```python
# Exercises 26 August

'''Exercise 1: Create a List
Create a list called fruits with the following items: "apple", "banana",
"cherry", "date", and "elderberry".
Print the list.'''

fruits = ["apple", "banana", "cherry", "date", "elderberry"]
print(fruits)

'''Exercise 2: Access List Elements
Print the first and last items from the fruits list.
Print the second and fourth items from the list.'''

print(fruits[0], fruits[-1])
print(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.append("fig")
fruits.append("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)
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'''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 fruit in fruits:
    print(fruit)

'''Exercise 9: Check for Membership
Check if "cherry" and "mango" are in the fruits list. Print a message for each
check.'''



if "cherry" in fruits:
    print("cherry is in the list")
else:
    print("cherry is not in the list")

if "mango" in fruits:
    print("mango is in the list")
else:
    print("mango is not in the list")



'''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.'''
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fruit_lengths = [len(fruit) for fruit in fruits]
print(fruit_lengths)

'''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(fruits)
print(fruits[::-1])

'''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_numbers = list(set(numbers))
print(unique_numbers)

'''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.'''

words = "hello, world, python, programming".split(", ")
joined_string = " ".join(words)
print(joined_string)
```