***Day 9 task***

### ***1) Write a program to loop through a list of numbers and add +2 to every value to elements in list***

list1=[2,4,5,7,8,9,10]

result=[]

**for** i **in** list1:

result.append(i+2)

print(result)

***Output:-***

[4,6,7,9,10,11,12]

### ***2)Write a program to get the below pattern***

***54321  
4321  
321  
21  
1***

**for** i **in** range(5,0,-1):

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

print(j,end=' ')

print()

***Output:-***

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

### ***3)Python Program to Print the Fibonacci sequence***

x,y=5,6

while y<100:

print(y)

x,y = y,x+y

***Output:-***

6

11

17

28

45

73

### ***4) Explain Armstrong number and write a code with a function***

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

sum1 = 0

temp1 = num

while temp1 > 0:

digit1 = temp1 % 10

sum1 += digit1\*\*3

temp1 //= 10

if num == sum1:

print(num,"is an Armstrong number")

else:

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

***Output:-***

Enter a number: 153

153 is an Armstrong number

### ***5)Write a program to print the multiplication table of 9***

**for** i **in** range(1,11):

print("9 x ",i,' = ',i\*9 )

***Output:-***

9 x 1 = 9

9 x 2 = 18

9 x 3 = 27

9 x 4 = 36

9 x 5 = 45

9 x 6 = 54

9 x 7 = 63

9 x 8 = 72

9 x 9 = 81

9 x 10 = 90

### ***6)Check if a program is negative or positive***

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

if num > 0:

print("It is positive number")

elif num == 0:

print("It is Zero")

else:

print("It is a negative number")

***Output:-***

Input a number:-153

It is a negative number

### ***7)Write a program to convert the number of days to ages***

**def** find( number\_of\_days ):

year = int(number\_of\_days / 365)

print(year,'Years ago !')

no\_days=675

find(no\_days)

***Output:-***

1 years ago

no\_days=1675

find(no\_days)

***Output:-***

4 years ago

### ***8) Solve Trigonometry problem using math function write a program to solve using math function***

**import** **math**

**def** trigo(n,m):

**if** n=='sin':

**return** math.sin(m)

**elif** n=='cos':

**return** math.cos(m)

**elif** n=='cosin':

**return** math.cosine(m)

**elif** n=='tan':

**return** math.tan(m)

**elif** n=='sec':

**return** math.sec(m)

**elif** n=='cosec':

**return** math.cosec(m)

trigo('sin',90)

***Output:-***

0.8939966636005579

trigo('cos',180)

***Output:-***

-0.5984600690578581

trigo('tan',45)

***Output:-***

1.6197751905438615

### ***9) create a basic calculator using if condition only***

**def** calculate():

print('+')

print('-')

print('\*')

print('/')

print('%')

print('\*\*')

operation = input("Select an operator:n")

print("Enter two numbers")

number\_1 = int(input())

number\_2 = int(input())

**if** operation == '+': *# To add two numbers*

print(number\_1 + number\_2)

**elif** operation == '-': *# To subtract two numbers*

print(number\_1 - number\_2)

**elif** operation == '\*': *# To multiply two numbers*

print(number\_1 \* number\_2)

**elif** operation == '/': *# To divide two numbers*

print(number\_1 / number\_2)

**elif** operation == '%': *# To remainder two numbers*

print(number\_1 % number\_2)

**elif** operation == '\*\*': *# To num1 exponent num2*

print(number\_1 \*\* number\_2)

**else**:

print('Invalid Input')

calculate()

***Output:-***

+

-

\*

/

%

\*\*

Select an operator:n\*\*

Enter two numbers

5

6

15625