Nested List and Nested Dictionary

In [7]:
```
#More on Nested List
nested_list = [1,2,['a',1,[2, 3, 6, 8, 20, 30, 40],3]]
#How we can access 6 in above list
print(nested_list[2][2][3])
print(nested_list[2][2])
print(nested_list[2][2:4])
```

```
8
[2, 3, 6, 8, 20, 30, 40]
[[2, 3, 6, 8, 20, 30, 40], 3]
```

In [1]:
```
#Nested Dictionary --> Dictionary inside dictionary is known as Nested Dictionary
x= {1:{"name":"Pratyush","class":"M.Tech","Age":24},
    2:{"name":"Abhishek","class":"M.Tech","Age":26} }
print(x)
```

```
{1: {'name': 'Pratyush', 'class': 'M.Tech', 'Age': 24}, 2: {'name': 'Abhishe', 'class': 'M.Tech', 'Age': 26}}
```

In [2]:
```
#Access the element of a dictionary:
x= {1:{"name":"Pratyush","class":"M.Tech","Age":24},
    2:{"name":"Abhishek","class":"B.Tech","Age":26} }
print(x[2]["class"])
print(x[2]["Age"])
```

```
B.Tech
26
```

In [3]:
```
#add the element of a dictionary:
x= {1:{"name":"Pratyush","class":"M.Tech","Age":24},
    2:{"name":"Abhishek","class":"B.Tech","Age":26} }
x[3]={"hello":"world"}
x["education"]="PHD"
print(x)
```

```
{1: {'name': 'Pratyush', 'class': 'M.Tech', 'Age': 24}, 2: {'name': 'Abhishek', 'class': 'B.Tech', 'Age': 26}, 3: {'hello': 'world'}, 'education':
'PHD'}
```

In [8]:
```
#Matrix Using Nested List
x=[[1,2,3],
   [4,5,6],
   [7,8,9],
   [4,8,9]]
for i in range(0,len(x)):
    print(x[i])
x[2][1]
```

```
[1, 2, 3]
[4, 5, 6]
[7, 8, 9]
[4, 8, 9]
```

Out[8]:
```
8
```

Practice Programs

Factorial of a Number

In [9]:
```
fact=1
for i in range(1,6):
    fact=fact*i
print(fact)
```

```
120
```

Program to find the ASCII value of the given character

In [33]:
```
c = input("Enter a String")
for i in c:
    print(ord(i),end=" ")
```

```
Enter a StringHello World
72 101 108 108 111 32 87 111 114 108 100
```

Python Program to Check weather a given Number is Prime or Not

In [ ]:
```
#prime Numbers
--> divisible by 1 and itself.
1--> n==1: it is neither prime neither composite
2 --> 2,1
7 -->7,1
9 -->1,3,9
```

In [10]:
```
n=int(input("Enter a number"))   #5
if n==1:
    print("1 is neither Prime nor Composite")
elif n>1:
    for i in range(2,n):
        if n%i==0:
            print("Not a prime Number")
            break
    else:
        print("It is a prime Number")

else:
    print("It is not a prime number")
```

```
Enter a number7
It is a prime Number
```

Python Program to Print Prime Number Between a Given Range

In [39]:
```
star=int(input("Enter a  start number :"))#10
end=int(input("Enter a end number :"))  #20
for i in range(star,end): # 10 20--> 10,11,12,13,14,15,16,17,18,19
    if i==0 or i==1:
        continue
    else:
        for j in range(2,i):
            if i%j==0:
                break
        else:
            print(i)
```

```
Enter a  start number :10
Enter a end number :20
11
13
17
19
```

Python Program to Check weather a Given Number is Perfect or Not

In [60]:
```
n=int(input())
sum=0
for i in range(1,n):
    if n%i==0:
        sum=sum+i
if n==sum:
    print("It is Perfect Number")
else:
    print("It is not a perfect")
```

```
6
It is Perfect Number
```

Python Program to Check weather a Given Number is Fibonacci or Not

In [41]:
```
n=int(input("Enter the number")) #2
a=0
b=1
if n==0 or n==1:
    print("True")
c=a+b
for i in range(c,n+1):
    if c==n:
        print("True")
    a=b
    b=c
    c=a+b
```

```
Enter the number34
True
```

Python Program to Find the Product of the Digit of a Number

In [55]:
```
n=1234
product = 1
while n!=0:
    rem=n%10
    product=product*rem
    n=n//10
print(product)
```

```
24
```