blist **library (Python, C extension)**

Drop-in replacement for list, with O(log n) **insertion**.

Example:

from blist import blist

arr = blist([1, 2, 3, 4])

arr.insert(2, 99) # O(log n)

# ****SortedList (from**** sortedcontainers****)****

### ****Definition****

A SortedList is a list that **maintains its elements in sorted order automatically**.

### ****Installation****

pip install sortedcontainers

### ****Key Features****

Automatically keeps elements sorted.

Supports duplicates.

Fast insertion, deletion, and search.

### ****Time Complexity****

| **Operation** | **Complexity** |
| --- | --- |
| Insert / Add | O(log n) |
| Remove | O(log n) |
| Lookup by index | O(1) |
| Check contains | O(log n) |
| Iteration | O(n) |

### ****Basic Usage****

from sortedcontainers import SortedList

sl = SortedList([10, 5, 20])

sl.add(15)print(sl) # SortedList([5, 10, 15, 20])print(sl[2]) # 15

sl.remove(10)print(sl) # SortedList([5, 15, 20])print(20 in sl) # True

### ****Use Cases****

Leaderboards / rankings

Priority queues with sorted order

Real-time analytics requiring sorted windows

### ****Advantages****

No need to call .sort() after insertion.

Pure Python, fast, actively maintained.

Supports all common list operations + efficient search/insert.