Name Ayesha Shahid

ID PIAIC245513

ALL METHODS/FUNCTION:

* append()
* extend()
* insert()
* remove()
* pop()
* clear()
* index()
* count()
* sort()
* reverse()
* copy()

# Initial list of countries

countries :list = ['France', 'Brazil', 'Japan', 'Australia', 'Canada']

# 1. Print the original list

print("Original list of countries:")

print(countries)    #  return\_type=print(countries) , print(return\_type)=none

#2. append()

#Description: Adds an item to the end of the list.

#Syntax: list.append(item)

#item: The element to be added to the list.

#Return Type: None ,       return\_type=countries.append('Italy'),       print(return\_type)=none

# 2. Append a new item to the list

return\_type=countries.append('Italy')

print("\nList after appending 'Italy':")

print(countries)

# 3. extend()   Extends list by adding elements from an iterable    list.extend(iterable)   return\_type=None

# 3. Extend the list with another list of countries

additional\_countries = ['India', 'Germany', 'Mexico']

countries.extend(additional\_countries)

print("\nList after extending with additional countries:")

print(countries)

# 4. Insert an item at a specific position (index 2)

# 4 insert()    Inserts item at a specified position    list.insert(index, item)    return\_type=None

countries.insert(2, 'Netherlands')

print("\nList after inserting 'Netherlands' at index 2:")

print(countries)

# 5. Remove an item by value ('Japan')

# remove()  Removes the first occurrence of item    list.remove(item)   return\_type=None

countries.remove('Japan')

print("\nList after removing 'Japan':")

print(countries)

# 6. Remove an item by index (last item)

# pop() Removes and returns an item at a specified index    list.pop([index])   return\_type=The removed item

last\_country = countries.pop()

print(f"\nRemoved the last item: {last\_country}")

print("List after popping the last item:")

print(countries)

# 7. Clear the list

# 7 clear() Removes all items from the list list.clear()    return\_type=None

countries.clear()

print("\nList after clear() method:")

print(countries)

# Re-populate the list for further operations

countries = ['France', 'Brazil', 'Japan', 'Australia', 'Canada', 'India', 'Germany', 'Mexico']

# 8. Find the index of a specific item ('Australia')

# index()   Returns index of the first occurrence of item   list.index(item[, start[, end]])    return\_type int

index\_of\_australia = countries.index('Australia')

print(f"\nIndex of 'Australia': {index\_of\_australia}")

# index()   Returns index of the first occurrence of item   list.index(item[, start[, end]])    return\_type=int

# 9. Count the occurrences of a specific item ('Canada')

count\_of\_canada = countries.count('Canada')

print(f"Count of 'Canada': {count\_of\_canada}")

# sort()    Sorts the list in place list.sort(key=None, reverse=False)  return\_type=None

# 10. Sort the list in alphabetical order

countries.sort()

print("\nList sorted in alphabetical order with sort():")

print(countries)

# 11. Reverse the order of the list

#reverse()  Reverses the order of items in the list list.reverse()  return\_type=None

countries.reverse()

print("\nList after reverse() method:")

print(countries)

# 12. Copy the list

# copy()    Returns a shallow copy of the list  list.copy() return\_type New list

countries\_copy = countries.copy()

print("\nCopy of the list:")

print(countries\_copy)

# Final state of both lists

print("\nFinal state of the original list:")

print(countries)

print("\nFinal state of the copied list:")

print(countries\_copy)

| **Method** | **Description** | **Syntax** | **Return Type** |
| --- | --- | --- | --- |
| append() | Adds item to end of the list | list.append(item) | None |
| extend() | Extends list by adding elements from an iterable | list.extend(iterable) | None |
| insert() | Inserts item at a specified position | list.insert(index, item) | None |
| remove() | Removes the first occurrence of item | list.remove(item) | None |
| pop() | Removes and returns an item at a specified index | list.pop([index]) | The removed item |
| clear() | Removes all items from the list | list.clear() | None |
| index() | Returns index of the first occurrence of item | list.index(item[, start[, end]]) | int |
| count() | Returns number of occurrences of an item | list.count(item) | int |
| sort() | Sorts the list in place | list.sort(key=None, reverse=False) | None |
| reverse() | Reverses the order of items in the list | list.reverse() | None |
| copy() | Returns a shallow copy of the list | list.copy() | New list |