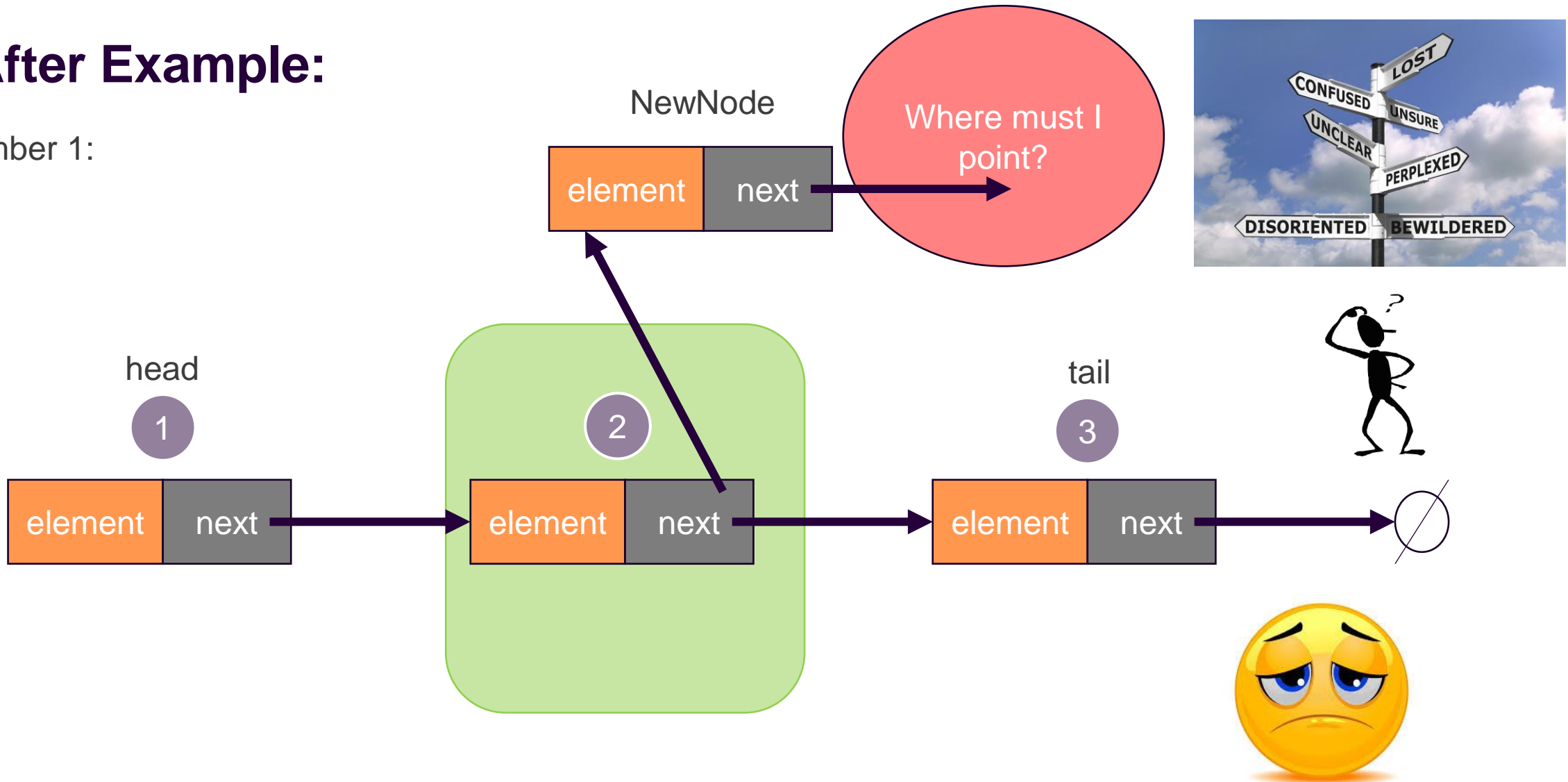
addAfter Example:

1. NewNode to be added after Node 2:

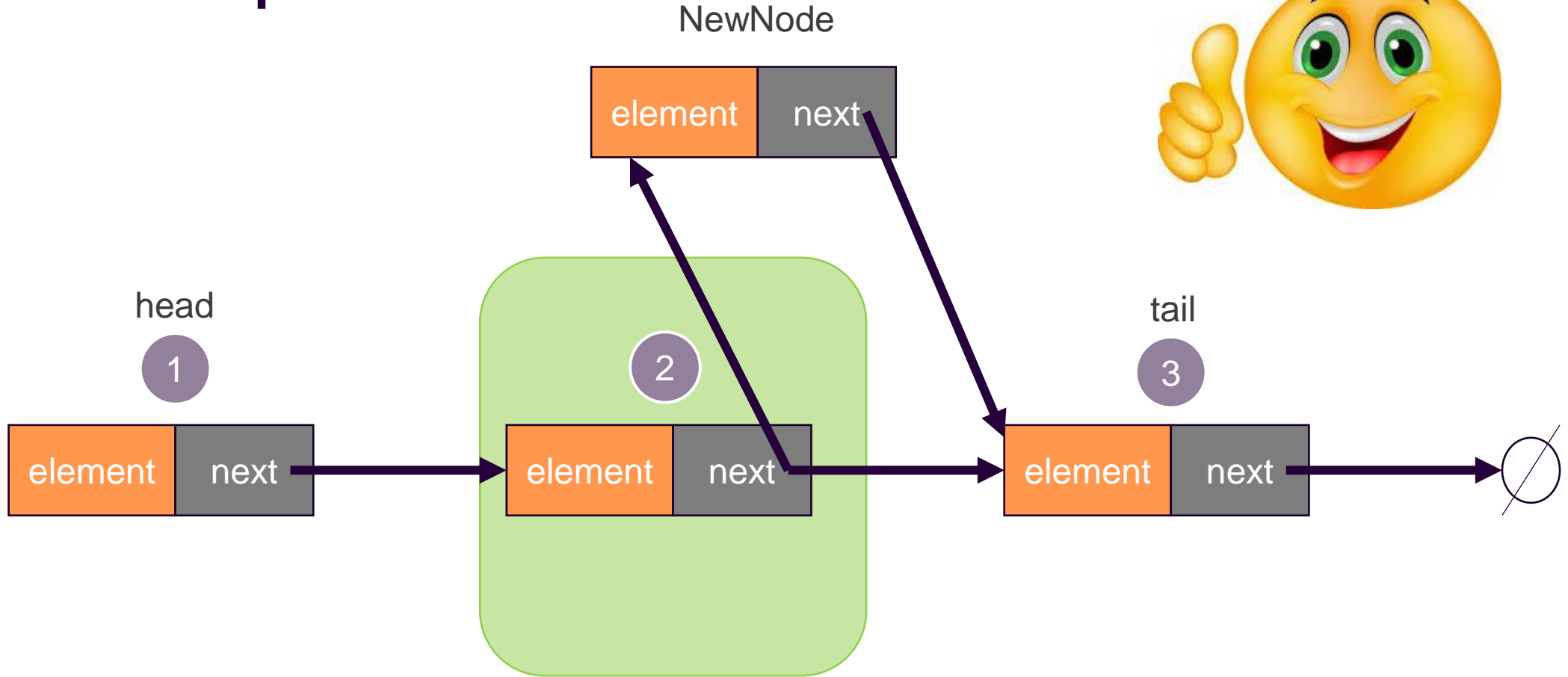


addAfter Example:

Try number 1:

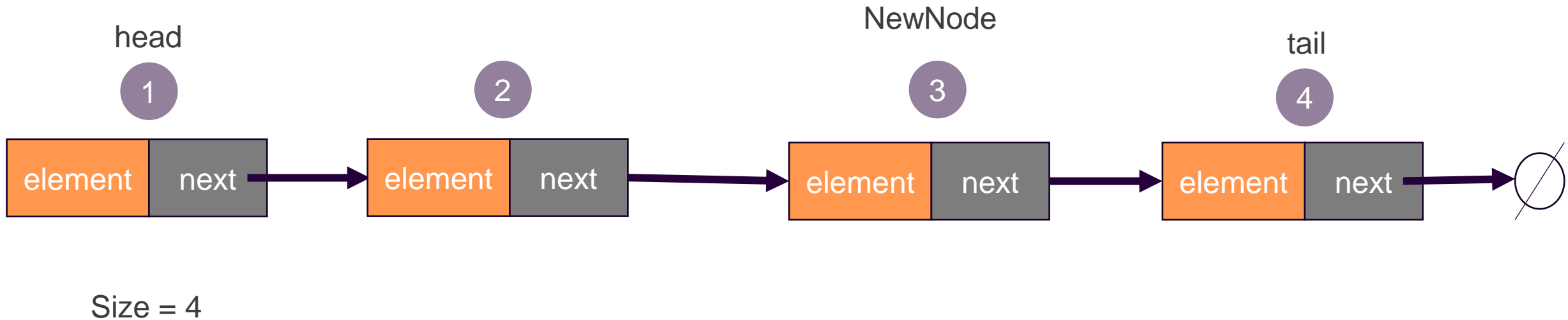


addAfter Example:

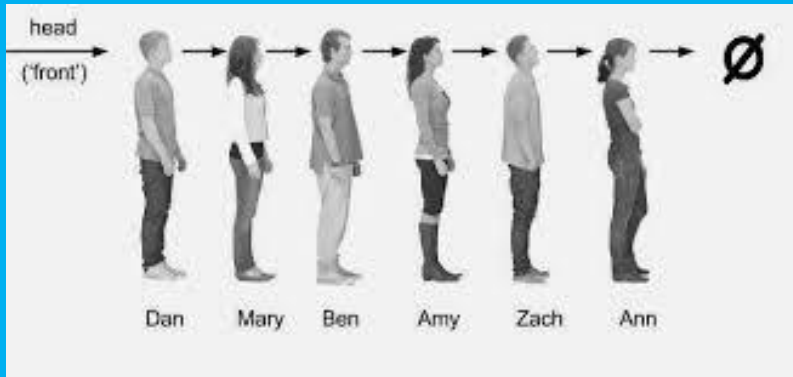


addAfter Example:

The new list:



Draw it or visualize what you are trying to achieve



Singly Linked List Methods to Implement:

- `prev(givenNode)` => return the node before the given node
- `replace(givenNode, newItem)` => return old item
- `insertAfter (givenNode, itemToAdd)` => return new Node
- `insertBefore (givenNode, itemToAdd)` => return new Node
- `remove (nodeToRemove)` => return removed item
- `search (itemToSearch)` => return node containing itemToSearch
- `toString ()` => return String representation of SLL



Main Class Methods to Implement:

- `writeProductItemToFile` => Write list of objects to a file
- `readProductItemsFromFile` => Read objects from a file and return the list

The **`ObjectInputStream`** / **`ObjectOutputStream`** classes handle the(de)serialization of objects.

Writing an object to a binary file requires **serializing** it.

To allow serialization, objects only need implement **`java.io.Serializable`**

