# Exercise 1: Create a List  
# Create a list called fruits with the following items: "apple", "banana", "cherry", "date", and "elderberry".  
  
fruits = ["apple", "banana", "cherry", "date", "elderberry"]  
print(fruits)  
  
# Exercise 2: Access List Elements  
# Print the first and last items from the fruits list.  
print(f"{fruits[0]}, {fruits[-1]}")  
  
# Print the second and fourth items from the list.  
print(f"{fruits[1]},{fruits[3]}")  
  
# Exercise 3: Modify a List  
# Replace "banana" in the fruits list with "blueberry".  
# Print the modified list.  
fruits[1] = "blueberry"  
print(fruits)  
  
# Exercise 4: Add and Remove Elements  
# Append "fig" and "grape" to the fruits list.  
# Remove "apple" from the list.  
# Print the final list.  
fruits.extend(["fig","grape"])  
fruits.remove("apple")  
print(fruits)  
  
# Exercise 5: Slice a List  
# Slice the first three elements from the fruits list and assign them to a new list called first\_three\_fruits.  
# Print first\_three\_fruits.  
  
first\_three\_fruits = fruits[:3]  
print(first\_three\_fruits)  
  
# Exercise 6: Find List Length  
# Find and print the length of the fruits list.  
print(len(fruits))  
  
# Exercise 7: List Concatenation  
# Create a second list called vegetables with the following items: "carrot", "broccoli", "spinach".  
# Concatenate the fruits and vegetables lists into a new list called food.  
# Print the food list.  
  
vegetables = ["carrot", "broccoli", "spinach"]  
food = fruits + vegetables  
print(food)  
  
# Exercise 8: Loop Through a List  
# Loop through the fruits list and print each item on a new line.  
  
for i in fruits:  
 print(i)  
  
# Exercise 9: Check for Membership  
# Check if "cherry" and "mango" are in the fruits list. Print a message for each check.  
  
for i in fruits:  
 if i == "cherry":  
 print("Cherry is present")  
 elif i == "mango":  
 print("Mango is present")  
 else:  
 print("Neither cherry nor mango")  
  
# Exercise 10: List Comprehension  
# Use list comprehension to create a new list called fruit\_lengths that contains the lengths of each item in the fruits list.  
# Print the fruit\_lengths list.  
  
fruits\_length = [len(i) for i in fruits]  
print(fruits\_length)  
  
# Exercise 11: Sort a List  
# Sort the fruits list in alphabetical order and print it.  
# Sort the fruits list in reverse alphabetical order and print it.  
fruits.sort()  
print("Alphabetical Order: ",fruits)  
fruits.sort(reverse=True)  
print("Reverse Alphabetical: ",fruits)  
  
# Exercise 12: Nested Lists  
# Create a list called nested\_list that contains two lists: one with the first three fruits and one with the last three fruits.  
# Access the first element of the second list inside nested\_list and print it.  
  
nested\_list = [fruits[:3],fruits[-3:]]  
print(nested\_list[1][0])  
  
# Exercise 13: Remove Duplicates  
# Create a list called numbers with the following elements: [1, 2, 2, 3, 4, 4, 4, 5].  
# Remove the duplicates from the list and print the list of unique numbers.  
  
numbers = [1, 2, 2, 3, 4, 4, 4, 5]  
unique\_nums = []  
for i in numbers:  
 if i not in unique\_nums:  
 unique\_nums.append(i)  
print(unique\_nums)  
  
# Exercise 14: Split and Join Strings  
# Split the string "hello, world, python, programming" into a list called words using the comma as a delimiter.  
# Join the words list back into a string using a space as the separator and print it.  
  
string\_sentence = "hello, world, python, programming"  
  
words = string\_sentence.split(",")  
new\_sentence = " ".join(words)  
print(new\_sentence)