Write a Python program to calculate the area of a rectangle using user input for length and width.

**Solution**

num=int(input("Enter a number:"))  
num1=int(input("Enter a another number"))  
area=num\*num1  
print("Area of a rectangle:",area)

**Output**

Enter a number:5

Enter a another number3

Area of a rectangle: 15

Write a Python program to find the maximum of three numbers using conditional statements.

**Solution**

num=int(input("enter a number:"))  
num1=int(input("enter a number:"))  
num2=int(input("enter a number:"))  
if num>num1 and num>num2:  
 print("maximum number is:",num)  
elif num1>num and num1>num2:  
 print("maximum number is:",num1)  
else:  
 print("maximum number is:",num2)

**Output**

enter a number:6

enter a number:8

enter a number:2

maximum number is: 8

Write a Python program to swap the values of two variables without using a temporary variable.

**Solution**

a=10  
b=2  
c=b,a  
print("swap the values:",c)

**Output**

swap the values: (2, 10)

Write a Python program to convert temperature from Celsius to Fahrenheit and vice versa using functions.

**Solution**

def celsius\_fahrenheit(celsius):  
 return (celsius\*9/5)+32  
celsius=float(input("enter a temperature:"))  
fahrenheit=celsius\_fahrenheit(celsius)  
print("Fahrenheit:",fahrenheit)

**Output**

enter a temperature:25

Fahrenheit: 77.0

Write a Python program to count the number of vowels in a given string.

**Solution**

a="puropale creations and it solutions"  
c=0  
b=['a','e','i','o','u']  
for i in a:  
 if i in b:  
 c=c+1  
print(“Number of vowels:”,c)

**Output**

Number of vowels: 14

Write a Python program to check if a given number is prime or not.

**Solution**

num=int(input("Enter a number:",))  
i=1  
c=0  
while i<=num:  
 if num%i==0:  
 c=c+1  
 i=i+1  
if c==2:  
 print("It is prime:")  
else:  
 print("It is not a prime:")

**Output**

Enter a number:5

It is prime:

Write a Python program to find the factorial of a given number using recursion.

**Solution**

**Output**

Enter a number:5def factorial(num):  
 if num==0 or num==1:  
 return 1  
 else:  
 return num\*factorial(num-1)  
num=int(input("Enter a number:"))  
if num <0:  
 print("factorial is not define:")  
  
else:  
 print("factorial is:",factorial(num))

factorial is: 120

Write a Python program to generate the Fibonacci sequence up to a certain number of terms.

**Solution**

num=int(input("enter a number:"))  
a=0  
b=1  
print(a,b)  
i=1  
while i<=num :  
 c=a+b  
 print(c)  
 a=b  
 b=c  
 i=i+1

**Output**

enter a number:9

0 1

1

2

3

5

8

13

21

34

55

Write a Python program to remove duplicates from a list.

**Solution**

a=[1,3,2,1,4,5,6,3]  
b=[]  
for i in a:  
 if i not in b:  
 b.append(i)  
print(b)

**Output**

[1, 3, 2, 4, 5, 6]

Write a Python program to find the intersection of two lists.

**Solution**

a=[1,2,4,5,6,2,6]  
b=[1,4,7,8,9,3]  
c=[]  
for i in a:  
 if i in b and i not in c:  
 c.append(i)  
print("intersection:",c)

**Output**

intersection: [1, 4]

Write a Python program to find the longest word in a given list of words.

**Solution**

a=["puropale","madhuri","Deepika","deepthi","hridayansh"]  
long=max(a, key=len)  
print("long word:",long)

**Output**

long word: hridayansh

Write a Python program to count the occurrences of each word in a given string.

**Solutions**

a="this is a test this is simple"  
b=a.split()  
w={}  
  
for i in range(len(b)):  
 c=1  
 for j in range(i+1,len(b)):  
 if b[i]==b[j]:  
 c=c+1  
 if b[i] not in w:  
 w[b[i]]=c  
print("word count:",w)

**Output**

word count: {'this': 2, 'is': 2, 'a': 1, 'test': 1, 'simple': 1}

Write a Python program to reverse a given string.

**Solution**

a="madhuri"  
b=a[::-1]  
print(b)

**Output**

iruhdam

Write a Python program to sort a list of tuples based on the second element of each tuple.

**Solution**

a=[(1,3),(2,2),(5,1)]  
  
a.sort(key=lambda x: x[1])  
print("tuple sorted elements:",a)

**Output**

tuple sorted elements: [(5, 1), (2, 2), (1, 3)]

Write a Python program to find the sum of all elements in a list using a loop.

**Solution**

a=[1,3,5,7,8,9]  
sum=0  
for i in a:  
 sum=sum+i  
print("sum of numbers in a list:",sum)

**Output**

sum of numbers in a list: 33

Write a Python program to remove the last element from a list.

**Solution**

a=[1,3,5,6,8,9]  
b=a.pop()  
print(a)

**Output**

[1, 3, 5, 6, 8]

Write a Python program to check if a given string is a palindrome.

**Solution**

a="madam"  
b=a[::-1]  
if a==b:  
 print("It ia palindrom")  
else:  
 print("It is not a palindrom")

**Output**

It ia palindrom

Write a Python program to find the common characters between two strings.

**Solution**

a="madhuri"  
b="mounika"  
c=[]  
for i in a:  
 for j in b:  
 if i==j and i not in c:  
 c.append(i)  
print(c)

**Output**

['m', 'a', 'u', 'i']

Write a Python program to find the length of the longest consecutive sequence of a given list of integers.

Write a Python program to find the difference between two sets.

**Solution:**

a={1,2,3,5,7}  
 b={2,5,8,9,1}  
 c=a-b  
 print("difference:",c)

**Output**

difference: {3, 7}