CS2302 - Data Structures

Spring 2020

Lab 3

Due Friday, February 28, 2020

Add the following functions to the *List* class provided in class:

1. *append(x)* - Add item x to the end of the list.
2. *extend(L)* - Extend the list by appending all the items from list or array L.
3. *insert(i, x)* - Insert item x at position i. The first argument is the index of the element before which to insert, so *a.insert(0, x)* inserts at the front of the list, and *a.insert(len(a), x)* is equivalent to *a.append(x)*.
4. *remove(x)* - Remove the first item from the list whose value is equal to x. It raises a ValueError if there is no such item.
5. *pop([i])* - Remove the item at position i in the list, and return it. If no index is specified, a.pop() removes and returns the last item in the list. (The square brackets around the i in the method signature denote that the parameter is optional, not that you should type square brackets at that position. You will see this notation frequently in the Python Library Reference.)
6. *clear()* - Remove all items from the list.
7. *index(x[, start[, end]])* Return zero-based index in the list of the first item whose value is equal to x. Raises a ValueError if there is no such item. The optional arguments start and end are interpreted as in the slice notation and are used to limit the search to a particular subsequence of the list. The returned index is computed relative to the beginning of the full sequence rather than the start argument.
8. *count(x)* - Return the number of times x appears in the list.
9. *sort()* - Sort the items of the list in place.
10. *reverse()* - Reverse the elements of the list in place.
11. *copy()* - Return a copy of the list.

As usual, write a report describing your work.