```python
# Factors :---
n=int(input("Enter any no:"))
factors = []
for i in range(1,n+1):
    if n%i==0:
        factors.append(i)

print("Factors are :",factors)

# WAP to arrenge all items from list in assending order.
l = [64, 34, 25, 12, 22, 11, 90, 5]
n = len(l)
for i in range(n-1):
    for j in range(n-i-1):
        if l[j] > l[j+1]:
            l[j], l[j+1] = l[j+1], l[j]
print(l)

# WAP to arrenge all items from list in desending order.
l = [64, 34, 25, 12, 22, 11, 90, 5]
n = len(l)
for i in range(n-1):
    for j in range(n-i-1):
        if l[j] < l[j+1]:
            l[j], l[j+1] = l[j+1], l[j]
print(l)

# Perfect number...
n=int(input("Enter any no:"))
sum = 0
for i in range(1,n):
    if n%i==0:
        sum=sum+i
if n==sum:
    print(f'given number {n} is perfect number')
else:
    print(f'given number {n} is not a perfect number')
```

----: Some Important Pattern examples :---

c	n=5	Clo1	Clo2	Clo3	Clo4	Clo5	Formulla		
1	Row1	1					range(1,2)	range(1, 1+1)	range(1, i+1)
2	Row2	1	2				range(1,3)	range(1, 2+1)	range(1, i+1)
3	Row3	1	2	3			range(1,4)	range(1, 3+1)	range(1, i+1)
4	Row4	1	2	3	4		range(1,5)	range(1, 4+1)	range(1, i+1)
5	Row5	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, i+1)

i	n=5	Clo1	Clo2	Clo3	Clo4	Clo5	Formulla		
1	Row1	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
2	Row2	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
3	Row3	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
4	Row4	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
5	Row5	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)

```python
# 1 2 3 4 5
# 1 2 3 4 5
# 1 2 3 4 5
# 1 2 3 4 5
# 1 2 3 4 5
n = int(input("Enter any no :"))
for i in range(1,n+1):
    for j in range(1,n+1):
        print(j,end=' ')
    print()

# 1
# 1 2
# 1 2 3
# 1 2 3 4
# 1 2 3 4 5
n = int(input("Enter any no :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(j,end=' ')
    print()
```

```python
# A B C D E
# A B C D E
# A B C D E
# A B C D E
# A B C D E
n = int(input("Enter any no :"))
for i in range(1,n+1):
    ch='A'
    for j in range(1,n+1):
        print(ch,end=' ')
        ch=chr(ord(ch)+1)
    print()

# A
# A B
# A B C
# A B C D
# A B C D E
n = int(input("Enter any no :"))
for i in range(1,n+1):
    ch = 'A'
    for j in range(1,i+1):
        print(ch,end=' ')
        ch=chr(ord(ch)+1)
    print()

# 2
# 2 4
# 2 4 6
# 2 4 6 8
# 2 4 6 8 10
n = int(input("Enter any no :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(2*j,end=" ")
    print()
```

```python
# 1
# 1 3
# 1 3 5
# 1 3 5 7
# 1 3 5 7 9
n = int(input("Enter any no :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(2*j-1,end=" ")
    print()

# O/P:--
# 10
# 10 8
# 10 8 6
# 10 8 6 4
# 10 8 6 4 2
# code for above output
k=[]
for i in range(10,1,-2):
    k.append(i)
    for j in k:
        print(j,end=" ")
    print()



# O/P:-- {1: 2, 2: 3}
# code for above output
t=(1,1,2,2,4,2)
dict={}
for i in t:
    count=0
    for j in t:
        if j==i:
            count=count+1
    if count>=2:
        dict[i]=count
print(dict)
```

```python
#  O/P --- {1: 2, 2: 3, 4: 1}
# code for above output
t=(1,1,2,2,4,2)
dict={}
for i in t:
    count=0
    for j in t:
        if j==i:
            count=count+1
    dict[i]=count
print(dict)


# *
# **
# ***
# ****
# *****
n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print("*"*i)


# *
# * *
# * * *
# * * * *
# * * * * *
n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print("* "*i)


#     *
#    **
#   ***
#  ****
# *****
n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "*(n-i),"*"*i)
```

```python
#          *
#        ***
#      *****
#    *******
#  *********

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "*(n-i),"*"*(2*i-1))

#          *
#        * *
#      * * *
#    * * * *
#  * * * * *
n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "*(n-i)," *"*i)

# 1
# 1 2
# 1 2 3
# 1 2 3 4
# 1 2 3 4 5

n=int(input("Enter the number of rows:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(j,end=" ")
    print()

#  *****
#   ****
#    ***
#     **
#      *
n=int(input("Enter the number of rows: "))
for i in range(n,0,-1):
    print(" "*(n-i),"*"*i)
```

```python
# *****
# ****
# ***
# **
# *

n=int(input("Enter the number of rows: "))
for i in range(n,0,-1):
    print("*"*i)

#  * * * * *
#   * * * *
#    * * *
#     * *
#      *
n=int(input("Enter the number of rows: "))
for i in range(n,0,-1):
    print(" "*(n-i)," *"*i)

#      *
#     * *
#    * * *
#   * * * *
#  * * * * *
#  * * * * *
#   * * * *
#    * * *
#     * *
#      *

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "*(n-i),"* "*i)
m=n-1
for i in range(m,0,-1):
    print(" "*(m-i)," *"*i)
```

```python
#      *
#     **
#    ***
#   ****
#  *****
# *****
# ****
# ***
# **
# *

n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print(" "*(n-i),"*"*i)
for i in range(n,0,-1):
    print("*"*i," "*(n-i))


# *
# * *
# * * *
# * * * *
# * * * * *
# * * * *
# * * *
# * *
# *
n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print("* "*i)
m=n-1
for i in range(m,0,-1):
    print("* "*i)
```

```
#     *
#    **
#   ***
#  ****
# *****
# *****
#  ****
#   ***
#    **
#     *
n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print(" "*(n-i),"*"*i)
for i in range(n,0,-1):
    print(" "*(n-i),"*"*i)
```

IF-ELIF-ELSE STATEMENT EXAMPLES

Example 1: Write a program to check given no is positive. (Only if-statement)

Example 2: Write a program to check given no is positive or negative. (Only if-else statement)

Example 3: Write a program to check given no is positive, negative or Zero.(Only if-elif-else statement)

Example 4: Write a program to swap two variables without using third variable.

Example 5: Write a program to swap two variables using third variable.

Example 6: Write a program to swap two variables using using Addition and Subtraction.

Example 9: Write a program to find squre root of given no.

Example 10: Write a program to find largest no among the three inputs numbers.

Example 11: Write a program to find area of triangle. (1/2* hight*base)

Example 12: Write a program to find area of square.

Example 13: Write a program to find given year is leep year or not.

While-Loop EXAMPLES

Example 1: Write a program to display n natural numbers. (In Horizontal-1,2,3,4,5……..)

Example 2: Write a program to calculate the sum of numbers.

Example 3: Write a program to find even no. (2,4,6,8,….)

Example 4: Write a program find odd no.(1,3,5,7,9,……)

Example 5: Write a program to find factorial of given no.

Example 6: Write a program to print your names ten times.

Example 7: Write a program to find how many vowels and consonants are present in strings.

Example 8: Write a program to add 5 in each elements in given list. [10,20,30,40,50]

Example 9: Write a program to add 5 in each elements in given tuple. (10,20,30,40,50)

Example 10: Write a program to create a list from given string.

Examples for FOR_LOOPs

Example 1: Print the first 10 natural numbers using for loop.

Example 2: Python program to print all the even numbers within the given range.

Example 3: Python program to calculate the sum of all numbers from 1 to a given number.

Example 4: Python program to calculate the sum of all the odd numbers within the given range.

Example 5: Python program to print a multiplication table of a given number

Example 6: Python program to display numbers from a list using a for loop.

Example 7: Python program to count the total number of digits in a number.

Example 8: .(madam=madam)

Example 9: Python program that accepts a word from the user and reverses it.

Example 10: Python program to check if a given number is an Armstrong number. (153=1**3+5**3+3**3)

Example 11: Python program to count the number of even and odd numbers from a series of numbers.

Example 12: Python program to display all numbers within a range except the prime numbers.

Example 13: Python program to get the Fibonacci series. (0,1,1,2,3,5,8,13,21……………..)

Example 14: Python program to find the factorial of a given number.

Example 15: Python program that accepts a string and calculates the number of digits and letters.

Example 16: Write a Python program that iterates the integers from 1 to 25.

Example 17: Python program to check the validity of password input by users.

Example 18: Python program to convert the month name to a number of days.