

1. Print "Hello World"

```
def sample():  
    print("Hello World")  
sample()
```

2. Compute addition of two numbers. (Subtraction, Multiplication, Division, to find the Remainder).

```
def add(a,b):  
    print(a+b)  
def sub(a,b):  
    print(a-b)  
def mul(a,b):  
    print(a*b)  
def div(a,b):  
    print(a/b)  
def mod(a,b):  
    print(a%b)  
def div(a,b):  
    if(b!=0):  
        print(a/b)  
    else:  
        return "division by zero error"  
a=int(input("enter the 1st number:"))  
b=int(input("enter the 2nd number:"))  
add(a,b)  
sub(a,b)  
mul(a,b)  
div(a,b)  
mod(a,b)
```

```
enter the 1st number:5  
enter the 2nd number:2  
7  
3  
10  
2.5  
1
```

3. Compute the Simple Interest.

4. Compute the Compound Interest.

```
def si():  
    p=int(input("enter a principle "))  
    t=int(input("enter time number"))  
    r=float(input("enter the rate of intrest"))
```

```

si=(p*t*r)/100
print("the simple intrest is ",si)
def ci():
    p=int(input("enter a principle "))
    t=int(input("enter time number"))
    r=float(input("enter the rate of intrest"))
    #compute compound interest
    ci = p * (pow((1 + r / 100), t))
    print("Compound interest :",ci)
si()
ci()

```

```

enter a principle 1000
enter time number2
enter the rate of intrest3
the simple intrest is 60.0
enter a principle 10000
enter time number2
enter the rate of intrest5
Compound interest : 11025.0

```

Double-click (or enter) to edit

Area of circle Area of Rectangle Area of triangle Area of square

```

pi=3.14
def areas():
    r2=int(input("enter the radius"))
    ACir=pi*r2*r2
    print("area of circle is",ACir)
    l=int(input("enter the lenght"))
    b=int(input("enter the breadth"))
    Arec=l*b
    print("area of rectangle is",Arec)
    bt=int(input("enter the breadth"))
    ht=int(input("enter the height"))
    Atri=(1/2*bt*ht)
    print("area of triangle is",Atri)
    a2=int(input("enter a num for sqr"))
    sqr=a2*a2
    print("square is",sqr)
areas()

```

```

enter the radius2
area of circle is 12.56
enter the lenght2
enter the breadth2
area of rectangle is 4
enter the breadth2
enter the height2
area of triangle is 2.0
enter a num for sqr2
square is 4

```

6. Compute the Circumference of circle.

```
def coc():
    r=int(input("enter the radius:"))
    print("the circumference of circle is:",2*3.142*r)
coc()

enter the radius:5
the circumference of circle is: 31.419999999999998
```

7.area of triangle when three sides are given

```
def triangle_3sides():
    a3=float(input("enter 1st side"))
    b3=float(input("enter 2nd side"))
    c3=float(input("enter 3rd side"))
    s=(a3+b3+c3)/2
    Area=(s*(s-a3)*(s-b3)*(s-c3))**0.5
    print("area of 3 sides is",Area)
triangle_3sides()

enter 1st side3
enter 2nd side6
enter 3rd side8
area of 3 sides is 7.644442425710328
```

8.Perimeter of Rectangle

9.area of trapezium

10. area of rhombus

11. area of parallelogram

12. Volume and surface area of cube

13. Volume and surface area of cuboids

14. Volume and surface area of cylinder

15. Volume and surface area of cone

16. Volume and surface area of sphere

17. Perimeter of Circle and Triangle

```
def peremeter_rectangle():
    L=float(input("enter length"))
    W4=float(input("enter wedth"))
    AreaRec=2*(L+W4)
    print("Perimeter of rect is",AreaRec)
```

```
def trapezium():
    a5=int(input("enter a"))
```

```

b5=int(input("enter b"))
h5=int(input("enter h"))
AreaTrap=(a5+b5)/2*h5
print("area of trapezium is",AreaTrap)

def area_rhomus():
    p=int(input("enter p"))
    q=int(input("enter q"))
    AreaRhom=p*q/2
    print("area of rhombus is",AreaRhom)

def parallelgram():
    base=int(input("enter base"))
    height=int(input("enter height"))
    Areapar=base*height
    print("area of parallelogram is",Areapar)

def volume_surfacearea_cube():
    length = float(input("Enter the Length of any Side of a Cube: "))
    sa = 6 * (length * length)
    Volume = length * length * length
    print("\nSurface Area of Cube =",sa)
    print("Volume of cube = ",Volume)

def volume_surfacearea_cuboids():
    len = float(input("Enter the Len"))
    height=float(input("Enter the height"))
    breadth= float(input("Enter the breadth"))
    SA1 = 2*(len * breadth + breadth * height + len * height)
    Volume = (len * breadth * height)
    print("\nSurface Area of Cube =",SA1)
    print("Volume of cube = ",Volume)

def volume_surfacearea_cyliner():
    PI = 3.14
    radius = float(input('Please Enter the Radius of a Cylinder: '))
    height = float(input('Please Enter the Height of a Cylinder: '))
    sa = 2 * PI * radius * (radius + height)
    Volume = PI * radius * radius * height
    print("\n The Surface area of a Cylinder = %.2f" %sa)
    print(" The Volume of a Cylinder = %.2f" %Volume)

def volume_surfacearea_cone():
    PI=3.142
    h=float(input ("enter the height"))
    r=float(input ("enter the radius"))
    V=PI*r*r*(h/3)
    print("volume of cone is",V)
    S = PI * r * h + PI * r**2
    print ("surface area of cone is",S)

def volume_surfacearea_sphere():
    PI=3.142
    r=float (input ("enter the radius"))
    V=(4/3)*PI*r*r*r

```

```

print ("volume of sphere is",V)
S=4*PI*r*r
print ("surface area of sphere is",S)

def peremter_of_circle_and_triangle():
    PI=3.142
    r=float(input ("enter the radius"))
    P=2*PI*r
    print("perimeter of a circle is",P)
    a=int(input ("enter the width"))
    b=int(input ("enter the width"))
    c=int(input ("enter the width"))
    Peri=a+b+c
    print("perimeter of a triangle is",Peri)

peremeter_rectangle()
trapezium()
area_rhomus()
parallelogram()
volume_surfacearea_cube()
volume_surfacearea_cuboids()
volume_surfacearea_cyliner():
volume_surfacearea_cone():
volume_surfacearea_sphere()
peremter_of_circle_and_triangle()

```

18.Enter the five students marks calculate avg, percentage

```

def marks_avg_per():
    a=float(input("enter the value of first subject"))
    b=float(input("enter the value of second subject"))
    c=float(input("enter the value of third subject"))
    d=float(input("enter the value of fourth subject"))
    e=float(input("enter the value of fifth subject"))
    avg=(a+b+c+d+e)/5
    total=a+b+c+d+e
    percentage=(total/500)*100
    print("total is",total)
    print("avg is",avg)
    print("percentage is",percentage)
marks_avg_per()

```

19.swap content using temp

20.swap two numbers without using temp

21.swap using comma operator

```

def with_temp():
    var1=int(input ("enter var1"))
    var2=int(input ("enter var2"))

```

```

temp = var1
var1 = var2
var2 = temp
print("swapping of two nums is",var1,"and",var2)

def without_temp():
    var1=int(input ("enter var1"))
    var2=int(input ("enter var2"))
    var1=var1+var2
    var2=var1-var2
    var1=var1-var2
    print("swapping of two nums is",var1,"and",var2)

def with_coma_operator():
    var1=int(input ("enter var1"))
    var2=int(input ("enter var2"))
    var1,var2=var2,var1
    print ("swapping of two nums is",var1,"and",var2)
with_temp()
without_temp()
with_coma_operator()

```

22.two angles of triangle find third angle

```

def thirdangle():
    ang1=int(input ("enter the 1st angle"))
    ang2=int(input ("enter the 2nd angle"))
    ang3=180-(ang1+ang2)
    print ("third angle is",ang3)
thirdangle()

```

24.find right most integral part

```

def right():
    x=float(input ("enter x"))
    y=int(x)
    print("the right most integral part is ",y%10)
right()

```

25.Temperature from degree celsius to fahrenheit



```

def temp():
    a=float(input("enter the temperature in celsius"))
    b=float(input("enter the temperature in fahrenheit"))

```

```
fahrenheit=(a*(9.0/5.0))+32
print("%.2f",fahrenheit)
cel=((5.0/9.0)*(fahrenheit-32))
print("%.2f",cel)
temp()
```

26. Conversion of Uppercase to lower case

```
def u_l():
    b="hanush"
    a="HANU"
    print(b.upper())
    print(a.lower())
#upper lower
u_l()

    HANUSH
    hanu
```

27. To compute the net salary of an employee by considering the formula, Net salary = Basic salary +DA+TA+HRA -LIC where DA, TA, HRA and LIC are supplied as the input

```
def net_sal():
    da=float(input("enter the da of employ"))
    ta=float(input("enter the ta of employ"))
    hra=float(input("enter the hra of employ"))
    lic=float(input("enter the lic of employ"))
    basicsal=int(input("enter the basic salary of employ"))
    netsal=basicsal+da+ta+hra-lic
    print("the netsal of employ is \t:",netsal)
net_sal()
```

28. Find out root of any number

```
def root():
    num = int(input())
    num_sqrt = num ** 0.5
    print('The square root of',(num_sqrt))
root()
```

29. Input any number from user and check whether nth bit of the given number is set (1) or not (0)(hint: Use bitwise operators)

```
def set():
    n=int(input("enter the number:"))
    h=int(input("enter the value:"))
    if(n&(1<<(h-1))):
```

```

    print("set")
else:
    print("not a set")
set()

```

30.Swap using Bitwise operator

```

def bitwise():
    x = int(input("enter x"))
    y = int(input("enter y"))

    x = x ^ y
    y = x ^ y
    x = x ^ y

    print("Value of x:", x)
    print("Value of y:", y)
bitwise()

```

31.Triangle is isoscles ,equilateral or scalene

```

def type_triangle():
    x = int(input("enter x "))
    y = int(input("enter y "))
    z = int(input("enter z "))

    if(x == y == z):
        print("Equilateral triangle")
    elif(x==y or y==z or z==x):
        print("isosceles triangle")
    else:
        print("Scalene triangle")
type_triangle()

    enter x 3
    enter y 3
    enter z 4
    isosceles triangle

```

32.greatest of two numbers

```

def grt():
    x = int(input("enter x "))
    y = int(input("enter y "))
    if (x>y):
        print("x is greater")
    else:
        print("y is greater")
grt()

```


33.greatest of three numbers

```
def large_threenumbers():
    x = int(input("enter x "))
    y = int(input("enter y "))
    big=int(input("enter the third number"))
    large=x
    if(y>large):
        large=y
    if(big>large):
        large=big
    print(large)
large_threenumbers()

    enter x 1
    enter y 0
    enter big2
    2
```

34.Even or odd

```
def even_odd():
    n=int(input("enter n"))
    if(n==0):
        print("n is zero")
    else:
        print("n is invalid")
even_odd()
```

35.Zero or not

```
def zero():
    n=int(input("enter n"))
    if(n==0):
        print("n is zero")
    else:
        print("n is invalid")
zero()
```

36.Positive or negative

```
def positiv_neg():
    n=int(input("enter n"))
    if(n>0):
        print("n is positive ")
    else:
        print("n is negative")
positiv_neg()
```

37.Positive or negative or zero using nested if else

```
def pos_neg_zero():
    num = float(input("Enter a number: "))
    if num > 0:
        print("Positive number")
    elif num == 0:
        print("Zero")
    else:
        print("Negative number")
pos_neg_zero()
```

38.Leap year or not

```
def leap():
    Year=int(input("enter year"))
    if((Year % 400 == 0) or (Year % 100 != 0) and (Year % 4 == 0)):
        print("it is leap year")
    else:
        print("its not leap year")
leap()
```

39.Vowel or consonent

```
def vowel_con():
    ch = input("Enter a character: ")
    if(ch=='A' or ch=='a' or ch=='E' or ch=='e' or ch=='I' or ch=='i' or ch=='O' or ch=='o'):
        print(ch, "is a Vowel")
    else:
        print(ch, "is a Consonant")
vowel_con()
```

40.Divisible by 5 or not

```
def div():
    num=int(input("enter num"))
    if((num % 5 == 0) and (num % 11 == 0)):
        print("num is divisible by 5 and 11")
    else:
        print("num is not divisible 5 and 11")
div()
```

41.Simple calculator operation

```
def calculator():

    num1 = float(input("Enter first number: "))
```

```

num2 = float(input("Enter second number: "))
op=input("enter the operation")
if op == "+":
    print(num1, "+", num2, "=", num1+num2)

elif op == "-":
    print(num1, "-", num2, "=", num1-num2)

elif op == "*":
    print(num1, "*", num2, "=", num1*num2)

elif op == "/":
    print(num1, "/", num2, "=", num1/num2)

else:
    print("Invalid input")
calculator()

```

42.Develop a calculator to convert time,distance,area,volume,temperature, from one unit to another

43.check wheather the input is number or not

- List item
- List item

```

def num():
    a = input("Enter something")
    if type(a) == int:
        print("Is a number")
    else:
        print("Not a number")
num()

```

44.person is eligible for vote or not

```

def elegible_voting():
    n=int(input("enter n"))
    if(n>18):
        print("n is eligible for vote ")
    else:
        print("n is not eligible for vote")
elegible_voting()

```

45. To find the roots of an quadratic equation using elif.

```

import math
def QE():
    a=int(input("enter the a value:"))
    b=int(input("enter the b value:"))
    c=int(input("enter the c value:"))
    d=(b*b)-(4*a*c)
    if(d==0):
        x1=-b/(2*a)
        x2=x1
        print("roots real and equal")
        print(-b/(2*a))
    elif(d>0):
        print((-b+math.sqrt(d))/(2*a))
        print((-b-math.sqrt(d))/(2*a))
        print("roots are real and different")
    else:
        print("roots are immaginary")
QE()

```

```

    enter the a value:2
    enter the b value:3
    enter the c value:4
    roots are immaginary

```

46. For student grading system.

```

def student_grading():
    m=int(input("Entrer the marks of stutent :"))
    if(m>=85):
        print("distincion")
    elif(m>=75):
        print("1st class")
    elif(m>=65):
        print("2nd class")
    elif(m>=55):
        print("3rd class")
    elif(m>=35):
        print("pass")
    else:
        print("fail")
student_grading()

```

```

    Entrer the marks of stutent :65
    2nd class

```

47.print your name for 'n' times

```

def n_times():
    n=int(input("enter how many times it has to print"))
    for i in range(0,n):

```

```
print("Hanu")
n_times()
```

48.find sum and avg of 'n' input numbers

```
def sum_avg():
    sum=0
    n=int(input("enter n"))
    for i in range(1,n+1):
        x=int(input("enter a number"))
        sum=sum+x
    print("sum is",sum)
    print("avg is",sum/n)
sum_avg()
```

49.natural numbers till n

```
def natural():
    n=int(input("enter a number"))
    for i in range(1,n+1):
        print(i,end=" ")
natural()
```

50.whole numbers till n

```
def whole():
    n=int(input("enter a number"))
    for i in range(0,n+1):
        print(i,end=" ")
whole()
```

51.even series till n

```
def even():
    n=int(input("enter a number"))
    for i in range(0,n+1):
        if(i%2==0):
            print(i,end=" ")
even()
```

52.odd numbers till n

```
def odd():
    n=int(input("enter a number"))
    for i in range(0,n+1):
        if(i%2!=0):
```

```
        print(i,end=" ")
    odd()
```

53.Ap series

```
def ap_series():
    a=int(input())
    n=int(input())
    d=int(input())
    T=a+(n-1)*d
    for i in range(a,T+1,d):
        print(i)
ap_series()
```

54.given number is prime or not

```
def prime():
    n=int(input())
    count=0
    for i in range(1,n+1):
        if(n%i==0):
            count=count+1
    if(count==2):
        print(n,"is prime")
    else:
        print(n,"is non-prime")
prime()
```

55.prime numbers till 'n'

```
def prime_till_n():
    n=int(input("enter n"))
    for i in range(1,n+1):
        count=0
        for j in range(1,i+1):
            if(i%j==0):
                count=count+1
        if(count==2):
            print(i)
prime_till_n()
```

ANOTHER CODE FOR 55

```
def prime_2():
    n=int(input("enter the value :"))
    for i in range(2,n+1):
        for j in range(2,i):
            if(i%j==0):
```

```
        break
    else:
        print(i)
prime_2()
```

56.natural numbers series and its sum till 'n '

```
def natural_series():
    x=int(input("Enter the value n :"))
    sum=0
    for i in range(1,x+1):
        a=int(input("enter the digits :"))
        sum=sum+a

    print("the sum of ",sum)
natural_series()
```

57.even series and its sum with total number of even numbers within 'n'

```
def evenseries_sum():
    a=int(input("Enter the starting value for a"))
    b=int(input("Enter the last value of b"))
    sum=0
    count=0
    for i in range(a,b+1):
        if(i%2==0):
            print(i)
            count=count+1
            sum=sum+i
    print("num of even numbers is the range from",a, "to",b,"is",count)
    print("sum of even numbers is the range from",a, "to",b,"is",sum)
evenseries_sum()
```

58.odd series and its sum with total number of even numbers within 'n'

```
def oddseries_sum():
    a=int(input("Enter the starting value for a"))
    b=int(input("Enter the last value of b"))
    sum=0
    count=0
    for i in range(a,b+1):
        if(i%2!=0):
            print(i)
            count=count+1
            sum=sum+i
    print("num of odd numbers is the range from",a, "to",b,"is",count)
    print("sum of odd numbers is the range from",a, "to",b,"is",sum)
oddseries_sum()
```

59.find the sum of following series $1+2+4+8+\dots+n$

```
def ser1():
    x=int(input("enter the value for n"))
    print(1)
    for i in range(2,x+1,2):
        print(i)
ser1()
```

60.evaluate: $1+x+x^2+x^3+\dots+x^n$

```
import math
def ser2():
    x=int(input("enter the value for x :"))
    n=int(input("enter the value for n :"))
    i=0
    while(i<=n):
        sum=sum+math.pow(x,i)
        i=i+1
    print("the sum of series is :",sum)
ser2():
```

61.evaluate: $1+x+x^2/2+x^3/3+\dots+x^n/n$

```
import math
def ser3():
    x=int(input("enter the value for x :"))
    n=int(input("enter the value for n :"))
    sum=0
    i=0
    while(i<=n):
        sum=sum+math.pow(x,i)/i
        i=i+1
    print("the sum of series is :",sum)
ser3()
```

62.evaluate: $1-x+x^2-x^3+\dots+x^n$

```
def ser4():
    x=int(input("enter the value for x :"))
    n=int(input("enter the value for n :"))
    sum=0
    for i in range(1,n):
        sum=sum+(math.pow(-x,i)/i)
    print("the sum of series is :",sum)
ser4()
```


63.evaluate: $1-x^2/2!-x^3/3!+.....+x^n/n$

```
import math
def ser5():
    x=int(input("enter the value for x :"))
    n=int(input("enter the value for n :"))
    sum=0
    t=1
    for i in range(1,n):
        sum=sum+(math.pow(-x,i)//i)
        t+=1
    print("the sum of series is :",sum)
```

```
ser5()
```

```
enter the value for x :4
enter the value for n :5
the sum of series is : 46.0
```

64.compute sin series

```
def sin():
    x = int(input("Enter the value of x: "))
    n = int(input("Enter the value of n: "))
    sign = -1
    fact = 1
    sum = 0
    while i<=n:
        p = 1
        fact = 1
        for j in range(1,i+1):
            p = p*x
            fact = fact*j
        sign = -1*sign
        sum = sum + sign* p/fact
        i = i+2
    print("sin(",x,") =",sum)
sin()
```

65.compute cos series

```
def cos():
    x = int(input("Enter the value of x: "))
    n = int(input("Enter the value of n: "))
    sign=-1
    fact=1
    i=2
    sum=0
    while i<=n:
        p=1
```

```

fact=1
for j in range(1,i+1):
    p = p*x
    fact = fact*j
sum= sum + sign* p/fact
sign = -1*sign
i = i+2
print("cos(",x,") =",1+sum)
cos()

```

66.find the power of given number using inbuilt function power()

```

def pow():
    base=int(input("enter the base number :"))
    exp=int(input("Enter the exponential number :"))
    result=1.0
    while(exp!=0):
        result*=base
        exp=exp-1
    print("the power of a given number is :",result)
pow()

```

67.split numbers into digits

```

def split_digit():
    n=int(input("enter the number :"))
    while(n!=0):
        rem=n%10
        print(rem)
        n=n//10
split_digit()

```

68.print factors of a given number and total numbers of factors

```

def prime_factors():
    n=int(input("Enter the numeber :"))
    for i in range(1,n+1):
        if(n%i==0):
            print(i)
prime_factors

```

69.find the sum of digits of a given number

```

def sum_of_digits():
    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)
sum_of_digits()

```

70.find the sum of digits of a given number till the resulting number is single digit

```

def sum_of_dig_upto_sinle_digit():
    number = int(input("Enter number: "))

    total_sum = 0
    step = 1

    condition = True

    while condition:

        while number:
            total_sum += number%10
            number //= 10

        print("Step-%d Sum: %d" %(step, total_sum))
        number = total_sum
        total_sum = 0
        step += 1
        condition = number > 9
sum_of_dig_upto_sinle_digit()

```

71.To find the sum of squares of digits in a given number

```

import math
def sum_squares():
    n=int(input("enter teh value for n :"))
    s=0
    while(n!=0):
        rem=n%10
        s=s+rem
        n=n/10

    print("the sum of digits is :",s)
    print("the sum of square of digits is :",math.sqrt(s))
sum_squares()

```

72.To find the reverse of a given number.

```

def rev():
    n=int(input("enter the number :"))
    rev=0

```

```
while(n>0):
    rem=n%10
    rev=(rev*10)+rem
    n=n//10

print("the reverse of a given number is :",rev)
rev()
```

```
enter the number :123
the reverse of a given number is : 321
```

73.palindrome or not

```
def palindrome():
    n=int(input("enter the number :"))
    rev=0
    temp=n
    while(n!=0):
        rem=n%10
        rev=(rev*10)+rem
        n=n//10
    print("the reverse of a given number is :",rev)
    if(temp==rev):
        print("palindrome")
    else:
        print("not a palindrome")
palindrome()
```

74.count the number of digits in a given number

```
def count_numbers():
    n=int(input("enter the value for n :"))
    count=0
    while(n!=0):
        count=count+1
        n=n//10

    print("the total count is :",count)
count_numbers()
```

75.frequency of digit of a given number

```
def frequency():
    count=0
    n=int(input("enter the value :"))
    m=int(input("enter digit to be counted m"))
    while(n!=0):
        rem=n%10
        if(rem==m):
            count=count+1
```

```

n=n//10
print("the number of digit present is ",m)
print("the number of time present is",count)
frequency()

```

76.perfect number or not

```

def perfect():
    n = int(input("Enter any number: "))
    sum1 = 0
    for i in range(1, n):
        if(n % i == 0):
            sum1 = sum1 + i
    if (sum1 == n):
        print("The number is a Perfect number!")
    else:
        print("The number is not a Perfect number!")
perfect()

```

77.To find factorial of given number

```

def factorila():
    fact=1
    n=int(input("enter the number"))
    for i in range(1,n+1):
        fact=fact*i
    print("the factorial of a given number is :",fact)
factorila()

```

78.Convert decimal number into binary number

```

def binary():
    n=int(input("enter the binary number:"))
    n1=n
    sum=0
    i=0
    while(n!=0):
        r=n%10
        sum=sum+r*(2**i)
        i=i+1
        n=n//10
    print("the decimal equvalent of",n1,"is",sum)
binary()

```

79.To find the GCD and LCM of two input numbers

```

def gcd_lcm():
    m=int(input("enter the number:"))

```

```

n=int(input("enter the number:"))
m1=m
n1=n
while(m!=n):
    if(m>n):
        m=m-n
    else:
        n=n-m
gcd=m
lcm=(m1*n1)/gcd
print("gcd of ",m1,n1,"is",gcd)
print("lcm of",m,n,"is",lcm)
gcd_lcm()

```

80.To print first n terms of fibonacci numbers

```

def fib_series():
    n=int(input("enter the value:"))
    fib1=0
    fib2=1
    if(n==1):
        print(fib1)
    elif(n==2):
        print(fib1,fib2)
    else:
        print(fib1,fib2)
        for i in range(3,n+1):
            fib3=fib1+fib2
            print(fib3)
            fib1=fib2
            fib2=fib3
fib_series

```

81.To print twin prime numbers up to specified limit

```

def twin_prime():
    n=int(input())
    l=[]
    for i in range(2,n+1):
        n=int(input())
        l.append(n)
    for i in range(0,len(l)-1):
        if(l[i+1]-l[i]==2):
            print(l[i],"-",l[i+1],"-are twin prime numbers")
        else:
            print(l[i],"-",l[i+1],"-are not twin prime numbers")
twin_prime()

```

82.Armstrong or not

```
def armstrong():
    n=int(input("enter the how many digits number will you give:"))
    x=int(input("enter the value:"))
    sum=0
    while(n!=0):
        rem=n%10
        #pow=pow+rem**n
        sum=sum+rem**n
        n=n//10
    if(sum==n):
        print("the given number is armstrong number")
    else:
        print("the given number is not a armstrong number")
```

83.Display the tables for input n(2*1=2)

```
def table():
    n=int(input("enter the table:"))
    h=int(input("enter the last digit:"))
    for i in range(1,h+1):
        print(n,"*",i,"=",n*i)
table()
```

```
enter the table:5
enter the last digit:10
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

84.To print nth fibonacci number

```
def solve(n):
    if(n<=2):
        return n-1
    else:
        return solve(n-1)+solve(n-2)
n=int(input("enter the value:"))
print(solve(n))
```

```
enter the value:3
1
```

85.To find square root of a given number without using square root function.

```
def withoutsqrt():
    x=int(input("enter the number:"))
    print(x**0.5)
withoutsqrt()
```

86.To print the sequence of prime numbers between two intervals.

```
def prime_sequence():
    a=int(input("enter the starting point:"))
    b=int(input("enter the ending point:"))
    for i in range(a,b+1):
        if(b%i==0):
            print(i,end="\t")
prime_sequence()
```

▼ 87.To find largest,smallest and second largest of three numbers.

```
def lsm():
    a=int(input("enter the 1st number:"))
    b=int(input("enter the 2nd number:"))
    c=int(input("enter the 3rd number:"))
    m=max(a,b,c)
    n=min(a,b,c)
    print("max",m)
    print("the 2nd largest number is:",(a+b+c)-m-n)
    print("min",n)
lsm()
```

```
enter the 1st number:1
enter the 2nd number:2
enter the 3rd number:3
max 3
min 1
the 2nd largest number is: 2
```

88. To find HCF of two numbers.

89. To Display Armstrong Numbers between Two Intervals.

90. To check given number is strong number or not.

```
def strong():
    num=int(input("Enter the number: "))
```



```

sum=0
for i in range(1,num):
    if (num%i==0):
        sum=sum+i
if(sum==num):
    print("perfect number")
else:
    print("not a perfect number")
strong()

```

Enter the number: 13
not a perfect number

91. To display the multiplication table.

```

def mul():
    n=int(input("enter the value"))
    for i in range(1,10):
        print(n,"*",i,"=",n*i,end="\n")
mul()

```

```

enter the value2
2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
2 * 4 = 8
2 * 5 = 10
2 * 6 = 12
2 * 7 = 14
2 * 8 = 16
2 * 9 = 18

```

92. To print Floyd's triangle.

```

def floyd():
    count=1
    n=int(input("enter the value:"))
    for i in range(1,n+1):
        for j in range(1,i+1):
            print(count,end=" ")
            count=count+1
        print("\n")
floyd()

```

```

enter the value:5
1

2 3

4 5 6

7 8 9 10

```

11 12 13 14 15

93. To print Pascal triangle.

94. To print pyramids of numbers.

97. To find out prime factor of given number.

```
def primefact():
    n=int(input("Enter the value:"))
    for i in range(1,n+1):
        if(n%i==0):
            print(i,end=" ")
        if(n%i==0):
            print(i)
primefact()
```

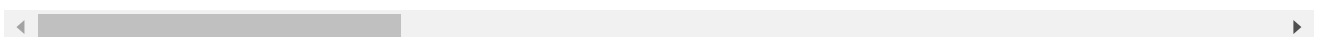
```
Enter the value:20
1 1
2 2
4 4
5 5
10 10
20 20
```

98. To compute the NCR.

99. To print 1 to 100 without using loop.

```
def printno(n):
    if n > 0:
        printno(n - 1)
        print(n, end = ' ')
printno(100)
```

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 :



100. Check the input number is a Neon Number or not. (Neon number is a number where the sum of digits of square of the number is equal to the number itself. Ex: 9 is a Neon Number – $9*9=81$, where $8+1=9$)

```
num = int(input("Enter a number \n"))
sqr = num*num
sumOfDigit = 0

while sqr>0:
    sumOfDigit =sumOfDigit + sqr%10
    sqr = sqr//10

if (num == sumOfDigit):
    print("Neon Number \n")
else:
    print("Not a Neon Number \n")
```

101. Check the input number is an Automorphic Number or not. (Automorphic number is a number whose square ends in the same digit as the number it self. Ex: 5 – Square ends with 5 (25))

```
num=int(input("Enter a number:"))
sqr=num*num
flag=0
while num!=0:
    if(num%10 != sqr%10):
        flag=-1
        break
    num=int(num/10)
    sqr=int(sqr/10)
if(flag==0):
    print("It is an Automorphic Number")
else:
    print("It is not an Automorphic Number")
```

102. Check the input number is a Spy Number or not. (A spy number is a number where the sum of its digits equals the product of its digits. For example, 1124 is a spy number, the sum of its digits is $1+1+2+4=8$ and the product of its digits is $1*1*2*4=8$.)

```
num=int(input("enter a number "))
s=0
prod=1
while(num>0):
    b=num%10
```

```

s=s+b
prod=prod*b
num=num//10
if(s==prod):
    print('It is a Spy number')
else:
    print('It is not a Spy number')

```

103. Check the input number is a Happy Number or not. (Happy number is a number which eventually reaches 1 when replaced by the sum of the square of each digit. For instance, 13 is a happy number because $\{1^2+3^2=10\}$, and $\{1^2+0^2=1\}$.)

```

num=int(input("Enter a number:"))
sum=0
while sum != 1 and sum != 4:
    sum=0
    while num!=0:
        rem = num % 10
        sum += (rem*rem)
        num //= 10
    num=sum

if sum==1:
    print("It is a Happy Number.")
else:
    print("It is an Unhappy Number.")

```

104. Check the input number is a Sunny Number or not. (A number n is called Sunny number if the next number (n+1) is a perfect square number. For example 15 is a Sunny number because $15+1=16$ is a perfect square number.)

```

num=int(input("Enter a number:"))
n1=n
if((n1=n1**0.5)*(n1**0.5)):
    print("It is a Sunny Number.")
else:
    print("It is Not a Sunny Number.")

```

105. Check the input number is a Fascinating Number or not. (Fascinating Number: When a number(3 digits or more) is multiplied by 2 and 3, and when both these products are concatenated with the original number, then it results in all digits from 1 to 9 present exactly once. There could be any number of zeros and are ignored. Examples: Input: 192. is an Fascinating Number because After multiplication with 2 and 3, and concatenating with original number, resultant number is 192384576 which contains all digits from 1 to 9).

```

flag=1
n=int(input("enter n"))
x=str(n*2)
y=str(n*3)
res=str(n)+x+y
temp=['1','2','3','4','5','6','7','8','9']
for ele in temp:
    c=res.count(ele)
    if(c!=1):
        flag=-1
        break
if(flag==1):
    print("fascinating number")
else:
    print("not fascinating")

```

106. Check the input number is a Disarium Number or not. (A disarium number is a number in which the sum of the digits to the power of their respective position is equal to the number itself (position is counted from left to right starting from 1). Hence,175 is a disarium number).

```

num = int(input())
rem = s = 0;
len = len(str(num))
n = num;
while(num > 0):
    rem = num%10;
    s += int(rem**len);
    num = num//10;
    len -= 1;

if(s == n):
    print( "disarium number");
else:
    print(" not a disarium number");

```

107. Check the input number is a Pronic Number or not. (Pronic number is a product of two consecutive integers of the form: $n(n+1)$. For example: $6 = 2(2+1) = n(n+1)$, $72 = 8(8+1) = n(n+1)$).

```

n = int(input("Enter a number: "))
f = 0
for i in range(n):
    if i * (i + 1) == n:
        f = 1
        break
if f==1:
    print("Pronic number")

```

```

else:
    print("Not a Pronic number")

```

108. Check the input number is a Trimorphic Number or not. (A number is called Trimorphic number if and only if its cube ends in the same digits as the number itself. In other words, number appears at the end of its cube. Ex: 5 - $555=125$).

```

num=int(input("Enter a number:"))
flag=0
cube_power=num*num*num
while num!=0:
    if num%10!=cube_power%10:
        flag=1
        break
    num//=10
    cube_power//=10
if flag==0:
    print("It is a Trimorphic Number.")
else:
    print("It is Not a Trimorphic Number.")

```

109. Check the input number is Evil or Odious Number. (An odious number is a nonnegative number that has an odd number of 1s in its binary expansion. An Evil number is a nonnegative number that has an even number of 1s in its binary expansion).

```

num=int(input("Enter a number:"))
one=0
while num!=0:
    if num%2==1:
        one+=1
    num//=2
if one%2==0:
    print("It is an Evil Number.")
else:
    print("It is Not an Evil Number.")

```

110. Generate the random numbers between the given interval.

```

import random
n=5
for i in range(0,n):
    print(random.randint(0,n))

0
3
1

```

2
2

111. To Compute the Speed of a Vehicle based on the input distance in KM and time in HR.

```
def speed():
    distance=int(input())
    time=int(input())
    speed=distance/time

    print("speed of the vehicle is",speed)

speed()
```

112. To Compute the next dividend of the input dividend and divisor. (Ex1: 2 divides 10 by giving the remainder as 0, hence 10 is the perfect dividend and the next dividend is 12. (10+2)
Ex2:7 failed to divide 10 by giving the remainder as 0, hence first need to find the perfect dividend and then need to compute the next dividend as perfect dividend + divisor. So we got 14 as the perfect dividend and then 21 as the next dividend.)

```
div=int(input())
dv=int(input())
if(div%dv==0):
    print(div+dv)
else:
    r=div
    div=div+r
    print(div+dv)

l=[1,2,3,3]
set.l1={}
l1.update(set((l)))
print(set.l1)
```

```
l=[]
z=int(input("enter the list size:"))
for i in range(0,z):
    l.append(input("enter the elemnt is string form:"))
l1=[]
var="".join(l)
t=(int(var)+1)
print("after adding the 1 to element is :",t)
while(t != 0):
    rem=t%10
    l1.append(rem)
    t=t//10
print(l1[::-1])
```

```

enter the list size:3
enter the elemnt is string form:1
enter the elemnt is string form:2
enter the elemnt is string form:3
after adding the 1 to element is : 124
[1, 2, 4]

```

```

l=["k","a","l","a"]
l1={}
for ele in l:
    l1.update(set(ele))
print(l1)

```

```

-----
ValueError                                Traceback (most recent call last)
<ipython-input-61-99689b32f458> in <module>
      2 l1={}
      3 for ele in l:
----> 4     l1.update(set(ele))
      5 print(l1)

```

ValueError: dictionary update sequence element #0 has length 1; 2 is required

SEARCH STACK OVERFLOW

```

l1=["k","a","l","a"]
l2={}
for i in range(0,len(l1)):
    #print(l.count('l[i]'))
    l2.set(append(l1(i))
print(l2)

```

```

-----
AttributeError                            Traceback (most recent call last)
<ipython-input-3-bc14154b3034> in <module>
      3 for i in range(0,len(l1)):
      4     #print(l.count('l[i]'))
----> 5     l2.append(l1(i))
      6 print(l2)

```

AttributeError: 'dict' object has no attribute 'append'

SEARCH STACK OVERFLOW

```

s="hello hi"
l=[]
for ele in s:
    l.append(ele)
print(l,end="\n")
for i in range(len(l),0):
    print(l[i],end=" ")

```



```
['h', 'e', 'l', 'l', 'o', ' ', 'h', 'i']
hello hi
```

```
s = "4a3b2c1d2a"
#output"aaaabbbccdaa"
l1=[]
l=[]
for ele in s:
    if(ele.isdigit()):
        l1.append(int(ele))
    else:
        l.append(ele)
print(l1)
print(l)
l2=[]
for i in range(0,len(l1)):
    for ele in l:
        if(l[i]<=ele):
            l2.append(ele)
print(l2)
```

```
s="3a4b1c"
k= ""
n= ""
for i in s:
    if (i.isdigit()):
        n+= i
    else:
        k += i * int(n)
        n = ""
print(k)
```

```
aaabbbbc
```

```
nums = [0, 1, 0, 2, 3]
n=nums
l1=[]
#[1, 2, 3, 0, 0]
l=[]
for ele in nums:
    if(ele==0):
        l.append(ele)
    else:
        l1.append(ele)
print(l)
print(l1)
l2=[]
l2=l1+l
print(l2)
```

```
[0, 0]
[1, 2, 3]
[1, 2, 3, 0, 0]
```

```
z=[1,2,3,4,5]
print(max(z))
```

5

```
n=5
for i in range(1,n+1):
    for k in range(0,i+1):
        print(" ",end="\n")
    for j in range(1,i+1):
        print(j,end="")
    print("\n")
```

```
rows = 5
k = 2 * rows - 2
for i in range(0, rows):
    # process each column
    for j in range(0, k):
        # print space in pyramid
        print(end=" ")
    k = k - 2
    #for j in range(1, i + 1):
        # display star
        # print(j, end="")
    for l in range(i+1,2):
        print(l,end="")
    print("")
```

1

```
rows=5
for i in range(1,rows+1):
    for j in range(1,rows-i):
        print(" ",end="")
    for j in range(1,i+1):
        print(j,end="")
    for j in range(i-1,0,-1):
        print(j,end="")
    print()
```

1 121 123211234321123454321

```
for(i=1;i<=row;i++)
{
```

```

        for(j=1;j<=row-i;j++)
        {
            printf(" ");
        }

        for(j=1;j<=i;j++)
        {
            printf("%d", j);
        }

        for(j=i-1;j>=1;j--)
        {
            printf("%d", j);
        }
        printf("\n");
    }

```

```

count=1
s="aaaabbbccdaa"
s1=""
for i in range(1,len(s)):
    if(s[i]==s[i-1]):
        count+=1
    else:
        s1=s1+str(count)+s[i-1]
        count=1
s1=s1+str(count)+s[-1]
print(s1)

```

4a3b2c1d2a

```

sen = "hello there my friend"
print(sen[::-1])

```

dnearf ym ereht olleh

```

s0 = "hello"
s1 = "helo"
s2={}
if(s0==s1):
    print(false)
else:
    s2=s0
print(s2)

```

hello

```

n=10
for i in range(1,n+1):
    if(n%i==0):
        print(i,end=" ")

```

```

def isUgly(n):
    if (n == 1):
        return 1
    if (n <= 0):
        return 0
    if (n % 2 == 0):
        return (isUgly(n // 2))

    if (n % 3 == 0):
        return (isUgly(n // 3))

    if (n % 5 == 0):
        return (isUgly(n // 5))

    # Otherwise return false
    return 0

# Driver Code
if __name__ == "__main__":

    no = isUgly(14)

    if (no == 1):
        print("Yes")
    else:
        print("No")

    1 2 5 10

```

ugly number or not

```

if(n==0):
    return False
while n % 2 == 0:
    n = n // 2
if n == 1:
    return True
while n % 3 == 0:
    n = n // 3
if n == 1:
    return True
while n % 5 == 0:
    n = n // 5
if n == 1:
    return True
return False

```

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