In [5]:

```
# Initialize the list
fruits = ['apple', 'banana', 'cherry', 'date', 'elderberry']

# 1. append(x)
# Adds 'fig' to the end of the list
fruits.append('fig')
print("After append:", fruits)  # Output: ['apple', 'banana', 'cherry', 'date', 'elderbe

# 2. extend(iterable)
# Adds elements from another list to the end of the list
fruits.extend(['grape', 'honeydew'])
print("After extend:", fruits)  # Output: ['apple', 'banana', 'cherry', 'date', 'elderbe

# 3. insert(i, x)
# Inserts 'blueberry' at index 2
fruits.insert(2, 'blueberry')
print("After insert:", fruits)  # Output: ['apple', 'banana', 'blueberry', 'cherry', 'da

# 4. remove(x)
# Removes the first occurrence of 'date'
fruits.remove('date')
print("After remove:", fruits)  # Output: ['apple', 'banana', 'blueberry', 'cherry', 'el

# 5. pop([i])
# Removes and returns the item at index 5 (default is the last item)
popped_item = fruits.pop(5)
print("After pop:", fruits)       # Output: ['apple', 'banana', 'blueberry', 'cherry', '
print("Popped item:", popped_item) # Output: 'fig'

# 6. index(x[, start[, end]])
# Finds the index of the first occurrence of 'grape'
index_of_grape = fruits.index('grape')
print("Index of 'grape':", index_of_grape)  # Output: 5

# 7. count(x)
# Counts the occurrences of 'blueberry'
count_of_blueberry = fruits.count('blueberry')
print("Count of 'blueberry':", count_of_blueberry)  # Output: 1

# 8. sort(key=None, reverse=False)
# Sorts the list in ascending order
fruits.sort()
print("After sort:", fruits)  # Output: ['apple', 'banana', 'blueberry', 'cherry', 'elde

# 9. reverse()
# Reverses the elements in the list
fruits.reverse()
print("After reverse:", fruits)  # Output: ['honeydew', 'grape', 'elderberry', 'cherry',

# 10. clear()
# Removes all items from the list
fruits.clear()
print("After clear:", fruits)  # Output: []

# 11. copy()
# Returns a shallow copy of the list
original_fruits = ['apple', 'banana', 'cherry']
fruits_copy = original_fruits.copy()
print("Original list:", original_fruits)  # Output: ['apple', 'banana', 'cherry']
print("Copied list:", fruits_copy)         # Output: ['apple', 'banana', 'cherry']

# Additional example demonstrating all methods in context
# Reinitialize the list
numbers = [5, 3, 9, 1, 6]
```

```python
# 12. sort with key and reverse
# Sorts the list in descending order based on the absolute value
numbers.sort(key=abs, reverse=True)
print("Sorted numbers:", numbers)  # Output: [9, 6, 5, 3, 1]

# 13. reverse() on the sorted list
# Reverses the sorted list
numbers.reverse()
print("Reversed numbers:", numbers)  # Output: [1, 3, 5, 6, 9]

# 14. count()
# Counts the occurrences of a number
count_of_3 = numbers.count(3)
print("Count of 3:", count_of_3)  # Output: 1
```

```
After append: ['apple', 'banana', 'cherry', 'date', 'elderberry', 'fig']
After extend: ['apple', 'banana', 'cherry', 'date', 'elderberry', 'fig', 'grape', 'honey
dew']
After insert: ['apple', 'banana', 'blueberry', 'cherry', 'date', 'elderberry', 'fig', 'g
rape', 'honeydew']
After remove: ['apple', 'banana', 'blueberry', 'cherry', 'elderberry', 'fig', 'grape',
'honeydew']
After pop: ['apple', 'banana', 'blueberry', 'cherry', 'elderberry', 'grape', 'honeydew']
Popped item: fig
Index of 'grape': 5
Count of 'blueberry': 1
After sort: ['apple', 'banana', 'blueberry', 'cherry', 'elderberry', 'grape', 'honeyde
w']
After reverse: ['honeydew', 'grape', 'elderberry', 'cherry', 'blueberry', 'banana', 'app
le']
After clear: []
Original list: ['apple', 'banana', 'cherry']
Copied list: ['apple', 'banana', 'cherry']
Sorted numbers: [9, 6, 5, 3, 1]
Reversed numbers: [1, 3, 5, 6, 9]
Count of 3: 1
```

In [ ]: