**1. Calculate the Average of Numbers in a List**

python

Copy code

def calculate\_average(numbers):

return sum(numbers) / len(numbers) if numbers else 0

# Example usage

numbers = [10, 20, 30, 40, 50]

print("Average:", calculate\_average(numbers))

**2. Check for Duplicates in 6 Integers**

python

Copy code

values = [32, 10, 45, 90, 45, 6]

if len(values) != len(set(values)):

print("DUPLICATES")

else:

print("ALL UNIQUE")

**3. Add and Remove Operations on Set**

python

Copy code

my\_set = {1, 2, 3}

my\_set.add(4)

my\_set.remove(2) # Use discard(2) to avoid errors if element is absent

print("Updated Set:", my\_set)

**4. Find Maximum and Minimum in a Set**

python

Copy code

my\_set = {34, 67, 12, 89, 45}

print("Maximum:", max(my\_set))

print("Minimum:", min(my\_set))

**5. Create and Display an Array**

python

Copy code

import array

arr = array.array('i', [10, 20, 30, 40, 50])

print("Array elements:", arr)

for i, val in enumerate(arr):

print(f"Index {i}: {val}")

**6. Occurrences of Specified Element in Array**

python

Copy code

arr = [10, 20, 30, 10, 10, 40, 50]

element = 10

print(f"{element} occurs {arr.count(element)} times")

**7. Reverse an Array**

python

Copy code

arr = [10, 20, 30, 40, 50]

print("Reversed Array:", arr[::-1])

**8. Sum of All Elements in a List**

python

Copy code

numbers = [10, 20, 30, 40]

print("Sum:", sum(numbers))

**9. Factorial of a Number**

python

Copy code

def factorial(n):

if n == 0 or n == 1:

return 1

return n \* factorial(n - 1)

# Example usage

print("Factorial:", factorial(5))

**10. Generate Fibonacci Numbers Using Function**

python

Copy code

def fibonacci(n):

fib\_series = [0, 1]

for i in range(2, n):

fib\_series.append(fib\_series[-1] + fib\_series[-2])

return fib\_series[:n]

# Example usage

print("Fibonacci Series:", fibonacci(10))

**11. Generate and Print Dictionary**

python

Copy code

n = 5

square\_dict = {x: x \* x for x in range(1, n + 1)}

print("Square Dictionary:", square\_dict)

**12. Sort a Dictionary by Value**

python

Copy code

my\_dict = {'a': 3, 'b': 1, 'c': 2}

ascending = dict(sorted(my\_dict.items(), key=lambda item: item[1]))

descending = dict(sorted(my\_dict.items(), key=lambda item: item[1], reverse=True))

print("Ascending:", ascending)

print("Descending:", descending)

**13. Combine Two Dictionaries Adding Common Keys**

python

Copy code

from collections import Counter

d1 = {'a': 100, 'b': 200, 'c': 300}

d2 = {'a': 300, 'b': 200, 'd': 400}

combined = Counter(d1) + Counter(d2)

print("Combined Dictionary:", dict(combined))

**14. List of Tuples and Reverse Original List**

python

Copy code

numbers = [1, 2, 3, 4, 5]

squares = [(x, x\*\*2) for x in numbers]

print("List of Tuples:", squares)

print("Reversed List:", numbers[::-1])

**15. Copy and Reverse Tuple**

python

Copy code

tuple1 = (11, 22, 33, 44, 55, 66)

new\_tuple = tuple1[3:5]

print("New Tuple:", new\_tuple)

print("Reversed Tuple:", tuple1[::-1])

**16. Get 5th Element from Front and Last**

python

Copy code

tuple1 = (10, 20, 30, 40, 50, 60, 70, 80)

print("5th from Front:", tuple1[4])

print("5th from Last:", tuple1[-5])

**17. Display Number Pattern**

python

Copy code

n = 10

num = 1

for i in range(1, 5):

for j in range(i):

print(num, end=" ")

num += 1

print()

**18. Find Repeated Items in a Tuple**

python

Copy code

tuple1 = (10, 20, 30, 10, 40, 50, 20, 30)

repeats = {item for item in tuple1 if tuple1.count(item) > 1}

print("Repeated Items:", repeats)