**Python Programming Exercises with Solutions**

1. **Sum of Two Numbers**

**Problem:** Write a program that takes two numbers as input and outputs their sum.

num1 = int(input("Enter first number: "))

num2 = int(input("Enter second number: "))

sum = num1 + num2

print("Sum:", sum)

1. **Odd or Even**

**Problem:** Write a program to check if a number is odd or even.

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

if num % 2 == 0:

 print("Even")

else:

 print("Odd")

1. **Sum of natural numbers**

**Problem:** Write a program to Sum of natural numbers.

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

sum = 0

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

 sum += i

print(f"Sum of first {n} natural numbers is: {sum}")

1. **Factorial of a Number**

**Problem:** Write a program to calculate the factorial of a number.

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

fact = 1

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

 fact \*= i

print("Factorial:", fact)

1. **Fibonacci Series**

**Problem:** Write a program to generate the Fibonacci series up to n terms.

n = int(input("Enter number of terms: "))

a, b = 0, 1

for \_ in range(n):

 print(a, end=" ")

 a, b = b, a + b

1. **Prime Number Checker**

**Problem:** Write a program to check if a number is prime.

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

if num > 1:

 for i in range(2, int(num/2) + 1):

 if num % i == 0:

 print("Not Prime")

 break

 else:

 print("Prime")

else:

 print("Not Prime")

1. **Multiplication Table**

**Problem:** Write a program to display the multiplication table of a number.

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

for i in range(1, 11):

 print(f"{num} x {i} = {num \* i}")

1. **Largest of Three Numbers**

**Problem:** Write a program to find the largest among three numbers.

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

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

c = int(input("Enter third number: "))

print("Largest:", max(a, b, c))

1. **Reverse a Number**

**Problem:** Write a program to reverse a given number.

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

original = number

reverse = 0

while number > 0:

 digit = number % 10

 reverse = reverse \* 10 + digit

 number = number // 10

print(f"Original number: {original}")

print(f"Reversed number: {reverse}")

1. **Count Vowels in a String**

**Problem:** Write a program to count the number of vowels in a string.

text = input("Enter a string: ")

vowels = 'aeiouAEIOU'

count = 0

for char in text:

 if char in vowels:

 count += 1

print(f"Number of vowels: {count}")

count = sum(1 for char in text if char in vowels)

1. **Find GCD**

**Problem:** Write a program to find the GCD of two numbers.

import math

num1 = int(input("Enter first number: "))

num2 = int(input("Enter second number: "))

print("GCD:", math.gcd(num1, num2))

1. **Leap Year Checker**

**Problem:** Write a program to check if a year is a leap year.

year = int(input("Enter a year: "))

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

 print("Leap Year")

else:

 print("Not a Leap Year")

1. **Sum of Digits**

**Problem:** Write a program to find the sum of digits of a number.

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

sum\_digits = sum(int(digit) for digit in str(num))

print("Sum of digits:", sum\_digits)

1. **Calculate Power**

**Problem:** Write a program to calculate the power of a number.

base = int(input("Enter base: "))

exp = int(input("Enter exponent: "))

print("Result:", base \*\* exp)

1. **Count Words in a String**

**Problem:** Write a program to count the number of words in a string.

text = input("Enter a string: ")

print("Word count:", len(text.split()))

1. **Grade calculator**

**Problem:** Write a program to find the grade of student.

marks = float(input("Enter your marks (0-100): "))

if marks >= 90:

 grade = 'A'

elif marks >= 80:

 grade = 'B'

elif marks >= 70:

 grade = 'C'

elif marks >= 60:

 grade = 'D'

else:

 grade = 'F'

print(f"Your grade is: {grade}")

1. **Simple calculator**

**Problem:** Write a program to create simple calculator.

num1 = float(input("Enter first number: "))

operator = input("Enter operator (+,-,\*,/): ")

num2 = float(input("Enter second number: "))

if operator == '+':

 result = num1 + num2

elif operator == '-':

 result = num1 - num2

elif operator == '\*':

 result = num1 \* num2

elif operator == '/':

 if num2 != 0:

 result = num1 / num2

 else:

 result = "Error: Division by zero"

else:

 result = "Invalid operator"

print(f"Result: {result}")