

Python 3 Collections — Practical Guide (Concise)

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Built-ins:

- list: dynamic array; $O(1)$ append/pop end; use deque for front operations
- tuple: immutable record; can be dict keys if elements hashable
- dict: hash map; insertion-ordered (3.7+)
- set: uniqueness + membership

collections module:

- deque: $O(1)$ append/pop both ends; sliding-window patterns
- Counter: frequency counting; most_common
- defaultdict: auto-initialize values
- OrderedDict: move_to_end; useful for LRU
- namedtuple: lightweight immutable records with attribute access
- ChainMap: layered read-through configuration

heapq (extra): min-heap primitives; nlargest/nsmallest, k-th selection, stream top-k.