

In [7]:

```
def fact(n):
    if n==1 or n==0:
        return 1
    else:
        return n*fact(n-1)

num=int(input('Enter a number : '))
print("The factorial of a number is : ",fact(num))
```

Enter a number : 5
The factorial of a number is : 120

In [23]:

```
poly = [1,2, -6, 2, -1]
x = int(input("Enter the value for x : "))
n = len(poly)
result = 0
for i in range(n):
    Sum = poly[i]
    for j in range(n - i - 1):
        Sum = Sum * x
    result = result + Sum
print('The result after solving equation is ',result)
```

Enter the value for x : 3
The result after solving equation is 132

In [24]:

```
strings = ["alice", "bob", "tonystark", "tommy"]
strings.sort(key = len)
print(strings)
```

['bob', 'alice', 'tommy', 'tonystark']

In [25]:

```
a=[]
n= int(input("Enter the number of elements in list:"))
for x in range(0,n):
    element=input("Enter element " + str(x+1) + ":")
    a.append(element)
max1=len(a[0])
temp=a[0]
for i in a:
    if(len(i)>max1):
        max1=len(i)
        temp=i
print("The word with the longest length is:")
print(temp)
```

Enter the number of elements in list:4
Enter element 1:gradient
Enter element 2:neural
Enter element 3:regression
Enter element 4:tensor
The word with the longest length is:
regression

In [27]:

```
l=int(input("Enter lower range: "))
u=int(input("Enter upper range: "))
a=[]
a=[x for x in range(1,u+1) if (int(x**0.5))**2==x and
sum(list(map(int,str(x))))<10]
print(a)
```

Enter lower range: 1
Enter upper range: 25
[1, 4, 9, 16, 25]

In [8]:

```
def word_count(str):
    counts = dict()
    words = str.split(" ")

    for word in words:
        if word in counts:
            counts[word] += 1
        else:
            counts[word] = 1
    return counts
print("The frequency of words in the string are : ")
print( word_count('The dog carries the bag and returns the bag to the owner'))
```

The frequency of words in the string are :
{'The': 1, 'dog': 1, 'carries': 1, 'the': 3, 'bag': 2, 'and': 1, 'return
s': 1, 'to': 1, 'owner': 1}