**Python List Methods Cheat Sheet**

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**1. append()**

- **Definition**: Adds an item to the end of the list.
- **Purpose**: To dynamically grow the list.
- **Syntax**:
- list.append(item)
- **Example**:
- numbers = [1, 2, 3]
- numbers.append(4)  # Output: [1, 2, 3, 4]

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**2. extend()**

- **Definition**: Extends the list by appending elements from another iterable (e.g., list, tuple).
- **Purpose**: To merge two or more iterables into a list.
- **Syntax**:
- list.extend(iterable)
- **Example**:
- numbers = [1, 2, 3]
- numbers.extend([4, 5])  # Output: [1, 2, 3, 4, 5]

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**3. insert()**

- **Definition**: Inserts an item at a specified index.
- **Purpose**: To add an element to a specific position in the list.
- **Syntax**:
- list.insert(index, item)
- **Example**:
- numbers = [1, 2, 4]
- numbers.insert(2, 3)  # Output: [1, 2, 3, 4]

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**4. remove()**

- **Definition**: Removes the first occurrence of the specified item from the list.

- **Purpose**: To delete specific items by value.
- **Syntax**:
- list.remove(item)
- **Example**:
- numbers = [1, 2, 3, 4]
- numbers.remove(3)  # Output: [1, 2, 4]

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**5. pop()**

- **Definition**: Removes and returns the item at a specified index (default is the last item).
- **Purpose**: To extract elements from the list.
- **Syntax**:
- list.pop(index=-1)
- **Example**:
- numbers = [1, 2, 3]
- last_item = numbers.pop()  # Output: [1, 2], last_item = 3

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**6. clear()**

- **Definition**: Removes all items from the list.
- **Purpose**: To empty a list.
- **Syntax**:
- list.clear()
- **Example**:
- numbers = [1, 2, 3]
- numbers.clear()  # Output: []

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**7. index()**

- **Definition**: Returns the index of the first occurrence of a specified item.
- **Purpose**: To find the position of an element.
- **Syntax**:
- list.index(item, start=0, end=len(list))
- **Example**:

- numbers = [1, 2, 3, 2]
- idx = numbers.index(2)  # Output: 1

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**8. count()**

- **Definition**: Returns the number of occurrences of a specified item in the list.
- **Purpose**: To count elements in the list.
- **Syntax**:
- list.count(item)
- **Example**:
- numbers = [1, 2, 2, 3]
- count = numbers.count(2)  # Output: 2

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**9. sort()**

- **Definition**: Sorts the list in ascending order (default) or descending if specified.
- **Purpose**: To organize list elements.
- **Syntax**:
- list.sort(key=None, reverse=False)
- **Example**:
- numbers = [3, 1, 2]
- numbers.sort()  # Output: [1, 2, 3]

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**10. reverse()**

- **Definition**: Reverses the elements of the list in place.
- **Purpose**: To flip the order of the list.
- **Syntax**:
- list.reverse()
- **Example**:
- numbers = [1, 2, 3]
- numbers.reverse()  # Output: [3, 2, 1]

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**11. copy()**

- **Definition**: Returns a shallow copy of the list.
- **Purpose**: To duplicate a list.
- **Syntax**:
- list.copy()
- **Example**:
- numbers = [1, 2, 3]
- copy_list = numbers.copy()  # Output: [1, 2, 3]