In [6]:
```
#Q1 Given a number, find the sum of its digits. Take the number as an input from the
```

In [7]:
```
num=eval(input("enter number on your choice: "))
len_input=len(str(num))
print("number you have enter contains",len_input,"digit")
extracted_digit=0
dig_sum=0
for i in range(len_input):
    extracted_digit=num%10
    dig_sum+=extracted_digit
    num=num//10
print("sum of the digit:",dig_sum)
```

```
enter number on your choice: 54637
number you have enter contains 5 digit
sum of the digit: 25
```

In [8]:
```
#Q2 Given a number, check whether the given number is an Armstrong number or not.
```

In [20]:
```
num=eval(input("enter number of your choice"))
sum_digit=0
order=len(str(num))
copy_num=num #when the while loop extist the num become 0 so we want to make a copy of
while(num>0):
    digit=num%10
    sum_digit+=digit**order
    num=num//10
if(sum_digit==copy_num):
    print(copy_num,"is armstrong")
else:
    print( copy_num," is not an armstrong")
```

```
enter number of your choice153
153 is armstrong
```

In [1]:
```
# Q3  Given a string, write a python function to check if it is palindrome or not
```

In [9]:
```
string=input("choose any string to check palindrom")
string_1=string[::-1] # this check the palindrom
if string_1==string:
    print(string,"is the palindrom")
else:
    print(string,":is not the palindrom")
```

```
choose any string to check palindromxyx
xyx is the palindrom
```

In [10]:
```
# Q4 Given an array which may contain duplicates, print all elements and their frequer
```

In [17]:
```
Array=[11,11,22,22,22,33,43,45,43,43,45]
frequency={}  #store frequncy of each element
for i in Array:# iterating over array elements for frequency
    if i in frequency:  #checking whether it is in dict or not
        frequency[i]+=1  #incremnt the frequncy count by 1
    else:
        frequency[i]=1   # set the count to 1
```

```
for key,value in frequency.items(): # print the element frequency
    print(f"{key}:{value}")
```

```
11:2
22:3
33:1
43:3
45:2
```

In [18]:
```
# Q5 . Given a number n, write a function to print all prime factors of n
```

In [21]:
```
def primefactor(n):
    for i in range(2,n):
        if(n%i==0): # i.e i is the factor of n
            s=0
            for j in range(2,i): #again check this j is prime or not
                if i%j==0: # every time j is divid i then output will be 1
                    s=1
            if(s==0): # and if not divisble then print(i)
                print(i)
primefactor(12)
```

```
2
3
```

In [1]:
```
# Q6 Given two numbers n and r, find the value of nCr (binomial coefficient: nCr = (n!
```

In [14]:
```
def binomial_cofficient(n,r):
    print("calculated the binomial cofficent is:" )
    if r>n:
        return 0
    if r==0 or r==n:
        return 1
    numerator=1
    denominator=1
    for i in range(1,min(r,n-r)+1):
        numerator*=n-i+1
        denominator*=i
    return numerator//denominator
n=4
r=3
result=binomial_cofficient(n,r)
print(result)
```

```
calculated the binomial cofficent is:
4
```

In [7]:
```
# Q7 Searching: Given a sorted array arr[] of n elements, write a function to search d
#Do it using linear and binary search techniques
```

In [12]:
```
def linearsearch(array,a):
    for i in range(len(array)): # what is the length of array
        if array[i]==x:
            return i
    return -1
array=["a","b","c","d","e","f","g","h","i","j","k"]
a="f"
print("element found at index:"+str(linearsearch(array,a)))
```

```
element found at index:5
```

In [13]:
```
# Q8 Input a text file (containing 1 or more paragraphs of English text) from the user
#occurrence of each word in this text file. Find the 3 most frequent
#words as well
```

In [19]:
```
lyrics='''Baby calm down, calm down
Girl, this your body e put in my heart for lockdown
For lockdown, oh lockdown
Girl you sweet like Fanta, Fanta
If I tell you say I love you no dey form yanga, oh yanga
No tell me no, no, no, no, whoa, whoa, whoa, whoa
Oh-oh-oh-oh-oh-oh-oh-oh-oh-oh
Baby come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love
You got me like whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa
Shawty come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love, hmm

I see this fine girl, for my party she wear yellow
Every other girl they dey do too much but this girl mellow
Naim I dey find situation I go use take tell am hello
Finally I find way to talk to the girl but she no wan follow
Who you come dey form for? Mm mm
Why you no wan conform? Mm mm
Then I start to feel her bum-bum (warm)
But she dey gimme small-small
I know say she sabi pass that one
But she feeling insecure
Cause her friends go dey gum her like chewing gum
Go dey gum her like chewing gum

Baby, calm down, calm down
Girl, this your body e put my heart for lockdown
For lockdown, oh lockdown
Girl you sweet like Fanta, Fanta
If I tell you say I love you no dey form yanga, oh yanga
No tell me no, no, no, no, whoa, whoa, whoa, whoa
Oh-oh-oh-oh-oh-oh-oh-oh-oh-oh
Baby come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love
You got me like whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa
Shawty come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love, hmm

As I reach my house I say make I rest small (Make I rest small)
As me I wake up na she dey my mind (Na she dey my mind)
Day one, day two, I no fit focus (I no fit focus)
Na so me I call am, say make we link up (Say make we link up)
As I start to dey tell her how I feel all my heart dey race
Baby girl, if you leave me I no go love again
Because e get many girls wey put my heart for pain
Shebi, you feel my pain

Baby, calm down, calm down
Girl, this your body e put my heart for lockdown
For lockdown, oh lockdown
Girl you sweet like Fanta, Fanta
If I tell you say I love you no dey form yanga, oh yanga
No tell me no, no, no, no, whoa, whoa, whoa, whoa
Oh-oh-oh-oh-oh-oh-oh-oh-oh-oh
Baby come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love
You got me like whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa-whoa
Shawty come gimme your lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-lo-love, hmm'''
```

```
D={}
for word in lyrics.split(): # split all the word
    if word in D:  # if the word present in the D then count+1
        D[word]=D[word]+1
    else:
        D[word]=1
max_val=max(D.values())

for word in D:
    if D[word]==max_val: # if the word is equal to the max value i.e the maximum value
        print("The maximum value in text":,word)
        print()
        print("count of the value is:",max_val)
        break
```

```
the maximum value in text I

count of the value is: 22
```

In [ ]:

In [ ]: