1. **Write a program to calculate the area of a circle given its radius.**

radius = float(input("Enter the radius of the circle: "))

area = 3.14 \* radius \*\* 2

print(f"The area of the circle is: {area}")

1. **Write a program to swap two numbers without using a temporary variable.**

a = int(input("Enter the first number: "))

b = int(input("Enter the second number: "))

a, b = b, a

print(f"After swapping: a = {a}, b = {b}")

1. **Write a program to check if a number is positive, negative, or zero.**

num = float(input("Enter a number: "))

if num > 0:

print("The number is positive.")

elif num < 0:

print("The number is negative.")

else:

print("The number is zero.")

1. **Write a program to print all odd numbers from 1 to n.**

n = int(input("Enter a number: "))

print("Odd numbers from 1 to", n, "are:")

for i in range(1, n+1):

if i % 2 != 0:

print(i, end=" ")

1. **Write a program to check if a number is prime or not.**

num = int(input("Enter a number: "))

if num > 1:

for i in range(2, int(num \*\* 0.5) + 1):

if num % i == 0:

print("The number is not prime.")

break

else:

print("The number is prime.")

else:

print("The number is not prime.")

1. **Write a program to find the factorial of a number using a loop.**

num = int(input("Enter a number: "))

factorial = 1

for i in range(1, num + 1):

factorial \*= i

print(f"The factorial of {num} is {factorial}.")

1. **Write a program to display the first 10 terms of the Fibonacci series.**

n1, n2 = 0, 1

count = 0

print("First 10 terms of the Fibonacci series:")

while count < 10:

print(n1, end=" ")

nth = n1 + n2

n1 = n2

n2 = nth

count += 1

1. **Write a program to find the second largest number in a list.**

numbers = [10, 20, 4, 45, 99]

numbers = list(set(numbers))

numbers.sort()

print("The second largest number is:", numbers[-2])

1. **Write a program to reverse a string using slicing.**

string = input("Enter a string: ")

reversed\_string = string[::-1]

print("Reversed string:", reversed\_string)

1. **Write a program to count how many times a specific element appears in a list.**

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

element = int(input("Enter the element to count: "))

count = lst.count(element)

print(f"The element {element} appears {count} times.")

1. **Write a program to concatenate two strings without using + operator.**

str1 = input("Enter the first string: ")

str2 = input("Enter the second string: ")

result = "{}{}".format(str1, str2)

print("Concatenated string:", result)

1. **Write a program to find the longest word in a given sentence.**

sentence = input("Enter a sentence: ")

words = sentence.split()

longest\_word = max(words, key=len)

print("The longest word is:", longest\_word)

1. **Write a function to calculate the sum of all elements in a list.**

def calculate\_sum(lst):

return sum(lst)

numbers = [10, 20, 30, 40]

print("Sum of elements in the list:", calculate\_sum(numbers))

1. **Write a function to check if a string is a palindrome.**

def is\_palindrome(string):

return string == string[::-1]

string = input("Enter a string: ")

if is\_palindrome(string):

print("The string is a palindrome.")

else:

print("The string is not a palindrome.")

1. **Write a function to find the maximum and minimum in a list.**

def find\_max\_min(lst):

return max(lst), min(lst)

numbers = [10, 20, 5, 40]

maximum, minimum = find\_max\_min(numbers)

print("Maximum:", maximum, "Minimum:", minimum)

1. **Write a program to sort a dictionary by keys.**

dictionary = {"b": 2, "a": 1, "c": 3}

sorted\_dict = dict(sorted(dictionary.items()))

print("Sorted dictionary:", sorted\_dict)

1. **Write a program to count the occurrences of each character in a string using a dictionary.**

string = input("Enter a string: ")

char\_count = {}

for char in string:

char\_count[char] = char\_count.get(char, 0) + 1

print("Character occurrences:", char\_count)

1. **Write a program to convert a decimal number to binary.**

decimal = int(input("Enter a decimal number: "))

binary = bin(decimal)[2:]

print(f"The binary representation of {decimal} is {binary}.")

1. **Write a program to remove all duplicates from a list while maintaining the original order.**

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

unique\_lst = []

for item in lst:

if item not in unique\_lst:

unique\_lst.append(item)

print("List without duplicates:", unique\_lst)