

Programs:

- Program to print Sum of squares of first n natural numbers

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

def squareSum(n):
    sum = 0
    for i in range(1, n+1):
        sum = sum + (i * i)

    return sum
print(squareSum(n))
```

- 2 . Program to check whether a number is Strong Number or Not.

A Strong number is a special number whose sum of the all digit's factorial should be equal to the number itself.

Ex:

num = 145

1! = 1

4! = 4*3*2*1 = 24

5! = 120

sum = 1+24+120 = 145.

Hence, It is a Strong Number

```
sum=0
num=int(input("Enter a number:"))
temp=num

while(num):
    i=1
    fact=1
    rem=num%10

    while(i<=rem):
        fact=fact*i
        i=i+1

    sum=sum+fact
    num=num//10

if(sum==temp):
    print("Strong number")
```

```
else:
    print("Not a strong number")
```

- 3 . Print this Pattern:

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

(Here n=5)

```
n = int(input("Enter the value of n: "))
for x in range(5, 0, -1):
    for y in range(x, 5):
        print(" ", end="")
    for z in range(0, x):
        print("*", end="")
    print()
```

- 4 . Print this Pattern

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

(Here n=5)

```
n = int(input("Enter the value of n: "))
for x in range(n, 0, -1):
    for y in range(x, n):
        print(" ", end="")
    for z in range(0, x):
        print("* ", end="")
    print()
```

- 5 . Print this Pattern

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

(Here n=5)

```
n = int(input("Enter the value of n: "))
for x in range(n,0,-1):
    for y in range(n,0,-1):
        print(y, end=" ")
    print()
```

- 6. Program to find the second Largest Number in a list entered by user

```
list=[]
num=int(input("Enter number of elements:"))
for i in range(1,num+1):
    item=int(input("Enter element:"))
    list.append(item)

print("List: ",list)
list.sort()
print("After sorting: ",list)
print("Second Largest is:",list[num-2])
```

- 7. Program to Find the Largest Even and Largest Odd Number in a list

```
list=[]
num=int(input("Enter number of elements: "))
for i in range(num):
    item=int(input("Enter Element: "))
    list.append(item)
even=[]
odd=[]
for i in list:
    if i%2==0:
        even.append(i)
    else:
        odd.append(i)
even.sort()
odd.sort()
print("Largest Even number:",even[len(even)-1])
print("Largest odd number: ",odd[len(odd)-1])
```

- 8. Program to check whether a Number is Armstrong or Not.

Armstrong Number is a Number such that the sum of the cubes of its digits is equal to the number itself. Armstrong numbers are 0, 1, 153, 370, 371, 407, etc.

Ex:.

$$\begin{aligned} 153 &= 1*1*1 + 5*5*5 + 3*3*3 \\ &= 1 + 125 + 27 \\ &= 153 \end{aligned}$$

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

sum = 0

temp = num
while num > 0:
    digit = num % 10
    sum += digit ** 3
    num //= 10

if temp == sum:
    print(temp, "is an Armstrong number")
else:
    print(temp, "is not an Armstrong number")
```

OUTPUT:

- 1

```
for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

- 2

```
for i in range(1,2,3):  
    print(i)
```

1

- 3

```
for i in range(10, 2, -2):  
    print(i, "Hello")
```

10 Hello
8 Hello
6 Hello
4 Hello

- 4

```
for i in range(7, -2, -9):  
    for j in range(i):  
        print(j)
```

0
1
2
3
4
5
6

- 5

```
x=1234  
while x%10:  
    x=x//10  
    print(x)
```

```
123
12
1
0
```

- 6

```
n=30
for i in range(2,n//4):
    if n%i == 0:
        print("thon")
    else:
        print("Bye")
```

```
thon
thon
Bye
thon
thon
```

- 7

```
for i in [10,20,30]:
    print("Hello", i)
```

```
Hello 10
Hello 20
Hello 30
```

- 8

```
x = 7
for i in range(x):
    if x==5:
        break
    print("H")
print(x)
```

```
H
H
```

H
H
H
H
H
7

- 9

```
L = [13, 12, 21, 16, 35, 7, 4]
s=5
s1=3
for i in L:
    if i%4==0:
        s=s+i
        continue
    if i%7==0:
        s1=s1+i
print(s, end="")
print(s1)
```

3766

- 10

```
count = 1

def doThis():
    global count

    for i in (1)
```

Error

- 11

```
mylist = [5,7,8,1,8]
mylist.sort()
print(mylist)
```

```
[1, 5, 7, 8, 8]
```

- 12

```
mylist = [5,7,8,1,8]
mylist.sort(reverse=False)
print(mylist)
```

```
[1, 5, 7, 8, 8]
```

- 13

```
def sorting(num):
    return len(str(num))

numbers = [123, 4567, 89, 12, 34567]
print(numbers)
```

```
[123, 4567, 89, 12, 34567]
```

- 14

```
fruits = ["apple", "orange", "mango", "banana"]
print(fruits.sort())
print(fruits.sort(reverse=False))
```

```
None
None
```

- 15

```
fruits = ["apple", "orange", "mango", "banana"]
print(fruits[-4:-1])
print(fruits[-4:])
print(fruits[:4])
```



```
['apple', 'orange', 'mango']  
['apple', 'orange', 'mango', 'banana']  
['apple', 'orange', 'mango', 'banana']
```

- 16

```
i = 5  
while True:  
    if i%0011 == 0:  
        break  
    print(i)  
    i=i+1
```

SyntaxError

- 17

```
x=5  
while(x<15):  
    print(x**2)  
    x+=3
```

- 18

```
for i in range(5):  
    for j in range(i):  
        print("A", end="")  
    print()
```

```
A  
AA  
AAA  
AAAA
```

- 19

```
num = 7  
for i in 7:  
    print(num)
```

Error

- 20

```
s1 = "silicon Institute"
count=0
for x in s1:
    if x!="i":
        count+=1
print(count)
```

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