**ADITYA AMIN**

**ASSIGN : 10**

1. Write a Python program to find sum of elements in list?

def calculate\_list\_sum(numbers):

result = 0

for num in numbers:

result += num

return result

numbers = [2, 3, 4, 5]

result = calculate\_list\_sum(numbers)

print("Sum:", result)

1. Write a Python program to Multiply all numbers in the list?

def multiply\_list\_numbers(numbers):

result = 1

for num in numbers:

result \*= num

return result

# Example list of numbers

numbers = [ 2, 3, 4, 5]

result = multiply\_list\_numbers(numbers)

print("Result: ", result)

1. Write a Python program to find smallest number in a list?

def find\_smallest\_number(numbers):

smallest = numbers[0] # Assume the first number is the smallest

for num in numbers:

if num < smallest:

smallest = num # Update the smallest number if a smaller number is found

return smallest

# Example list of numbers

numbers = [2,3,4,5]

smallest\_number = find\_smallest\_number(numbers)

print("Smallest number: ", smallest\_number)

1. Write a Python program to find largest number in a list?

def find\_largest\_number(numbers):

largest = numbers[0] # Assume the first number is the largest

for num in numbers:

if num > largest:

largest = num # Update the largest number if a larger number is found

return largest

# Example list of numbers

numbers = [2,3,4,5]

largest\_number = find\_largest\_number(numbers)

print("Largest number: ", largest\_number)

1. Write a Python program to find second largest number in a list?

def find\_second\_largest\_number(numbers):

largest = max(numbers) # Find the largest number in the list

numbers.remove(largest) # Remove the largest number from the list

second\_largest = max(numbers) # Find the largest number in the updated list

return second\_largest

# Example list of numbers

numbers = [2,3,4,5]

second\_largest\_number = find\_second\_largest\_number(numbers)

print("Second largest number: ", second\_largest\_number)

1. Write a Python program to find N largest elements from a list?

def find\_n\_largest\_elements(numbers, n):

largest\_numbers = sorted(numbers, reverse=True)[:n] # Sort the numbers in descending order and get the first n elements

return largest\_numbers

# Example list of numbers

numbers = [2,3,4,5]

n = 3 # Number of largest elements to find

n\_largest\_numbers = find\_n\_largest\_elements(numbers, n)

print(f"{n} largest numbers: ", n\_largest\_numbers)

1. Write a Python program to print even numbers in a list?

def print\_even\_numbers(numbers):

even\_numbers = [] # Create an empty list to store even numbers

for num in numbers:

if num % 2 == 0:

even\_numbers.append(num) # Append even numbers to the list

return even\_numbers

# Example list of numbers

numbers = [2,3,4,5]

even\_numbers = print\_even\_numbers(numbers)

print("Even numbers: ", even\_numbers)

1. Write a Python program to print odd numbers in a List?

def print\_odd\_numbers(numbers):

odd\_numbers = [] # Create an empty list to store odd numbers

for num in numbers:

if num % 2 != 0:

odd\_numbers.append(num) # Append odd numbers to the list

return odd\_numbers

# Example list of numbers

numbers = [2,3,4,5]

odd\_numbers = print\_odd\_numbers(numbers)

print("Odd numbers: ", odd\_numbers)

1. Write a Python program to Remove empty List from List?

def remove\_empty\_lists(lst):

cleaned\_lst = [sublst for sublst in lst if sublst] # Use list comprehension to filter out empty lists

return cleaned\_lst

# Example list with empty lists

lst = [1, [], 3, [], [], 6, [7], [], 9, [], []]

cleaned\_lst = remove\_empty\_lists(lst)

print("List with empty lists removed: ", cleaned\_lst)

1. Write a Python program to Cloning or Copying a list?

# Method 1: Using the copy() method

def clone\_list\_copy(lst):

cloned\_lst = lst.copy() # Use the copy() method to create a shallow copy of the list

return cloned\_lst

# Method 2: Using the list() constructor

def clone\_list\_constructor(lst):

cloned\_lst = list(lst) # Use the list() constructor to create a shallow copy of the list

return cloned\_lst

# Method 3: Using the slice notation

def clone\_list\_slice(lst):

cloned\_lst = lst[:] # Use the slice notation to create a shallow copy of the list

return cloned\_lst

# Example list to clone

original\_lst = [1, 2, 3, 4, 5]

# Clone the list using different methods

cloned\_lst\_copy = clone\_list\_copy(original\_lst)

cloned\_lst\_constructor = clone\_list\_constructor(original\_lst)

cloned\_lst\_slice = clone\_list\_slice(original\_lst)

# Print the original list and the cloned lists

print("Original List: ", original\_lst)

print("Cloned List (copy()): ", cloned\_lst\_copy)

1. Write a Python program to Count occurrences of an element in a list?

# Method 1: Using the copy() method

def clone\_list\_copy(lst):

cloned\_lst = lst.copy() # Use the copy() method to create a shallow copy of the list

return cloned\_lst

# Method 2: Using the list() constructor

def clone\_list\_constructor(lst):

cloned\_lst = list(lst) # Use the list() constructor to create a shallow copy of the list

return cloned\_lst

# Method 3: Using the slice notation

def clone\_list\_slice(lst):

cloned\_lst = lst[:] # Use the slice notation to create a shallow copy of the list

return cloned\_lst

# Example list to clone

original\_lst = [1, 2, 3, 4, 5]

# Clone the list using different methods

cloned\_lst\_copy = clone\_list\_copy(original\_lst)

cloned\_lst\_constructor = clone\_list\_constructor(original\_lst)

cloned\_lst\_slice = clone\_list\_slice(original\_lst)

# Print the original list and the cloned lists

print("Original List: ", original\_lst)

print("Cloned List (copy()): ", cloned\_lst\_copy)

print("Cloned List (list() constructor): ", cloned\_lst\_constructor)

print("Cloned List (slice notation): ", cloned\_lst\_slice)