

Computer Science 134C

Introduction to Computer Science, in Python

Lecture #21 (Classes VI)

November 2

Keywords

insertion sort, linked list, recursion

We finish our linked list class.

1. Questions?
2. Recall: We implemented the `Element` class. This is a private, self-referential class that holds one or more values as a linked chain. Many of the methods were recursive, where the simplest case involved a list of one element.
3. Recall: We implemented the `LinkedList` class. This is a public wrapper class for the lists of `Elements`. This class has a single private attribute `_head` that is a reference to the first `Element` in the list. The methods of this class parallel, to some degree, the methods of the `Element` class. It is the responsibility of the wrapper to handle the notion of an “empty” list.
4. Recall: Implementation of the `__getitem__` method.
5. Implementation of the `__setitem__` method.
6. Implementation of the `append` method.
7. Implementation of the `extend` method. This allows us to improve our initializer for the `LinkedList` class.
8. Implementation of the `__contains__` method. This supports the `in` keyword.
9. Implementation of a `pop` method.
10. Implementation of a `reverse` method. This allows us to reverse the order of elements of a list, in place.
11. Implementation of a private method to insert an element into a list that is assumed to be in order.
12. Implementation of `sort` method.
13. Making `sort` run faster. A notion of performance.

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