**PYTHON PROGRAMS1)To Print Hello world**

print("Hello World")**2)To add Two number from taking the input from user**

a=int(input("Enter the first number:"))b=int(input("Enter the second number:"))print("The sum is:",a+b)**3)Python Program to Find the Square Root**

a=int(input("Enter the first number:"))sq\_root=a\*\*0.5print("Squre root of",a,":",sq\_root)---a=int(input("Enter the first number:"))num\_sqrt = a \*\* 0.5print("The square root of %0.3f is %0.3f"%(a ,num\_sqrt))---a=float(input("Enter a number:"))square\_root = a\*\*0.5print(f"The square root of {a} is {square\_root}")print("The square root of %d is %d"%(int(a),int(square\_root)))print("The square root of %0.3f is %0.3f" % (a, square\_root))**4)Area of a triangle**a,b,c=map(float, input("Enter sizes:").split())

s=(a+b+c)/2

area = (s\*(s-a)\*(s-b)\*(s-c)) \*\* 0.5

print("The area of the triangle with sides %.2f, %.2f, %.2f is %.2f" % (a, b, c, area))----------------------------numbers=[int (x) for x in input("Enter three numbers:").split()]a,b,c=numberss=(a+b+c)/2area = (s\*(s-a)\*(s-b)\*(s-c)) \*\* 0.5print("Area of triangle is:",area)**5)Solving Quadratic Equation**import cmatha,b,c=map(float, input("Enter the first number:").split(','))d=(b\*\*2)-4\*a\*cSol1=(-b-cmath.sqrt(d))/(2\*a)Sol2=(-b+cmath.sqrt(d))/(2\*a)print(f"{Sol1.real:.3f}+{Sol1.imag:.3f}i")print(f"{Sol2.real:.3f}{Sol2.imag:.3f}i")**6)SWAPING TWO NUMBERS**#using third variablea=10b=30x=aa=bb=xprint(a,b)#without using third variablea=15b=36a=a+bb=a-ba=a-bprint(a,b)**7)GENERATING RANDOM NUMBERS BETWEEN TWO NUMBERS**import randomprint(random.randint(1,1000))import randoma,b=map(int,input("Enter the range:").split())print(random.randint(a,b))**8)Converting kilometers into Miles**a=float(input("Enter the kilometers:"))Miles =a\*0.621371print(f'{Miles:.2f}miles')**9)Covert temperature from Celsius to Fahrenheit**Celsius =float(input("Enter the temperature in Celsius:"))Fahrenheit=(Celsius \* 1.8) + 32print("Temperature in Fahrenheit:%0.1f"%fahrenheit)**10)Python Program to Check if a Number is Positive, Negative or 0**number=int(input("Enter a number:"))if number>0:  print("It is a positive number.")elif number<0:  print("It is a negative number.")else:  print("It is zero.")**11)Python Program to Check if a Number is Odd or Even**number=int(input("Enter a number:"))if number%2==0:  print("It is a even number.")else:  print("It is a odd number.")**12)Python Program to Check Leap Year**year=int(input("Enter year:"))if (year%4==0 and year%100!=0) or (year%400==0):  print("It's a leap year.")else:  print("It's not an leap year.")**13)Python Program to Find the Largest Among Three Numbers**x,y,z=map(int,input("Enter three numbers:").split(','))Max=0if x>=y and x>=z:  Max=xelif y>=x and y>=z:  Max=yelse:  Max=zprint(Max)**14)Python Program to Check Prime Number**number=float(input("Enter a Number:"))if number>1:  for i in range(2, int(number / 2) + 1):  if number%i==0:  print("It's Not an Prime Number.")  break  else:  print("It's a Prime Number.")else:  print("It's Not an Prime number.")**15)Python Program to Print all Prime Numbers in an Interval**a = int(input("Enter a number: "))b = int(input("Enter a number: "))for num in range(a, b + 1):  for i in range(2, int(num \*\* 0.5) + 1):  if num % i == 0:  break  else:  print(num)

**16)Python Program to Find the Factorial of a Number**a = int(input("Enter a number: "))fact=1if a<0:  print("Sorry Factorial does not exist for negative numbers.")elif a==0:  print("Factorial of 0 is 1.")else:  for i in range(1,a+1):  fact\*=i  print(f"Factorial of {a} is:{fact}.")**17)Python Program to Display the multiplication Table**a =int(input("Enter a number:"))for i in range(1,11):  print(f"{a}\*{i}={a\*i}")**18)Python Program to Print the Fibonacci sequence**a=int(input("Enter the first number:"))b=int(input("Enter the second number:"))n=int(input("Enter the size of series:"))for i in range(n):  print(a)  a, b = b, a + b**19)Python Program to Print the digits count**a= int(input("Enter a Number:"))count=0while a>0:a=a//10count+=1print(count)-----------------------------a= int(input("Enter a Number:"))print(len(str(a)))**20)Python Program to Check Armstrong Number**a= int(input("Enter a Number:"))d=an=len(str(a))b=0Sum=0for i in range (n):b=a%10a=a//10Sum+=b \*\* nif Sum==d: print(f'{d} is an Armstrong Number.')else: print(f'{d} is not an Armstrong Number.')**21)To find out the Power**a= int(input("Enter a Number:"))n= int(input("Enter a Number:"))power=1for i in range(1,n+1):power\*=aprint(power)--------------------------print(pow(a,n))print(a\*\*n)**22)Python Program to Find the Sum of Natural Numbers**n=int(input("Enter the Number:"))Sum=0for i in range (1,n+1):Sum+=iprint(Sum)**23)Python Program to Display Powers of 2 Using Anonymous Function**n=int(input("Enter the number:"))result = list(map(lambda x: 2 \*\* x, range(n)))for i in range(n):print(result[i])**24)Python Program to Find Numbers Divisible by Another Number**n=int(input("Enter the number:"))result = list(filter(lambda x: n%x==0, range(1,n+1)))for i in range(len(result)):print(result[i])--------------------n=int(input("Enter the number:"))for i in range(1,n+1):if n%i==0:print(i)my\_list = [12, 65, 54, 39, 102, 339, 221,]result = list(filter(lambda x: (x % 13 == 0), my\_list))print("Numbers divisible by 13 are",result)**25)Python Program to Convert Decimal to Binary, Octal and Hexadecimal**n = int(input("Enter the number:"))print(bin(n),'in binary')print(oct(n),'in octal')print(hex(n),'in hexadecimal')**26)Python Program to Find ASCII Value of Character**c=input("Enter a character:")print("The ASCII value of '" + c + "' is", ord(c))**27)Python Program to Find ASCII Value of characters in a text**c=input("Enter a string:")ascii\_values =[v.encode('ascii')[0] for i in text]print(ascii\_values)**28)Python Program to Find HCF or GCD**a,b=map(int,input("Enter two numbers:").split())

if a>b:

Range=b

else:

Range=a

result= list(filter(lambda x: a%x==0 and b%x==0, range(1,Range+1)))

Max=1

for i in range(len(result)):

if result[i]>Max:

Max=result[i]

print(f"The Highest common Factor for {a} and {b} is:{Max}")**29)Python Program to Find LCM**def compute\_lcm(a, b):

if a > b:

Range = a

else:

Range = b

while True:

if Range % a == 0 and Range % b == 0:

lcm = Range

break

Range += 1

return lcm

a, b = map(int, input("Enter two numbers: ").split())

print(compute\_lcm(a, b))

**30)Python Program to Find the Factors of a Number**

a = int(input("Enter the Number: "))

result = list(filter(lambda x: a % x == 0, range(1, a + 1)))

count = 0

for i in range(len(result)):

print(result[i])

count += 1

print(f"Total Number of factors for {a} is: {count}.")**31) Python Program to mini calculator**

def calculator(a, b, c):

match c:

case "+":

return a + b

case "-":

return a - b

case "\*":

return a \* b

case "%":

if b==0 :

return "Error: Division(Modulus) by zero not allowed!"

return a%b

case "/":

if b==0 :

return "Error: Division by zero not allowed!"

return a / b

case "//":

if b==0 :

return "Error:Floor Division by zero not allowed!"

return a // b

case \_:

return "invalid operator"

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

c = input("Enter the operarator like +,-,%,/,//,\*:")

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

result = calculator(a, b, c)

print(result)

**32)Python Program to draw 5 random cards**

import random, itertools

deck=list(itertools.product(range (1,14),['Spade','Club','Heart','Diamond']))

random.shuffle(deck)

for i in range (5):

print(deck[i][0],'of',deck[i][1])

**33)Python Program to Print the calendar of a month**  
import calendar

a=int(input("Enter the Month:"))

b=int(input("Enter the Year:"))

cal=calendar.month(b,a)

print(cal)

**34) Python Program to print Fibonacci series using recursion.**

def fibonacci(n):

if n <= 0:

return "Invalid input"

elif n == 1:

return 0

elif n == 2:

return 1

else:

return fibonacci(n-1) + fibonacci(n-2)

n=int(input("Enter the range:"))

for i in range(n):

print(f"Fibonacci({i}) =", fibonacci(i))

**35)Python Program to find the sum of natural numbers using recursion.**

def Sum\_numbers(n):

if n<=1:

return n

else:

return Sum\_numbers(n-1)+n

num = int(input("Enter the range: "))

if num <= 0:

print("No numbers to perform sum.")

else:

print(Sum\_numbers(num))

**36) Python Program to find the Factorial of a number using recursion.**

def Fact(n):

if n<=1:

return n

else:

return Fact(n-1)\*n

num = int(input("Enter the range: "))

if num <= 0:

print("No numbers to perform sum.")

else:

print(Fact(num))

**37)Python Program to covert decimal to binary using recursion.**

def ConvertBinary(n):

if n>1:

ConvertBinary(n//2)

print(n%2,end='')

n=int(input(“Enter a decimal number:”)

ConvertBinary(n)

**38)Python Program to create and print matrix**

rows=int(input("Enter number of rows of matrix:"))

col=int(input("Enter number of column of matrix:"))

Matrix=[]

for i in range(rows):

row=[]

for j in range(col):

val=int(input())

row.append(val)

Matrix.append(row)

for i in Matrix:

print(i)

**39)Python Program to add two matrices**

row=int(input("Enter the number of rows in first Matrix:"))

col=int(input("Enter the number of column in first Matrix:"))

Matrix1=[]

Matrix2=[]

for i in range(row):

rows=[]

for j in range (col):

val=int(input("Enter the values in first matirx:"))

rows.append(val)

Matrix1.append(rows)

for i in range(row):

rows=[]

for j in range (col):

val=int(input("Enter the values in second matrix:"))

rows.append(val)

Matrix2.append(rows)

Matrix3=[]

for i in range(row):

rows=[]

for j in range(col):

rows.append(Matrix1[i][j]+Matrix2[i][j])

Matrix3.append(rows)

for r in Matrix3:

print(r)

**40)Python Program to transpose of Matrix**

row=int(input("Enter the number of rows in first Matrix:"))

col=int(input("Enter the number of column in first Matrix:"))

Matrix1=[]

for i in range(row):

rows=[]

for j in range (col):

val=int(input("Enter the values in first matirx:"))

rows.append(val)

Matrix1.append(rows)

Matrix2=[]

for i in range(col):

rows=[]

for j in range(row):

rows.append(Matrix1[j][i])

Matrix2.append(rows)

print("Matrix Entered:")

for r in Matrix1:

print(r)

print("Transpose of Matrix:")

for r in Matrix2:

print(r)

------------------------------------------------------------------------------------

#using list comprehension  
row=int(input("Enter the number of rows in first Matrix:"))

col=int(input("Enter the number of column in first Matrix:"))

Matrix1=[]

for i in range(row):

rows=[]

for j in range (col):

val=int(input("Enter the values in first matirx:"))

rows.append(val)

Matrix1.append(rows)

Matrix2=[[Matrix1[j][i] for j in range(len(Matrix1))] for i in range(len(Matrix1[0]))]

print(Matrix2)

**41) Python Program to check a String Palindrome.**

string=input("Enter a String:")

rev\_string= string[::-1]

if rev\_string== string:

print("Its a palandrome.")

else:

print("Not a palandrome.")

**42) Python Program to remove Punctuation Marks in a String.**

string=input("Enter a String:")

punc='''!()\_[]{};:'"/,<>.?'''

empty\_str=''

for i in string:

if i not in punc:

empty\_str+=i

print(empty\_str)

**43)Python Program for Multiplication of Matrix**  
row1=int(input("Enter Number of rows in first Matrix:"))

col1=int(input("Enter Number of column in first Matrix:"))

row2=int(input("Enter Number of rows in second Matrix:"))

col2=int(input("Enter Number of column in second Matrix:"))

Matrix=[]

if col1!=row2:

print("Multiplication not possible.first matrix column and second matrix row size should be same.")

else:

A = [list(map(int, input().split())) for \_ in range(row1)]

B = [list(map(int, input().split())) for \_ in range(row2)]

for i in range(len(A)):

row=[]

for j in range(len(B[0])):

val

for k in range(len(B)):

val+=A[i][k]\*B[k][j]

row.append(val)

Matrix.append(row)

for i in Matrix:

print(i)

**44)Python Program to Sort words in Alphabetic order.**

String=input("Enter the String:")

w=String.split()

for i in range(len(w)):

w[i]=w[i].lower()

w.sort()

print(w)

**45) Python Program to do Operations on Sets.**

A=set(map(int,input("Enter first Set by separating values with , :").split(',')))

B=set(map(int,input("Enter Second Set by separating values with , :").split(',')))

Op=input('''Select the operation like For Union '|'

For Intersection '&'

For Difference '-'

For Symmetric Difference '^' ''')

match Op:

case '|':

print("The Union of A and B is:",A|B)

case '&':

print("The Intersection of A and B is:",A&B)

case '-':

print("The Difference of A and B is:",A-B)

case '^':

print("The Symmetric Difference of A and B is:",A^B)

case \_:

print("Invalid operation")

**46) Python Program to find the total count of the Vowels in a String.**

a=input("Enter the Sring:")

vowels='aeiou'

a=a.casefold()

count=0

for i in a:

if i in vowels:

count+=1;

print(count)

**47) Python Program to find the individual count of the Vowels in a String.**

a=input("Enter the Sring:")

vowels='aeiou'

a=a.casefold()

count\_a=0

count\_e=0

count\_i=0

count\_o=0

count\_u=0

for i in a:

if i in vowels:

match i:

case 'a':

count\_a+=1

case 'e':

count\_e+=1

case 'i':

count\_i+=1

case 'o':

count\_o+=1

case 'u':

count\_u+=1

print(count\_a ,count\_e,count\_i,count\_o,count\_u,sep='\n')

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#using fromkeys  
a=input("Enter the Sring:")

vowels='aeiou'

a=a.casefold()

count={}.fromkeys(vowels,0)

for i in a:

if i in vowels:

count[i]+=1

print(count)

**48) Python Program to Print Right angled Triangle using \*.**

n=int(input("Enter the number of rows:"))

a=''

for i in range(n):

a+='\*'

print(a)

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#using nested loops  
rows = int(input("Enter number of rows: "))

for i in range(rows):

for j in range(i+1):

print("\* ", end="")

print()

**49) Python Program to print half pyramid using numbers.**

n=int(input("Enter the number of rows:"))

for i in range(n):

for j in range(i+1):

print(j+1,end=' ')

print()

**50) Python Program to print half pyramid using Alphabets.**

n=int(input("Enter the number of rows:"))

a=65

for i in range(n):

for j in range(i+1):

print(chr(a+j),end=' ')

print()

**51) Python Program to Inverted half pyramid using \*.**

n=int(input("Enter the number of rows:"))

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

for j in range(i):

print("\*",end="")

print()

**52) Python Program to Inverted half pyramid using numbers.**

n=int(input("Enter the number of rows:"))

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

for j in range(i):

print(i,end="")

print()

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

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

for j in range(i):

print(j+1,end="")

print()

**53) Python Program to Inverted half pyramid using Alphabets.**

n=int(input("Enter the number of rows:"))

ascii\_value=65

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

for j in range(i):

print(chr(ascii\_value),end="")

ascii\_value+=1

print()

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n=int(input("Enter the number of rows:"))

ascii\_value=65+n

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

ascii\_value-=1

for j in range(i):

print(chr(ascii\_value),end="")

print()

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

ascii\_value=65

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

for j in range(i):

print(chr(ascii\_value+j),end='')

print()

**54)Python Program to print Right-Aligned Half Pyramid using \* and spaces.**

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

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

for j in range(n - i):

print(" ", end="")

for k in range(i):

print("\* ", end="")

print()

**55)Python Program to print full Pyramid using \* and spaces.**

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

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

for j in range(n - i):

print(" ", end="")

for k in range(2\*i-1):

print("\* ", end="")

print()

**56)Python Program to print full Pyramid using numbers and spaces.**

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

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

for j in range(n - i):

print(" ", end="")

for k in range(2\*i-1):

print(f"{i} ", end="")

print()

**57)Python Program to print full Pyramid using numbers and spaces.**

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

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

for j in range(n - i):

print(" ", end="")

for k in range(2\*i-1):

print(f"{i+k} ", end="")

print()

**58)Python Program to print Inverted Pyramid using numbers and spaces.**

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

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

for j in range(n-i):

print(' ',end='')

for j in range(2\*i-1):

print("\*",end='')

print()

**59)Python Program to print Pascal’s triangle using numbers and spaces.**

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

coef=1

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

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

print(' ',end='')

for j in range(0,i):

if j==0 or i==0:

coef = 1

else:

coef = coef \* (i - j)//j

print(coef, end = " ")

print()

**60)Python Program to Access Index of a List Using for Loop**

#using enumerate

nums = list(map(int, input("Enter numbers separated by space: ").split()))

for index,value in enumerate(nums):

print(index,value)

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#starting index value from 1

nums = list(map(int, input("Enter numbers separated by space: ").split()))

for index,value in enumerate(nums,start=1):

print(index,value)

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#without enumerate

nums = list(map(int, input("Enter numbers separated by space: ").split()))

for i in range(len(nums)):

print(i,nums[i])

**61)Python Program to Access Index of a List Using for Loop**

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

n\_list=[]

for i in range(n):

rows = list(map(int, input("Enter numbers separated by space: ").split()))

n\_list.append(rows)

flat\_list = [num for sublist in n\_list for num in sublist]

print(flat\_list)

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#using nested loops

flat\_list = []

for sublist in n\_list:

for num in sublist:

flat\_list.append(num)

print(flat\_list)

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flat\_list = list(itertools.chain(\*n\_list))

print(flat\_list)

**62)Python Program to Slice Lists**

n\_list=list(map(int,input("Enter 10 values:").split()))

print(n\_list)

print(n\_list[2:]) #After mentioned Index

print(n\_list[2:4]) #between two index

print(n\_list[::2]) #specified intervals

print(n\_list[::-1]) #reverse the List

print(n\_list[1:6:2]) #between 1 and 6 with interval 2

**63)Python Program to Check If a List is Empty**

my\_list = []

if not my\_list:

print("the list is empty")

#using length

n\_list =[]

if not len(n\_list):

print("the list is empty")

**64)Python Program to Concatenate Two Lists**

n\_list1=list(map(int,input("Enter values:").split()))

n\_list2=list(map(int,input("Enter values:").split()))

final\_list= n\_list1 + n\_list2

print(final\_list)

**65) Python Program to Split a List Into Evenly Sized Chunks**

def split\_chunks(lst, n):

for i in range(0, len(lst), n):

yield lst[i:i+n]

n\_list=list(map(int,input("Enter values:").split()))

chunk\_size = 3

chunks = list(split\_chunks(n\_list, chunk\_size))

print("Chunks:", chunks)

**66) Python Program to Split a List Into Evenly Sized Chunks**

def split\_chunks(lst, n):

for i in range(0, len(lst), n):

yield lst[i:i+n]

n\_list=list(map(int,input("Enter values:").split()))

chunk\_size = 3

chunks = list(split\_chunks(n\_list, chunk\_size))

print("Chunks:", chunks)

**67) Python Program to Convert String to Datetime**

from datetime import datetime

date=input("Enter date in this format APR 21 2022 10:54AM:")

Date = datetime.strptime(date, '%b %d %Y %I:%M%p')

print(type(Date))

print(Date)

**68) Python Program to Get a Substring of a String**

a=input("Enter the String:")

print(a[2:6])

print(a[2:])

print(a[:-1])

**69) Python program to find the first non-repeating character in a string.**

def unique\_char(text):

count = {}

for c in text:

count[c] = count.get(c, 0) + 1

for c in text:

if count[c] == 1:

return c

return None

a = input("Enter a string: ")

print(unique\_char(a))

**70) Python program to check if two strings are anagrams of each other.**

def is\_anagram(a, b):

return sorted(a) == sorted(b)

x = input("Enter first string: ")

y = input("Enter second string: ") b

print(is\_anagram(x, y))