**# 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.**

**first\_element = fruits[:1]**

**last\_element = fruits[-1:]**

**second\_element = fruits[:2]**

**fourth\_element = fruits[-2:]**

**print(first\_element,last\_element)**

**print(second\_element,fourth\_element)**

**# 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'])**

**print(fruits)**

**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[0:3]**

**print(first\_three\_fruits)**

**# Exercise 6: Find List Length**

**# Find and print the length of the fruits list.**

**print(fruits.\_len\_())**

**# 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 x in fruits: # Normal method**

**print(x)**

**[print(x) for x in fruits] # List Comphrension**

**# 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("Yes")**

**else:**

**print("No")**

**# Check for "mango"**

**if "mango" in fruits:**

**print("Yes")**

**else:**

**print("No")**

**# 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(fruits)**

**fruits.reverse()**

**print(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\_second\_list = nested\_list[1][0]**

**print(first\_element\_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.**

**duplicates = [1, 2, 2, 3, 4, 4, 4, 5]**

**print(list(set(duplicates)))**

**# 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.**

**word = "hello, world, python, programming"**

**Split\_words = word.split(", ")**

**print(Split\_words)**

**joined\_words = " ".join(Split\_words)**

**print(joined\_words)**