**Conditional Statement**

1. **Program to find greatest between two numbers.**

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

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

if(a >= b):

print(a, "is greater")

else:

print(b, "is greater")

**2. Program to check if a number is even or odd.**

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

if (num % 2) == 0:

print("{0} is Even".format(num))

else:

print("{0} is Odd".format(num))

**3. Program to find greatest among three numbers (using elif ladder and nested if).**

num1 = 10

num2 = 14

num3 = 12

if (num1 >= num2) and (num1 >= num3):

largest = num1

elif (num2 >= num1) and (num2 >= num3):

largest = num2

else:

largest = num3

print("The largest number is", largest)

**4.** **Program to check whether an entered year is a leap year or not.**

year = 2000

if (year % 4) == 0:

if (year % 100) == 0:

if (year % 400) == 0:

print("{0} is a leap year".format(year)) #leap year is 366

else:

print("{0} is not a leap year".format(year

else:

print("{0} is a leap year".format(year)) ))#365 is not leap year(common yr)

else:

print("{0} is not a leap year".format(year))

**5.** **Program to find square roots of a given number.**

number = int(input("Enter a number to find the square root : "))

if number < 0 :

print("Please enter a valid number.")

else :

sq\_root = number \*\* 0.5

print("Square root of {} is {} ".format(number,sq\_root))

**OR**

import math

number = float(input(" Please Enter any numeric Value : "))

squareRoot = math.sqrt(number)

print("The Square Root of a Given Number {0} = {1}".format(number, squareRoot))

**For Loop**

**6. Program to print numbers from 1 to 10.**

for i in range(1, 11):

print(i)

**7. Program to find sum of first n natural numbers.**

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

if num < 0:

print("Enter a positive number")

else:

sum = 0

# use while loop to iterate un till zero

while(num > 0):

sum += num

num -= 1

print("The sum is",sum)

**8. Program to find sum of squares of odd numbers upto n terms.**

maximum = int(input(" Please Enter the Maximum Value : "))

Oddtotal = 0

for number in range(1, maximum+1):

if(number % 2 != 0):

print("{0}".format(number))

Oddtotal = Oddtotal + number

print("The Sum of Odd Numbers from 1 to {0} = {1}".format(number, Oddtotal))

**OR**

def squaresum(n) :

    return (n \* (n + 1) \* (2 \* n + 1)) // 6

# Driven Program

n = 4

print(squaresum(n))

**9. Program to find factorial of a given number.**

num = 7

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

factorial = 1

# check if the number is negative, positive or zero

if num < 0:

print("Sorry, factorial does not exist for negative numbers")

elif num == 0:

print("The factorial of 0 is 1")

else:

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

factorial = factorial\*i

print("The factorial of",num,"is",factorial)

10. **Program to print Fibonacci series upto n terms.**

x=int(input("Enter the number"))

first=0

second=1

for i in range(x):

print(first) #0,1,2

temp=first #0,1,2

first=second #0=1,1=1,1=2

second=temp+second #0+1is1,1+1=2,1+2=3,2+3=5

**11. Program to check whether a number is prime or not.**

x=int(input("Enter the number"))

print(x) #7,8

for i in range(2,x):

if x%i==0:

print("Not Prime")

break

else:

print("Prime")

break

**12. Program to check if a number is divisible by 7 or not.**

num=int(input("Enter the number"))

if num%7==0:

print("%d is divisible by 7"%num)

else:

print("%d is not divisible by 7 "%num)

**13. Program to find sum of digits of a given number.**

Number = int(input("Please Enter any Number: "))

Sum = 0

while(Number > 0):

Reminder = Number % 10

Sum = Sum + Reminder

Number = Number //10

print("\n Sum of the digits of Given Number = %d" %Sum)

**14. Program to find reverse of a given number.**

Number = int(input("Please Enter any Number: "))

Reverse = 0

while(Number > 0):

Reminder = Number %10

Reverse = (Reverse \*10) + Reminder

Number = Number //10

print("\n Reverse of entered number is = %d" %Reverse)

**15. Program to check if a number is an Armstrong number or not.**

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

temp=num

result=0

order=len(str(num))

while(temp>0):

digit=temp%10

result=result+digit\*\*order

temp=temp//10

if num == result:

print(num,"is an Armstrong number")

else:

print(num,"is not an Armstrong number")

**16. Program to check if a number is Palindrome or not.**

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

temp=n

rev=0

while(n>0):

dig=n%10

rev=rev\*10+dig

n=n//10

if(temp==rev):

print("The number is a palindrome!")

else:

print("The number isn't a palindrome!")

**17. Program to print all prime number in a given range.**

lower = int(input("Enter lower range: "))

upper = int(input("Enter upper range: "))

for num in range(lower,upper + 1):

if num > 1:

for i in range(2,num):

if (num % i) == 0:

break

else:

print(num)

**18. Program to print patterns(discuss all common patterns).**

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

# outer loop to handle number of rows

for i in range(0, n):

# inner loop to handle number of columns

# values is changing according to outer loop

for j in range(0, i + 1):

# printing stars

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

# ending line after each row

print()

**OR**

# This is the example of print simple reversed right angle pyramid pattern

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

k = 2 \* rows - 2 # It is used for number of spaces

for i in range(0, rows):

for j in range(0, k):

print(end=" ")

k = k - 2 # decrement k value after each iteration

for j in range(0, i + 1):

print("\* ", end="") # printing star

print("")

**19. Python Program to Display the multiplication Table.**

num = 12

# To take input from the user

# num = int(input("Display multiplication table of? "))

# Iterate 10 times from i = 1 to 10

for i in range(1, 11):

print(num, 'x', i, '=', num\*i)

**20. Python Program To Display Powers of 2 Using Anonymous Function.**

terms = 10

# Uncomment code below to take input from the user

# terms = int(input("How many terms? "))

# use anonymous function

result = list(map(lambda x: 2 \*\* x, range(terms)))

print("The total terms are:”,terms)

for i in range(terms):

print("2 raised to power",i,"is",result[i])

**21. Python Program to Convert Decimal to Binary, Octal and Hexadecimal.**

dec = 344

print("The decimal value of", dec, "is:")

print(bin(dec), "in binary.")

print(oct(dec), "in octal.")

print(hex(dec), "in hexadecimal.")

**22. Python Program to Find HCF.**

def compute\_hcf(x, y):

# choose the smaller number

if x > y:

smaller = y

else:

smaller = x

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

if((x % i == 0) and (y % i == 0)):

hcf = i

return hcf

num1 = 54

num2 = 24

print("The H.C.F. is", compute\_hcf(num1, num2))

**23. Python Program to Add Two Matrices.**

X = [[12,7,3],

[4 ,5,6],

[7 ,8,9]]

Y = [[5,8,1],

[6,7,3],

[4,5,9]]

result = [[0,0,0],

[0,0,0],

[0,0,0]]

# iterate through rows

for i in range(len(X)):

# iterate through columns

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

result[i][j] = X[i][j] + Y[i][j]

for r in result:

print(r)

**24. Python Program to Sort Words in Alphabetic Order.**

my\_str = "Hello this Is an Example With cased letters"

# To take input from the user

#my\_str = input("Enter a string: ")

# breakdown the string into a list of words

words = [word.lower() for word in my\_str.split()]

# sort the list

words.sort()

# display the sorted words

print("The sorted words are:")

for word in words:

print(word)

**25. Python Program to Count the Number of Each Vowel**

vowels = 'aeiou'

ip\_str = 'Hello, have you tried our tutorial section yet?'

# make it suitable for caseless comparisions

ip\_str = ip\_str.casefold()

# make a dictionary with each vowel a key and value 0

count = {}.fromkeys(vowels,0)

# count the vowels

for char in ip\_str:

if char in count:

count[char] += 1

print(count)

### 26. Python Program to print Reverse right angle pyramid.

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

k = 2 \* rows - 2  # It is used for number of spaces

for i in range(0, rows):

    for j in range(0, k):

        print(end=" ")

    k = k - 2   # decrement k value after each iteration

    for j in range(0, i + 1):

        print("\* ", end=" ")  # printing star

    print("")

### 27. Python Program to print pattern pyramid.

### num=int(input("Enter the number of rows:")) #4

### for i in range(0,num):

### for j in range(0,num-i-1):

### print(end=" ")

### for j in range(0,i+1):

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

### print()