**#Exercises**

**#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("First item:", fruits[0])  
print("Last item:", fruits[-1])  
print("Second item:", fruits[1])  
print("Fourth item:", 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)  
  
**#Exercise 6: Find List Length  
#Find and print the length of the fruits list.**length\_of\_fruits = len(fruits)  
  
print(length\_of\_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 fruits list.")  
else:  
 print("Cherry is not in the fruits list.")  
  
if "mango" in fruits:  
 print("Mango is in the fruits list.")  
else:  
 print("Mango is not in the fruits 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.**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("Alphabetical order:", fruits)  
  
fruits.sort(reverse=True)  
print("Reverse alphabetical order:", 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:]]  
  
first\_element\_of\_second\_list = nested\_list[1][0]  
  
print(first\_element\_of\_second\_list)  
  
**#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.**string = "hello, world, python, programming"  
  
words = string.split(", ")  
  
joined\_string = " ".join(words)  
  
print(joined\_string)