

1. TO CHECK ASCII VALUE OF ANY ENGLISH ALPHABETS WE USE ord OR chr.

```
a="A"
b="Z"
c=ord(a)
d=ord(b)
print(f"ascii value is {c}\nascii value of is {d}")
```

Program to print current Day,date and time.

```
import time
t = time.localtime(time.time())
localtime = time.asctime(t)
str = "Current Time:" + time.asctime(t)
print(str);
```

EXERCISE - 1 Total no. of question = 20

1.program to print two different string "hello" and "world" in different.

```
print("\nhello\nworld")
```

2.program to print two different string "hello" and "world" in single line.

```
print("hello" "world")
```

3.program to add two input value.

```
a=int(input('enter the value of a:'))
b=int(input('enter the value of b:'))
print(f'sum of a and b is = {a+b}')
```

4. program to subtract two integer entered value.

```
a=int(input("enter the value of a in integer:"))
b=int (input ("enter the value of b in integer :"))
print(f'sum of two integer inter value is = {a+b}')
```

5. program to multiply two entered integer value.

```
a=int (input ("enter the value of a:"))
b=int (input ("enter the value of b in integer:"))
print(f"product of a and b is = {a*b}')
```

6. program to input two integer value and calculate first number raised to the power second number.

```
a=int (input ("enter the value of a:"))
b=int (input ("enter the value of b:"))
print(f"first number raised by power of second {a**b}')
```

7. program to find area and perimeter of rectangle, when required to input the length and breadth entered by user.

```
l=float (input ("length of rectangle:"))
b=float (input ("breath of rectangle:"))
print(f"perimeter of rectangle is = {2*(l+b)}\narea of rectangle is = {l*b}')
```

8. program to find the area and circumference of a circle, when the radius is entered by the user.

```
r=float(input ("enter the value of radius"))
print(f"circumference of circle is = {2*3.14*r}\nArea of circle is = {3.14*r**2}')
```

9.program to find the hypotenuse of a right angled triangle ,when base and height are entered by the user.

#let us consider the base=b & height=h H=hypotenuse

h=float (input ("enter height of right angled triangle:"))

b=float (input ("enter the base of | |:"))

print(f"Hypotenuse of right angled triangle abc is = {h**2+b**2}")

10.program to input two number and print the swapped value of them.

a=int (input ("enter the value of a: "))

b=int (input ("enter the value of b: "))

print(f"before swapped a = {a} and b = {b}\nafter swapped a = {b} and b = {a}")

11.program to find the number of currency notes of each types (Rs. 2000, Rs.500 and Rs. 100),

when the total number of currency notes counted altogether is minimum and there must be at

least a 100 rupee notes dispensed.The amount to be withdraw is to be entered by the user.

a=int(input("enter the amount of money for withdrawal:")) #a=amount

a=a-100

print(f"no. of 2000 notes is = {int (a/2000)}")

a=a%2000

print(f"no. of 500 notes is = {int (a/500)}")

a=a%500

print(f"no. of 100 rupees notes is = {int (1+(a/100))}")

12. program to find wheather the triangle is scalene, isosceles and right angled triangle or invalid when the sides of the triangle is entered by the user.

```
a=int (input ("enter the 1st side of triangle:"))
b=int (input ("enter the 2nd side of triangle:"))
c=int (input("enter the 3rd side of the triangle:"))
if a==b==c:
    print("triangle is eqilateral")
elif a==b or b==c or c==a:
    print("isosceles triangle")
elif a**2==b**2+c**2 or b**2==a**2+c**2 or c**2==a**2+b**2:
    print("Right angled triangle")
else:
    print("scalene triangle")
```

13. program to find the simple interest and the total amount when the principal, rate of Interest and Time are entered by the user.

```
p=int (input ("enter the principal:"))
r=int (input("enter the value of rate:"))
t=int (input ("enter the time in month:"))
print(f"SIMPLE INTEREST IS = {(p*r*t)/100}")
i=int ((p*r*t)/100)
print(f"TOTAL AMOUNT IS = {p+i}")
```

14. program to find the compound interest compounded annually and the total amount when the principal, rate of interest and time are entered by the user.

(Total amount) $A = P (1 + r/n)^{nt}$

```
# (comound intrest)  $C=p(1+r/n)^{nt} - p$ 
p=float (input ("enter the principal:"))
r=float (input ("enter the rate:"))
t=float (input ("enter the time:"))
n=float (input ("number of compound frequency:"))
a=(1+r/n)
c=(p*a**n*t)-p
b=p+c
print(f"Compound intrest is = {c}\nTotal amount is = {b}")
```

```
# 15.program to calculate the number of rectangular tiles required to cover a
rectangular floor if
# the dimension of the floor and the dimension of tiles are entered by the
user.
a=int (input ("enter the length of floor:"))
b=int (input ("enter the breath of floor:"))
c=int (input ("enter the length of tile:"))
d=int (input ("enter the breath of tile:"))
A=a*b
a=c*d
print(f"No. of tile required to cover is = {int (A/a)}")
```

```
# 16.program to input the number of overs in the cricket match and output
the maximum runs a
# player can score in the match.Assume that there are no extra runs or NO
balls in the match
# played for example, in a 50 over match,the miximum runs scored are 1653.
over=int (input ("enter the no. of over:"))
max=(over-1)*33
```

```
Max=36+max
print(f"Maximum run can scored in {over} over is = {Max}")
```

```
# input:
# over=2
# output:
# Maximum run can scored in 2 over is = 69
```

```
# 17.program to input the number of heads and legs in a farm and identify
the number of hen
# and goats in the farm.for example,if there are 340 heads and 1060 legs
there are 150 hen and 190 goats.
head=int (input ("enter the no. of head:"))
leg=int (input ("enter the no. of leg:"))
goat=(leg-2*head)/2
hen=head-goat
print(f"Total number of Goat is = {goat}\nTotal number of Hen is = {hen}")
```

```
a="vijjaykumar"=-----
print(f"{a[3:6]}")-----
```

```
# 18.program to find wheather the input number is even or odd.
a=int (input("enter any integer number:"))
if (a%2)==0:
    print("even")
else:
    print("odd")
```

19. program to input two number and subtract the smaller number from the greatest number.

```
a=int (input ("enter any number:"))
```

```
b=int (input ("enter any number:"))
```

```
if a>b:
```

```
    print(f"Difference is = {(a-b)}")
```

```
else:
```

```
    print(f"Difference is = {(b-a)}")
```

20. A man has certain number of apples.

if he picks them in a group of 7, he can pick all of them.

if he picks them in a group of 6, 1 apple is left behind.

if he picks them in a group of 5, 1 apple is left behind.

if he picks them in a group of 4, 1 apple is left behind.

A=7 #total no. of apple

```
b=int (input ("enter no. of apple in left hand:"))
```

```
c=int (input ("enter no. of apple in right hand:"))
```

```
if (b+c)==7:
```

```
    print("NO any apple left")
```

```
elif (b+c)>7:
```

```
    print("invalid enter")
```

```
else:
```

```
    print(f"No. of apple left is = {A-(b+c)}")
```

EXERCISE - 1 COMPLETED.

Class work

tuesday 14-02-2023

```
# 1.program to print no of day in all the month.
m=int (input("enter the value of month like for january press 1 : "))#
m=month
d=(m<=7)*(30+(m%2))+(m>7)*(31-(m%2)) - (m==2)*2      # d=day
print(d)
```

2.program take the age of man and name and print that the eligible for vote or not by using the logical operator.

```
a=int(input ("enter your age:"))
b=str(input ("enter your name:"))
(a>=18) and print( f"{b} is eligible for vote")
(a<18) and print(f"SORRY {b} you are not eligible for vote")
```

ALTERNATE METHOD

```
a=int(input ("enter your age:"))
b=str(input ("enter your name:"))
(a<18) or print(f"{b} you are eligible for vote")
(a>=18) or print(f"{b} you are not eligible for vote ")
```

3.program to print check wheather the input string are sustring of other string or not.

```
a=input(("enter the string:"))
b=input(("enter the other string:"))
print(b in a)
print(b not in a)
```

4.example of xor and other operator.

```
a=68
```



```
b=22
c=a^b
print(c)
```

```
# 5.program to find the hamming distance of two number.
# hamming distance:-Distance between two number in bits.
a=int(input('enter the 1st number:'))
b=int (input("enter the 2nd number:"))
c=0
e=a^b
```

```
# 6.program to check the year is leap or not.
year=int (input("enter the year:"))
if (year%4==0 and year%100!=0):
    print(f"{year} is a leap year")
elif (year%400==0):
    print(f"{year} is a leap year")
else:
    print(f"{year} is not a leap year")
```

```
# 7.program to check the greatest number out of three input number by
user.
c=int (input ("enter the value of c:"))
a=int (input ("enter the value of a:"))
b=int (input ("enter the value of b:"))
```

```
if (a>=b) and (a>=c):
    print(f"{a} is greatest")
elif(b>=a) and (b>=c):
    print(f"{b} is greatest")
elif(c>=a) and (c>=b):
    print(f"{c} is greatest")
else:
    print("Good you are unique")
```

```
# EXAMPLE OF SHORT HAND IF ELSE (TERNARY)
a=int(input("enter the value of a:"))
print("even") if a%2==0 else print ("odd")
```

```
# 8.program to print the given number is positive negative or zero.
a=int (input("enter the number:"))
if(a>0):
    print("positive")
elif(a<0):
    print("negative")
else:
    print('Zero')
```

```
# note:-by default the value of sep keyword argument
# EXAMPLE
a=10
b=3
print(a/b)
print(a//b)
```

```
print(a,'divide',b,'=',a//b,sep='*')
```

to not change the line in python by default we use

```
a=10
```

```
b=3
```

```
print(a,end=' ')
```

```
print(b,end=' ')
```

```
print(a,end='*')
```

note:-by default the value of end keyword argument is in new line character but we can change it by assinging a new value(string) to it.

note:-by default python give float value up to 16 digit after the decimal.

using of dot format in printing the python programming.

```
a=10
```

```
b=3
```

```
print('{0} divide {1} is {2}'.format(a,b,a/b))
```

```
print('a={0}'.format(a))
```

limitation

1.index remembering

using of formated string

using of float decimal value op to what time need

```
a=10
```

```
b=3
```

```
print(f"{a} divide {b} is = %.{a/b} \n and also {a//b}")
```

```
print("%d divide %d is %.f(a,b,22/7)")
```

```
print("%d divide %d is %.3f(a,b,a/b)")
```

CW today is tuesday 2-feb 2023

QUESTION

1.program to check the greatest(maximum) of three number given by the

user.

```
a=int(input("enter the value of a:"))
b=int (input ("enter the value of b:"))
c=int(input ("enter the value of c:"))
d=(a>b) and (b>c)
print(f"greatest number is = {a}")
e=(b>a) and (b>c)
print(f"Greatest number is = {b}")
f=(c>a) and (c>b)
print(f"Greatest number is = {c}")
```

2.program to check the types of triangle or to check the invalid
condition ---sum of two side must be greater than the 3rd side so triangle
will valid

```
a=int (input("enter the side of triangle:"))
b=int (input("enter the side of triangle:"))
c=int (input("enter the side of triangle:"))
if((a+b)>c and (b+c)>a and (c+a)>b):
    print("Valid triangle")
else:
    print("Invalid triangle")
if(a==b==c):
    print("equilateral triangle")
elif((a==b and b!=c) or (b==c and c!=a) or (c==a and c!=b)):
    print("isosceles triangle")
elif (a**2==b**2+c**2 or b**2==a**2+c**2 or c**2==a**2+b**2):
    print("right angled triangle")
else:
    print("scalene triangle")
```

3. program to take the coordinate of point from user and print the quadrant, axis, or origin.

```
a=int (input("enter the coordinate of x axis:"))
b=int (input ("enter theh coordinate of y axis:"))
if (a==0 and b==0):
    print(f"point is at origin\nno quadrant\nno axis ")
elif (a==0 and b!=0):
    print(f"not at origin\non x axis\n1st quadrant")
elif(a>0 and b>0):
    print(f"1st quadrant\nnot on x and y axis")
elif(a<0 and b<0):
    print(f"3rd quadrant ")
elif(a<0 and b>0):
    print(f"2nd quadrant")
elif (a>0 and b<0):
    print(f"4th quadrant")
else:
    print(f"enter is invalid!")
```

4. program to check wheather the given number is divisible by the 7 or 3 or not.

```
a=int(input("enter the number:"))
if(a%7==0 or a%3==0):
    print(f"enter number is divisble")
else:
    print("enter the number is not divisible")
```

5. program to take the coordinate of centre of circle and area of circle and

coordinante of

an arbitrary point from the user and check wheather it lies inside circle outside circle or at boundary.

```
a=int (input("enter the x coordinate of center of circle:"))
```

```
b=int (input("enter the y coordinate of center of circle:"))
```

```
c=int (input("enter the x coordinate on the circle:"))
```

```
d=int (input("enter the y coordinate on the circle:"))
```

```
area=int (input("enter the area of circle:"))
```

```
r=(area/3.4)**(1/2)
```

```
d=((a-c)**2 + (b-d)**2)**(1/2)
```

```
if(d==0):
```

```
    print(f"point at the center")
```

```
elif(d>r):
```

```
    print(f"point outside the circle")
```

```
elif(d<r):
```

```
    print(f"point inside the circle")
```

```
else:
```

```
    print(f"ivalid")
```

HW.

if-elif-else

PYTHON PROGRAM TO MAKE A MINI CALCULATOR ?

```
a=int(input("enter the first number : "))
```

```
op = input("enter the operator you want to use {+,-,*,/,%,**} : ")
```

```
b=int(input("enter the second number : "))
```

```
if op=="+":
```

```
    print(a+b)
elif op=="-":
    print(a-b)
elif op == "*":
    print(a*b)
elif op=="/":
    print(a/b)
elif op=="%":
    print(a%b)
elif op=="**":
    print(a**b)
else:
    print("Thanku not possible operator!")
```

1. Program to find the maximum of the three entered numbers.

```
a=int(input("enter the no.:"))
b=int(input("enter the no.:"))
c=int(input("enter the no.:"))
if((a>b) and (b>c)):
    print(f"{a} is the maximum of three number")
elif((b>a) and (b>c)):
    print(f"{b} is the maximum of tyree number")
else:
    print(f"{c} is the maximum of three number")
```

2. Program to input the centre of a circle, radius of the circle and an arbitrary point P(x,y) and

determine whether the point is inside the circle, on the circle or outside the circle.

```
a=int(input("enter the coordinate of center of x axis:"))
```

```
b=int(input("enter the coordinate of center of y axis:"))
```

```
c=int(input("enter the coordinate of point of x axis:"))
```

```
d=int(input("enter the coordinate of point of y axis:"))
```

```
area=float(input("enter the area of of circle:"))
```

```
r=(area/3.14)**(1/2)
```

```
d=((c-a)**2+(d-a)**2)**(1/2)
```

```
print("OUTPUT:-")
```

```
if(d<r):
```

```
    print("point is inside the circle")
```

```
elif(d>r):
```

```
    print("point is outside the circle")
```

```
elif(d==0):
```

```
    print("point is origin itself")
```

```
else:
```

```
    print("not valid input")
```

3. Big Bazaar specifies its customers into three categories as Bronze, Silver and Gold. If the

shopping amount is greater than 25000, the category is GOLD. If the shopping amount is

between 10000 and 25000, the category is SILVER, otherwise the category is BRONZE. The

discount offered for GOLD customers is 20% of the shopping amount, for SILVER customers is

10% of the shopping amount and 5% otherwise. Design a program in python that asks the user

to input the total shopping amount, outputs the category and amount to be paid.


```

a=int(input("enter the shopping amount:"))
d1=(a*20)/100    #d1=discount of gold
d2=(a*10)/100
d3=(a*5)/100
a1=a-d1          #a1=amount to be paid by gold
a2=a-d2
a3=a-d3
if(a>25000):
    print(f"GOLD\nAmount to be paid = {a1}")
elif(a>10000 and a<25000):
    print(f"SILVER\nAmount to be paid = {a2}")
else:
    print(f"BRONZE\nAmount to be paid = {a3}")

```

4.Design a program in python to display the number of days left in the current year (2019), when

today's date is entered by the user in format of your choice.

```

a=int(input("enter the day month and year:"))
b=int(input("enter the day month and year:"))
c=int(input("enter the day month and year:"))

```

CLASS WORK

1.program to print all even number between the given range which are divisible by 6.

```

a=int (input ("enter the start value range :"))
b=int(input ("enter the stop value range :"))
while(a<b):

```

```
if(a%6==0):  
    print(a)  
    a=a+1
```

2.program to print no. from 100 to 1 in decending order using for in loop.

```
for i in range(100,0,-1):  
    print(i)
```

```
for i in range(1,100,1):    #to print in accending order  
    print(i)
```

3.program to print even number between range given range.

```
a=int(input ("enter the start value (even):"))  
b=int (input ("enter the stop value :"))  
for i in range(a,b,2):  
    print(i)
```

4.program to print the odd number in given range by user.

```
a=int (input ("enter start value(odd number) :"))  
b=int (input ("enter any number for stop value :"))  
for i in range (a,b,2):  
    print(i)
```

LOOP QUESTION

1.Program to find whether an entered number is prime or not.

```
a=int (input ("enter any number to check prime:"))
```

```
c=0
```

```
i=2
```

```
while (i<a):
```

```
    if a%i==0:
```

```
        c=c+1
```

```
        break
```

```
    i=i+1
```

```
if c==0:
```

```
    print("prime")
```

```
else:
```

```
    print("not prime")
```

2.Program to find the factorial of an entered number.

```
a=int (input ("enter any number for factorial :"))
```

```
for i in range (a,0,-1):
```

```
    f=a*i
```

```
    print(f"Factorial is = {f}")
```

```
    break
```

3.program to find the sum of digit of a given number by user.

```
a=int(input("enter the value of number:"))
```

```
sum=0
```

```
while(a>0):
```

```
    r=a%10
```

```
    sum=sum+r
```

```
    a=a//10
```

```
print(f"Sum of digit is = {sum}")
```

4.program to find the series of all three digits Armstrong numbers.

```
a=int(input("enter the lower case of armstrong number:"))
```

```
b=int(input("enter the upper case of armstrong number:"))
```

```
for i in range(a,b,1):
```

```
    sum=0
```

```
    temp=i
```

```
    while (temp>0):
```

```
        digit=temp%10
```

```
        sum=sum+digit**3
```

```
        temp=temp//10
```

```
    if i==sum:
```

```
        print(i)
```

PYTHON PROGRAM TO FIND THAT THE GIVEN NUMBER IS ARMSTRONG OR NOT ?

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

```
order = len(str(num))
```

```
temp = num
```

```
sum = 0
```

```
while temp > 0:
```

```
    digit = temp % 10
```

```
    sum += digit ** order
```

```
    temp //= 10
```

```
if num == sum:
```

```
    print(num, "is an Armstrong number")
else:
    print(num, "is not an Armstrong number")
```

5. program to display the table of an entered number in the following format.

```
# 2*1=2
# 2*2=4
# .....
# 2*10=20
a=2
for i in range(1,11,1):
    table=a*i
    print(f"2*{i}={table}")
```

6. There are N kids in a play Group. The kid with number K ($1 \leq K \leq N$) will be happy if he receives at least AK candies. There is C candies in all.

The school staff is interested in knowing whether it is possible to make all the N kids happy by giving each kid at least as many candies as he wants, that is, the K th kid should receive at least AK candies. Each candy can be given to only one kid. Print Yes if it is possible and No otherwise.

Input

Input N , C and N integers A_1, A_2, \dots, A_N .

Output

Yes if it possible to make all kids happy and No otherwise.

7. A teacher enters a classroom of 500 students. All the students were having their mobile phones in ON mode. The teacher asked the students to do the following tasks in the given order:

.Roll Number 1 shall toggle the mobile phones (ON to OFF and OFF to ON) of all students.

.Roll Number 2 shall toggle mobile phones (ON to OFF and OFF to ON) of all students whose Roll Number is a multiple of 2.

.Roll Number 3 shall toggle mobile phones (ON to OFF and OFF to ON) of all students whose Roll Number is a multiple of 3.

.Roll Number 4 shall toggle mobile phones (ON to OFF and OFF to ON) of all students whose Roll Number is a multiple of 4.

.And so on

.Roll Number 49 shall toggle mobile phones (ON to OFF and OFF to ON) of all students whose Roll Number is a multiple of 49.

.Roll Number 50 shall toggle mobile phones (ON to OFF and OFF to ON) of all students whose Roll Number is a multiple of 50.

Design a program that outputs the Roll number of students whose mobile phone is still in OFF mode.

8.Design a game between user and computer as follows:

The user has to pick less than 5 balls from the basket at a time.

Each user will be given his/her turn alternately.

The user who picks the last ball will lose the game.

The first turn is of the user.

The computer shall always win.

CLASSWORK

1.Program to print the following pattern in python

```
* * * * *  
* * * * *  
* * * * *  
* * * * *  
* * * * *
```

```
a=int(input ("enter the value row and column:"))
```

```
for i in range(a):
```

```
    print(a*(' * '))
```

```
# alternate method
```

```
r=int(input("enter:"))
```

```
for i in range(r):
```

```
    print(r*(" * "))
```

```
# 2.pattern
```

```
*
```

```
* *  
* * *  
* * * *  
* * * * *
```

LOOP sheet question

1.Print First 10 natural numbers using while loop.

```
i=1
```

```
while i<=10:
```

```
    print(i)
```

```
    i+=1
```

2.Print the following pattern

```
1  
1 2  
1 2 3  
1 2 3 4  
1 2 3 4 5  
1 2 3 4 5 6
```

3.Calculate the sum of all the number from 1 to given number.

```
n=int (input("enter :"))
```

```
sum =0
```

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

```
    sum =sum+i
```

```
print(sum)
```


4. program to print the multiplication table of given number.

```
n=int(input("enter any integer number: "))
```

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

```
    table = n*i
```

```
    print(f"{n} * {i} = {table}")
```

5. program to display a number from a list using loop.

SUM OF TWO NUMBER USING USER DEFINED FUNCTION IN PYTHON ?

```
def add(x,y):
```

```
    sum = x+y
```

```
    return sum
```

```
a=int(input("enter : "))
```

```
b=int(input("enter : "))
```

```
print(f"The sum of the {a} and {b} is = {add(a,b)}")
```

OTHER EXAMPLE OF FUNCTION BY MAKING USER DEFINED FUNCTION ?

```
def f(values):
```

```
    values[0] = 44
```

```
v = [1, 2, 3]
```

```
f(v)
```

```
print(v)
```

EXAMPLE OF RANDOM.SHUFFLE

```
import random
my_list = [1, 2, 3, 4, 5]
random.shuffle(my_list)
print(my_list)
```

SECOND EXAMPLE OF RANDOM.SHUFFLE

```
import random
a=["vijay","kumar","gupta"]
random.shuffle(a)
print(a)
```

OUTPUT OF THE FOLLOWING PROGRAM

```
names1 = ['Amir', 'Bear', 'Charlton', 'Daman']
names2 = names1
names3 = names1[:]
names2[0] = 'Alice'
names3[1] = 'Bob'
sum = 0
for ls in (names1, names2, names3):
    if ls[0] == 'Alice':
        sum += 1
    if ls[1] == 'Bob':
        sum += 10
print (f"sum is = {sum}")
```

OUTPUT == 12

PYTHON PROGRAM TO TAKE THE NUMEBR OF DAY FROM USER AND TELL HIM THAT HOW MUCH YEAR ,WEAK AND DAY ARE POSSIBLE IN THE GIVEN DAY ?

```
a=int(input("enter the numeber of day : "))
print(a//365)
print((a%365)//7)
print((a%365)%7)
```

python program to make the the login and registration page ?

```
def login():
    email=input("enter your roll number :")
    pas=input("enter your passwprd :")
    ptr = open("vijay.txt",'r')
    a=ptr.read()
    if (email in a and pas in a):
        print("Authentisation successfull")
    else:
        print("login failed")
```

login()

```
def register():
    email = input("enter roll : ")
    pas=input("enter pass : ")
    conform=input("conform pass : ")
    ptr = open("vijay.txt",'a')
    ptr.write(email)
    ptr.write(pas)
```

```
print("welcome to website please login")
register()
```

PYTHON PROGRAM TO CREATE A CAPTCHA CODE IN FRONTEND ONLY ?

```
import random as r
def captcha():
    text="abcdefghijklmnopqrstuvwxyz"
    word=r.choice(text)+r.choice(text)+r.choice(text)+r.choice(text)
    print(word)
```

```
def login():
    email=input("enter your roll number :")
    pas=input("enter your passwprd :")
    ptr = open("vijay.txt",'r')
    a=ptr.read()
    if (email in a and pas in a):
        print("Authentisation successfull")
    else:
        print("login failed")
```

1.write a pthon program to take a number from user and check it is perfect number or not.

```
n=int(input("enter any number:"))
```

```
a=n
sum=0
for i in range (1,(n//2+1)):
    if (a%i)==0:
        sum=sum+i
if sum==a:
    print("perfect number")
else:
    print("not a perfect number")
```

2.program to take a number from user and check it is prime or not.

```
a=int(input("enter:"))
c=0
for i in range(2,a,1):
    if(a%i)==0:
        c=c+1
if c==0:
    print("prime number")
else:
    print("not a prime number")
```

3.program to take a number from user and check it is armstrong or not.

```
a=int(input("enter any number:"))
sum=0
l=len(str(a))
for i in str(a):
```

```
    sum=sum+(int (i)**l)
if sum==a:
    print("Armstrong")
else:
    print("not Armstrong")
```

4.program to take a number from user and find the factorial.

```
a=int(input("enter any number for factorial:"))
sum=1
for i in range(1,a+1,1):
    sum=sum*i
print(f"Factorial of {a} is = {sum}")
```

5.program to a number from user and check its is strong or not.

```
a=int(input("enter any number:"))
sum=0
for i in str(a):
    f=1
    for j in range(1,int(i)+1):
        f=f*j
    sum=sum+f
if sum==a:
    print("Strong Number")
else:
    print("Not a Strong number")
```

.6 PATTERN:

1. *

* *

* * *

* * * *

* * * * *

2. *

* *

* * *

* * * *

* * * * *

3. * * * * *

* * * *

* * *

* *

*

4. A

A B

A B C

A B C D

A B C D E

5. *

* *

* * *

* * * *

* * * * *

6. *

* * *

* * * * *

* * * * * *

* * * * * * *

7. * * * * * * * * *

* * * * * * *

* * * * *

* * *

*

1.

```
n=int(input("enter:"))
for i in range(1,n+1):
    print('*'*i)
```

2.

```
n=int(input("enter:"))
```

```
for i in range(1,n+1):  
    print(' '* (n-i) + '*'*i)
```

```
# 3.  
n=int(input("enter:"))  
for i in range(n,0,-1):  
    print(' '* (n-i) + '*'*i)
```

```
# 4.  
n=int(input("enter:"))  
for i in range(1,n+1):  
    print('*'*i + ' '*(2*n-2*i) + '*'*i)
```

```
# 5.  
n=int(input("enter:"))  
for i in range (1,n+1):  
    for j in range (i):  
        print(chr(65+j),end=' ')  
    print()
```

```
# 6.  
n=5  
for i in range(1,5):
```



```

for j in range(1,8):
    if(j>=5-i and j<=3+i):
        print('*',end='')
    else:
        print(' ',end='')
print()

```

ALTERNATE METHOD

```

for i in range (1,6):
    for j in range (5,i,-1):
        print(" ",end = "")
    for k in range(0,i):
        print("* ",end = "")
    print()

```

7.program to print the pattern of opposite prism

DOUBT QUESTION-----

```

r = int (input("enter any number : "))
for i in range (r,1,-1):
    for space in range (0,(r-i)):
        print(" ",end = " ")
    for j in range (i, (2*i - 1)):
        print("*",end = " ")
    for j in range (1,(i-1)):
        print("*",end = " ")
    print()

```

```
# ALTERNATE METHOD
for i in range (6,0,-1):
    for j in range (6,i,-1):
        print(" ",end = "")
    for k in range(0,i):
        print(" *",end = "")
    print()
```

1. Write a python program to take a string from user and check it is pangram or not.

```
s=input("enter the any string : ")
s1=s.lower()
for i in range(97,123):
    if chr(i) not in s1:
        print("Not Pangram")
        break
    else:
        print("Pangram")
```

2. Write a python program to take a string from user and check it is anagram or not.

```
s1=input("enter string : ")
s2=input("enter string : ")
if (sorted(s1) == sorted(s2) ):
```

```
    print("Anagram")
else:
    print("Not Anagram")
```

3.Sorted program with join function.

```
s=input("enter string : ")
l = sorted(s)
ll=sorted(s,reverse = True)
print(l)
print(ll)
s1=' '.join(l)
s2=' '.join(ll)
print(s1)
print(s2)
```

4.Program how to print string in python.

```
s="Abhimanyu"
print(s[2])
print(s[2:7])
print(s[2:])
print(s[:4])
print(s[3::2])
print(s[1:4:3])
print(s[-2:-7:-1])
print(s[ : : ])
```

```
print(s[8:2:-1])
print(s[ : :-1])
```

CLASSWORK

1.WAPP to take a list from user and sum all its element.

```
lst = []
n=int(input("enter the list of integer : "))
for i in range (1,n+1):
    lst.append(int(input()))
print(lst)
print(f"Sum of all element is = {sum(lst)}")
```

2.WAPP to take a list from user and make two list one of odd number and one of even number input list in integer format.

```
lst = []
l1=[] # l1=list 1
l2=[] # l2=list 2
n=int(input("enter the number of range : "))
for i in range (1,n+1):
    lst.append(int(input("enter the element : ")))
print(lst)
for i in range (1,n+1):
    if(i%2==0):
        l1.append(i)
    else:
        l2.append(i)
```

```
print(f"Even element list : {l1}")
print(f"Odd elemnt list : {l2}")
```

3.WAPP to take two list from user and merge.

```
l1 = []
l2 = []
lst = []
n=int(input ("enter the range of integer : "))
for i in range (1,n+1):
    l1.append(int(input("enter teh integer : ")))
    l2.append(int(input ("enter for list 2 : ")))
```

```
lst =l1 +l2
print(f"Merge of all elemnt from l1 and l2 is = {lst}")
```

4.WAPP to take two list from user and merge them in such a way that resultant list contain no duplicate element.

```
l1 = []
l2 = []
lst = []
n=int(input ("enter the value of range : "))
for i in range (1,n+1):
    l1.append(int(input("enter the element in list 1 : ")))
    l2.append(int(input("enter the elemnet in list 2 : ")))
```

```
lst = l1 + l2
s= set (lst)      # set function is used to not repeat elemnet after merging
print(f"Merge of both list without duplicate : {s}")
```

ALTERNATE METHOD -----WITHOUT TAKING ANOTHER LIST

```
l= list (map(int ,input() .split( )))
i=0
n= len(l)
while (i<n):
    if l[i] in l[i+1:]:
        del l[i]
        i-=1
        n-=1
    i+=1
print(l)
```

5.WAPP to take a list from user and delete 1st and last occurrence of element given by user.

```
l1 = []
l2 = []
lst = []
```

6.WAPP to take a list of integer and remove all occurrence .

7.WAPP to find the frequency of each element in a given string .

```
s = input("enter the element : ")
p = ''
print("FREQUENCY OF EACH ELEMENT IS :")
for i in s:
    if i not in p:
        print(f"{i} = {s.count(i)}")
        p+=i
```

ALTERNATE METHOD

```
s = input("enter the element : ")
re= ''
print("FREQUENCY OF EACH ELEMENT IS :")
for i in s:
    if i not in re:
        print(f"{i} = {s.count(i)}")
        re+=i
```

8.PROGRAM TO DELETE THE SAME ITEM IN BOTH THE LIST .

```
l = list (map(int,input(("enter : ")).split()))
e= int (input ("enter : "))
for i in range (l.count(e)):
    l.remove(e)
print(l)
```

9.WAPP to take a string from user and reverse them .

```
s = input ("enter : ")
```

```
l = s.split()
```

```
l.reverse ()
```

```
s = ' '.join(l)
```

```
print(s)
```

10.WAPP to swap (toggle case) the given string means lower case to upper case and upper case to lower case.

```
v=str(input("enter any string : "))
```

```
print(v.swapcase())
```

11.WAPP TO TAKE A STRING FROM USER AND MAKE OF ALL VOWEL PRESENT IN THAT STRING USING LIST COMPREHENSION ?

```
s=input("enter any string : ")
```

```
l=[i for i in s if i in 'aeiouAEIOU']
```

```
print(l)
```

PYTHON PROGRAM TO MAKE A LIST OF LIST HAVING 3 ELEMENT IN EACH LIST.WHICH SHOWS THE MULTIPLICATION TABLE OF A USER GIVEN INPUT USING LIST COMPREHENSION ?

```
n=input("enter any integer : ")
```

```
l=[[n,i,n*i] for i in range (1,11)]
```

```
for i in l:
```



```
print(l)
```

```
# PYTHON PROGRAM TO TAKE 2 LIST FROM USER AND MAKE A LIST OF  
TUPLE HAVING CORROSPONDING OF BOTH LIST , USING ZIP FUNCTION ?  
n=int(input("enter any intiger how much tumpe you need to make : "))  
l1=[]  
l2=[]  
for i in range (n):  
    l1.append(input("enter elemnt for frst list : "))  
    l2.append(input("enter elemnt for second list : "))  
print(l1)  
print(l2)  
z=zip(l1,l2)  
print(list(tuple(z)))
```

```
# PYTHON PROGRAM TO TAKE A DITONARIES FROM USER BY TAKING  
NUMBER OF ELEMENT AND CHECK WHEATHER USER THE GIVEN VALUE ARE  
PRESENT IN DICTONARIES OR NOT ?  
n=int(input("enter : "))  
d={}  
for i in range(n):  
    k=input("enter k : ")  
    v=input("enter v : ")  
    d[k]=v  
print(d)  
p=input("enter any value to check : ")  
for i in d:  
    if p==d[i]:
```

```
        print("Present")
        break
else:
    print("Not Present")
```

```
# PYTHON PROGRAM TO REVERSE OF TUPLE ?
n=int(input("enter : "))
t=()
for i in range (n):
    element=input("enter element in tuple : ")
    t=t+(element,)
print(t)
l=[]
l=list(tuple(t))
print(l)
l.reverse()
reverse_tuple=tuple(l)
print(reverse_tuple)
```

```
# WRITE A PYTHON PROGRAM TO TAKE A N*N MATRIX FROM USER AND
PRINT THE SUM OF ITS MINOR DIAGONAL ELEMENTS ?
n=int(input("enter the value of n : "))
matrix = []
print("Enter the matrix elements row by row:")
for i in range(n):
```

```

row = []
for j in range(n):
    element = int(input("enter : "))
    row.append(element)
matrix.append(row)

sum_minor_diagonal = 0
for i in range(n):
    sum_minor_diagonal += matrix[i][n - i - 1]

for row in matrix:
    print(row)
print("Sum of minor diagonal elements:", sum_minor_diagonal)

```

WRITE A PYTHON PROGRAM TO TAKE A N*N MATRIX FROM USER AND PRINT SUM OF ITS MAJOR DIAGONAL ELEMENTS ?

```

n=int(input("enter the value of n : "))
matrix=[]
print("enter the elemnet in the matrix")
for i in range(n):
    row = []
    for j in range(n):
        element=int(input("enter : "))
        row.append(element)
    matrix.append(row)
sum_of_major_diagonal_element = 0
for i in range(n):
    sum_of_major_diagonal_element += matrix[i][n+i-3]
for row in matrix:

```

```
print(row)
print(f"Sum of Major diagonal element =
{sum_of_major_diagonal_element}")
```

WRITE A PYTHON PROGRAM TO TAKE A N*N MATRIX FROM USER AND PRINT ITS DIAGONALS ELEMENTS ?

```
n=int(input("enter the value of n :"))#n=no. of order of square matrix
```

```
matrix = []
```

```
for i in range (n):
```

```
    row = []
```

```
    for j in range (n):
```

```
        element=int(input("enter : "))
```

```
        row.append(element)
```

```
    matrix.append(row)
```

```
for row in matrix:
```

```
    print(row)
```

```
M = []
```

```
m = []
```

```
for i in range (n):
```

```
    major_diagonal_element = matrix[i][n+i-3]
```

```
    minor_diagonal_element = matrix[i][n-i-1]
```

```
    M.append(major_diagonal_element)
```

```
    m.append(minor_diagonal_element)
```

```
print(f"Major diagonal element = {M}")
```

```
print(f"Minor diagonal element = {m}")
```

WRITE A PYTHON PROGRAM TO TAKE A M*N MATRIX FROM USER AND PRINT ITS BOUNDARY ELEMENTS ?

```
m=int(input("enter the row : "))
n=int(input("enter the column : "))
matrix = []
for i in range (m):
    l=list(map(int,input().split()))
    matrix.append(l)
print("Boundary element")
for i in range (m):
    for j in range (n):
        if i==0 or i == m-1 or j==0 or j==n-1:
            print(matrix[i][j],end=" ")
        else:
            print(" ",end = " ")
    print()
```

WRITE A PYTHON PROGRAM TO TAKE A M*N MATRIX FROM USER AND PRINT ITS TRANSPOSE ?

```
matrix = [[5, 4, 3],
          [2, 4, 6],
          [4, 7, 9],
          [8, 1, 3]]
# Define an empty matrix of reverse order
transpose = [[0, 0, 0, 0],
             [0, 0, 0, 0],
             [0, 0, 0, 0]]
# Use nested for loop on matrix A
for i in range(4):
```

```
for j in range(3):  
    transpose[j][i] = matrix[i][j] # store transpose result on empty matrix
```

```
# Printing result in the output  
print("The transpose of matrix is: ")  
for i in transpose:  
    print(i)
```

WRITE A PYTHON SCRIPT TO SORT (ASCENDING AND DECCENDING) A
DICTIONARY BY VALUE ?

```
d= {'apple': 3, 'banana': 1, 'cherry': 2}  
# Sort dictionary by value in ascending order  
ascending_sorted_dict = dict(sorted(d.items(), key=lambda x: x[1]))  
# Sort dictionary by value in descending order  
descending_sorted_dict = dict(sorted(d.items(), key=lambda x: x[1],  
reverse=True))  
# Print sorted dictionaries  
print("Ascending order:", ascending_sorted_dict)  
print("Descending order:", descending_sorted_dict)
```

WRITE A PYTHON SCRIPT TO ADD A KEY TO A DICTIONARY ?

```
n=int(input("enter : "))  
d={}
```

```
for i in range (n):
    k=input("enter key : ")
    v=input("enter the value of key : ")
    d[k]=v
print("Dictionary is given below : ")
print(d)
d["money"]="life"
print("New Dictionary is given : ")
print(d)
```

WRITE A PYTHON PROGRAM TO CONCATENATE FOLLOWING DICTIONARIES TO CREATE A NEW ONE .

```
# d1={1:10,2:20}
# d2={3:30,4:40}
# d3={5:50,6:60}
```

```
d1={1:10,2:20}
d2={3:30,4:40}
d3={5:50,6:60}
d={}
d.update(d1)
d.update(d2)
d.update(d3)
d={**d1,**d2,**d3}
print(d)
# NOTES-** is used to unpacking of the dictionary
```

PYTHON PROGRAM TO CHECK IF A GIVEN KEY ALREADY EXISTS IN A
DICTIONARY ?

```
d={"vijay":1,"kumar":2,"3":"gupta"}
```

```
k=input("enter the key to check : ")
```

```
if k in d:
```

```
    print("present")
```

```
else:
```

```
    print("not present")
```

PYTHON PROGRAM TO ITERATE OVER DICTIONARIES USING FOR LOOPS ?

```
n=int(input("enter : "))
```

```
d={}
```

```
for i in range(n):
```

```
    k=input("enter : ")
```

```
    v=input("eneter : ")
```

```
    d[k]=v
```

```
print(d)
```

ITERATE THE DICTIONARY BY KEY

```
for key in d:
```

```
    print(key)
```

ITERATE THE DICTIONARY BY VALUE

```
for value in d.values():
```

```
    print(value)
```


PYTHON PROGRAM TO GENERATE AND PRINT THE DICTIONARY THATS
CONTAIN A NUMBER (between 1 to n) in form of (x,x**x) ?

```
n=int(input("enter : "))
```

```
d={}
```

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

```
    d[i]=i*i
```

```
print(d)
```

PYTHON PROGRAM TO PRINT A DICTIONARY WHERE KEY ARE THE
NUMBER BETWEEN THE (1 to 15) AND BOTH THE NUMBER IN RAANGE ARE
INCLUDED AND THE VALUES ARE THE SQUARE OF TH KEY

```
n=16
```

```
d={}
```

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

```
    d[i]=i**2
```

```
print(d)
```

PYTHON PROGRAM TO MERGE THE TWO PYTHON DICTIONARY ?

```
d={}
```

```
d1={"vijay":1,"kumar":2}
```

```
d2={"gupta":3}
```

```
d1.update(d2)
```

```
print(d1)
```

PYTHON PROGRAM TO SUM ALL THE ELEMENT IN A DICTIONARY ?

```
d={"vijay":4,"kumar":9,"gupta":6}
```

```
sum=0
```

```
for value in d.values():
```

```
    sum+=value
```

```
print(f"Sum of all the element is = {sum}")
```

Write a program To take number of pens in a bucket from user and find That In how many ways we can pick pens from bucket so that no pen left in bucket.

Note: if you pick i pens in first chance then you have to pick i pens in all left chances.

Sample input 1:

12

Sample output 2:

6 ways

Sample input 2:

25

Sample output 2:

3 ways

```
n=int(input("enter : "))
```

```
c=0
```

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

```
if n%i==0:
    c+=1
print(c)
```

PYTHON PROGRAM TO FIND THE CALENDER OF GIVEN MONTH AND YEAR
?

```
import calendar
year=int(input("enter the year : "))
month=int(input("enter the month : "))
print(calendar.month(year,month))
```

PYTHON CODE TO FIND THE OUTPUT OF FOLLOWING ?

```
a=20
def f():
    a=15
    print(a)  # 15
    a=10
    print(a)  # 10
    def t():
        global a
        a=5
        print(a)  # 5
    t()
    print(a)  # 10
def g():
    nonlocal a
    a=7
```

```
    print(a)  # 7
g()
    print(a)  # 7
f()
print(a)  # 5
```

Example of lamda function ?

```
double = lambda x: x * 2
print("OUTPUT")
print(double(5))
```

EXAMPE OF LAMDA FUNCTION ?

```
my_list = [1, 5, 4, 6, 8, 11, 3, 12]
new_list = list(filter(lambda x: (x%2 == 0) ,my_list))
print(new_list)  #[4,6,8,12]
```

Write a function to calculate area and perimeter of a rectangle ?

```
def area(l,b):
    return (l*b)
```

```
def perimeter(l,b):
    return (2*(l+b))
```

```
l=int(input("enter the length of rectangle : "))
b=int(input("enter teh breath of rectangle : "))
print(f"Length = {l}\nBreath = {b}")
print(f"Area = {area(l,b)}")
print(f"Perimeter = {perimeter(l,b)}")
```

Write a function to calculate the area and the circumference of the circle ?

```
def area(r,pi=3.14):
    return (pi*r*r)
def circumfernce(r,pi=3.14):
    return (2*pi*r)
```

```
r=int(input("enter the radius of circle : "))
print(f"Radius,r={r}")
print(f"Area of circle = {'%.2f'%(area(r,pi=3.14))}")
print(f"Circumfernce of circle = {'%.2f'%(circumfernce(r,pi=3.14))}")
```

Write a function to tell user if he/she is able to vote or not.

```
def vote(n,a):
    print(f"{n} you are able to vote")
    print(f"THANK YOU {n}")
def notvote(n,a):
    print(f"Sorry {n} you are not able to vote")
```

```
n=input("enter your Name : ")
a=int(input("enter your age : "))
if a>=18:
    vote(n,a)
else:
    notvote(n,a)
    r=18-a
    print(f"After {r} year you can vote\nTHANK YOU")
```

Write a function to check if a number is prime or not ?

```
def prime(n):
    c=0
    for i in range(2,n,1):
        if (n%i)==0:
            c+=1
    if c==0:
        print(f"{n} is prime number")
    else:
        print(f"{n} is Not Prime number")
n=int(input("enter : "))
prime(n)
```

WRITE A PYTHON PROGRAM TO WRITE A FILE NAMED ABC.TXT AND WRITE ANY FIVE LINE IN THAT FILE ?

```
f=open("abc.txt",'w')
f.write("hello how are you \n i am fine\n")
l=["vijay\n","kumar\n","gupta\n"]
f.writelines(l)
f.close()
f=open("abc.txt",'r')
g=f.read()
print(g)
```

PYTHON PROGRAM TO TAKE A INPUT IN FILE HANDLING AND PRINT IN THE THE .TEXT FILE ?

```
f=open("vijay.txt",'w')
n=int(input("enter the number of line : "))
for i in range (n):
    s=input("enter : ")+"\n"
    f.write(s)
```

WRITE A PYTHON PROGRAM TO COUNT NUMBER OF WORD AND NUMBER OF LINE IN A TEXT FILE ?

```
print()
print("\t----WRITE IN FILE USING PYTHON----\t")
print()
```

```
f=open("vijay.txt",'w')
n=int(input("enter the no. of inputs: "))
for i in range(n):
    s=input("enter : ")+"\n"
    f.write(s)
```

```
#open file in program
f= open("vijay.txt",'r')
wordsList=(f.read().split())
lenWordsList = len(wordsList)
print("NUMBER OF WORDS IN THE FILE =",lenWordsList)
```

```
#count characters in files
countCharacters=0
for word in wordsList:
    lenWord= len(word)
    countCharacters +=lenWord
print("NUMBER OF CHARACTERS IN THE FILE =",countCharacters)
f.seek(0)
```

```
#count lines in files
f=open("vijay.txt","r")
linesList = f.read().split("\n")
countLinesList= len(linesList)-1
print("NUMBER OF LINES IN FILE =",countLinesList)
f.seek(0)
```

ISE OF RANDOM FUNCTION


```
from random import*
n1=randint(5,50)
print(n1)
n2=randrange(5,100,2)
print(n2)
n3=random()
print(n3)
n4=uniform(10,30)#will give a floating point number
print(n4)
```

USE OF RANDOM FUNCTION

```
from random import*
l=["hello",5,7.5,"by",2,(7,3,9)]
seed(9) # SEED IS USE TO FIX RANDOM VALUE FOR ALL THE SYSTEM IN THE
RANDOM FUNCTION
n1=randint(5,40)
print(n1)
n2=randrange(5,100,2)
print(n2)
n3=random() # will give a random value between 0-1 i.e floating number
print(n3)
n4=uniform(10,30) # give a random floating number between the range
print(n4)
n5=choice(l)
print(n5)
n6=choices(l,k=4)
print(n6) # list of 4 element from list l3
print(l)
shuffle(l) # USE TO REVERSE THE LIST IN RANDOM FUNCTION
print(l)
# GIVE THE NUMBER OF BITS BETWEEN THE 0-63
n7=getrandbits(4)
```

```
print(n7)
n8=getrandbits(6)
print(n8)
```

WRITE A PYTHON PROGRAM TO GENERATE A RANDOM PASSWORD OF
NUMBER OF CHARACTER OF LENGTH PASSWORD MUST CONTAIN ATLEAST
ONE LOWER CASE AND ONE UPPER CASE AND DIGIT AND ONE SPECIAL
CHARACTER (#,@'."',";')

```
from random import*
n=int(input("enter the length of password : "))
p=""
s=[]
l1=["v","i","j","a","y"]
l2=["K","U","M","A","R"]
l3=["@","#",".",",",";"]
for i in range((n//3)):
    s.append(choice(l1))
    s.append(choice(l2))
    s.append(choice(l3))
print(s)
print("YOUR PASWORD IS BELOW GIVEN BELOW :")
for i in s:
    p+=str(i)
print(p)
```

ALTERNATE METHOD

```
from random import*
n=int(input("enter : "))
l=[]
s=""
```

```

l1=['@','#','.',',',';',':']
l2=[l.append(i) for i in range(0,10)]
l3=[l.append(chr(i)) for i in range(65,91)]
l4=[l.append(chr(i)) for i in range(97,123)]
p=choices(l,k=n)
print(p)
for i in p:
    s+=str(i)
print(s)

```

WRITE A PYTHON PROGRAM TO MAKE A GAME HAVING 3 LEVELS IN GAME
 USER HAVE TO GAUSE A NUMBER WITHIN RANGE PROVIDED BY
 PROGRAMMER IF USER GAUSE
 # THE RANDOM NUMER SELECTED BY THE PROGRAMMER THEN HE WIN
 OTHER WISE HE LOSS YOU CAN ALSO HINT THE USER
 # IN LEVEL 1 USER WILL GET 20 CHANCES IN LEVEL 2 USER GET 10 CHANCS
 # IN 3RD LEVEL USER WILL GET 10 SECOND

```

from random import*
import time
n=time.time() #second from 1st january 1970 to system current time
l=[]
while time.time()-n<10:
    s=input()
    l.append(s)
print(l)

```

EXAMPLE OF LIST COMPREHENSION

```
s='how world how are you'.split()
l=[i if i!='how' else 'hello' for i in s]
print(l)
```

1. Write a Python program that takes a list of numbers as input and returns the sum of all even numbers in the list.

```
n=int(input("enter : "))
l=[]
for i in range(n):
    l.append(int(input("enter number : ")))
print(l)
sum =0
for i in l:
    if(i%2==0):
        sum+=i
print(f"sum of all even number in list :{sum}")
```

2. Write a Python program that takes a string as input and returns the number of vowels in the string.

```
print()
s=input("ENTER THE STRING : ")
n=len(s)
print(f"LENGTH OF STRING :{n}")
c=0
```

```

l=[]
v="AaEeliOoUu"
for i in s:
    if i in v:
        c+=1
        l.append(i)
print(f"NO OF VOWELS IN STRING :{c}")
print(f"VOWEL PRESENT IN STRING :{l}")

```

3. Write a Python program that takes two lists as input and returns a new list that contains the common elements of both lists.

```

l1=[]
l2=[]
l3=[]
l1=input("enter : ")
l2=input("enter : ")
for i in l1:
    if i in l2:
        l3.append(i)
print(l3)

```

4- Write a Python program that takes a number as input and returns True if it is a prime number, and False otherwise.

```

n=int(input("enter : "))
c=0
for i in range(2,n,1):
    if n%i==0:
        c+=1
if c==0:
    print("TRUE")
else:

```

```
print("FALSE")
```

5. Write a Python program that takes a list of integers as input and returns the largest number in the list(without using max()).

```
def largestnumber(n):
    largest =n[0]
    for i in n:
        largest =i
    return largest
n=[10,46,12,56,78]
print(n)
largest =largestnumber(n)
print(f"YOUR LARGEST NUMBER IS {largest}")
```

ALTERNATE METHOD

```
n=int(input("enter : "))
l=[]
for i in range (1,n+1):
    l.append(int(input("enter:")))
    largest_number =max([i for i in l])
print(f"LARGEST NUMBER IN THEE LIST IS :{largest_number}")
```

5- Write a Python program that asks the user for a number
and then displays the multiplication table for that number
(up to 10) using list comprehension.

```
print()
n=int(input("enter table name : "))
print()
```

```
for i in range(1,11):
    print(f"{n} * {i} = {n*i}")
print()
```

ALTERNATE METHOD

```
print()
n=int(input("enter table name:"))
print()
Table=[(i*n) for i in range(1,11)]
print(Table)
```

6- Write a program to find the GCD of two numbers.

$GCD(a, b) = (a \times b) / LCM(a, b)$. GCD or HCF = GREATEST COMMON DIVISION both are same but differnt

```
print()
a=int(input("enter the 1st number : "))
b=int(input("enter the 2nd number : "))
if a>b:
    small=b
else:
    small=a
for i in range(1,small+1):
    if a%i==0 and b%i==0:
        hcf=i
print(f"THE GCD ={hcf}")
print()
```

7- Write a program to find the LCM of two numbers.

```
print()
a=int(input("enter the 1st number : "))
```

```
b=int(input("enter the 2nd number : "))
if a>b:
    big=a
else:
    big=b
while True:
    if big % a==0 and big % b==0:
        lcm=big
        break
    big+=1
print(f"THE LCM ={lcm}")
```

```
# 8- Write a program to convert a decimal number to binary
# with and without bin().
a=int(input("enter the float number : "))
b=bin(a)[2:]
print(b)
```

```
# ALTERNATE METHOD
a=int(input("enter any number : "))
b=""
while a>0:
    r=a%2
    b=str(r)+b
    a//=2
print(b)
```

```
# 9- Write a program to check if a given string is a valid email address or not.
print()
s=input("enter email id : ")
```



```
print(s)
print()
if '@' and '.com' in s:
    print("VALID")
else:
    print("INVALID")
print()
```

10-Write a program to check if a given number is an Armstrong number or not.

```
print()
n=int(input("enter:"))
sum =0
order = len(str(n))
temp=n
while temp>0:
    digit=temp%10
    sum=sum+digit**order
    temp=temp//10
if sum == n:
    print(f"{n} is Armstrong Number")
else:
    print(f"{n} is NOT an Armstrong number")
print()
```