

Python Collections for DSA

list → dynamic array

dict → hash map

set → hash set

deque → queue / double-ended queue

heapq → priority queue (min heap)

tuple → immutable pair

1. List (Dynamic Array) - ordered, mutable collection

used in:

• arrays

• two pointers

• sliding

window

• sorting

problems

arr = [1, 2, 3] # direct list creation

arr = list() ← This creates an empty list.

equivalent to

• Use list() when you want to convert something into a list, for example:

arr = list("abc")
⇒ ['a', 'b', 'c']

arr = list(range(5))

⇒ [0, 1, 2, 3, 4]

Note: use list() for converting iterables to lists.

arr = [1, 2, 3]

- arr.append(4) # add at end
arr.pop() print(arr)

O(1)

- arr.pop() # remove last
print(arr)

O(1)

- arr.pop(0) # remove index '0' element
print(arr)

O(n)

- arr.insert(1, 99) # insert '99' at '1' index
print(arr)

O(n)

[2, 99, 3]

- arr.sort() # sort in ascending order
print(arr)

[2, 3, 99]

- arr.reverse() # reverse the array
print(arr)

[99, 3, 2]