In [22]:
```
num=int(input("enter a number:"))
factorial=1
if num < 0:
    print("factorial does not exit for negative number")
elif num == 0:
    print("the fatorial of 0 is 1")
else:
    for i in range(1,num+1):
        factorial=factorial*i
        print("the factorial of",num,"is",factorial)
```

```
enter a number:5
the factorial of 5 is 1
the factorial of 5 is 2
the factorial of 5 is 6
the factorial of 5 is 24
the factorial of 5 is 120
```

In [33]:
```
num=int(input("Enter any number : "))
if num>1:
    for i in range(2,num):
        if(num%i == 0):
           print(num,"is not a prime number but composite number")
           break
        else:
           print(num,"is a prime number but not composite number")
elif num == 0 or num == 1:
       print(num,"is a neither prime or nor composite number")
else:
     print("enter positive number only")
```

```
Enter any number : 8
8 is not a prime number but composite number
```

In [44]:
```
str1=input("Enter the string:")
if(str1==str1[:: -1]):
    print("it is a palindrome")
else:
    print("it is not a palindrome")
```

```
Enter the string:hello
it is not a palindrome
```

In [42]:
```
import math
a=float(input("enter base:"))
b=float(input("enter height:"))
x=float(input("enter angle:"))
c=math.sqrt(a**2+b**2)
print("Hypotehuse =",c)
```

```
enter base:10
enter height:6
enter angle:45
Hypotehuse = 11.661903789690601
```

In [54]:
```
str1=input("Enter the string: ")
d= dict ()
for c in str1:
    if c in d:
        d[c] = d[c] + 1
    else:
        d[c]=1
    print(d)
```

```
Enter the string: bnh nhk bnh
{'b': 1}
{'b': 1, 'n': 1}
{'b': 1, 'n': 1, 'h': 1}
{'b': 1, 'n': 1, 'h': 1, ' ': 1}
{'b': 1, 'n': 2, 'h': 1, ' ': 1}
{'b': 1, 'n': 2, 'h': 2, ' ': 1}
{'b': 1, 'n': 2, 'h': 2, ' ': 1, 'k': 1}
{'b': 1, 'n': 2, 'h': 2, ' ': 2, 'k': 1}
{'b': 2, 'n': 2, 'h': 2, ' ': 2, 'k': 1}
{'b': 2, 'n': 3, 'h': 2, ' ': 2, 'k': 1}
{'b': 2, 'n': 3, 'h': 3, ' ': 2, 'k': 1}
```

In [55]:
```
str1=input("Enter the string: ")
d= dict ()
for c in str1:
    if c in d:
        d[c] = d[c] + 1
    else:
        d[c]=1
    print(d)
```

```
Enter the string: string
{'s': 1}
{'s': 1, 't': 1}
{'s': 1, 't': 1, 'r': 1}
{'s': 1, 't': 1, 'r': 1, 'i': 1}
{'s': 1, 't': 1, 'r': 1, 'i': 1, 'n': 1}
{'s': 1, 't': 1, 'r': 1, 'i': 1, 'n': 1, 'g': 1}
```

In [56]:
```
2/3
```

Out[56]:
```
0.6666666666666666
```

In [57]:
```
6<<2
```

Out[57]:
```
24
```

In [59]:
```
6|2
```

Out[59]:
```
6
```

In [60]:
```
(6&2)
```

Out[60]:
```
2
```

In [ ]:
```

```