In [1]:
```
num = int(input("Enter a number: "))

factorial = 1


if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
else:
   for i in range(1,num + 1):
       factorial = factorial*i
   print("The factorial of",num,"is",factorial)
```

```
The factorial of 6 is 720
```

In [1]:
```
num = int(input("Enter a number: "))

if num == 1:
    print(num, "is not a prime number")
elif num > 1:
   # check for factors
   for i in range(2,num):
       if (num % i) == 0:
           print(num,"is not a prime number")
           print(i,"times",num//i,"is",num)
           break
   else:
       print(num,"is a prime number")
else:
   print(num,"is not a prime number")
```

```
456 is not a prime number
2 times 228 is 456
```

In [3]:
```
def isPalindrome(str):

        # Run loop from 0 to len/2
        for i in range(0, int(len(str)/2)):
                if str[i] != str[len(str)-i-1]:
                        return False
        return True


s = "level"
ans = isPalindrome(s)

if (ans):
        print("Yes")
else:
        print("No")
```

```
Yes
```

In [2]:
```
def pythagoras(opposite_side,adjacent_side,hypotenuse):
        if opposite_side == str("x"):
            return ("Opposite = " + str(((hypotenuse**2) - (adjacent_side**2))**0.5))
```

```
        elif adjacent_side == str("x"):
            return ("Adjacent = " + str(((hypotenuse**2) - (opposite_side**2))**0.5))
        elif hypotenuse == str("x"):
            return ("Hypotenuse = " + str(((opposite_side**2) + (adjacent_side**2))**
        else:
            return "You know the answer!"

print(pythagoras(5,12,'x'))
print(pythagoras(5,'x',13))
print(pythagoras('x',12,13))
print(pythagoras(5,12,13))
```

```
Hypotenuse = 13.0
Adjacent = 12.0
Opposite = 5.0
You know the answer!
```

In [4]:

```
from collections import Counter


string = "Hellotohello"


res = Counter(string)


print("Count of all characters in Hellotohello is :\n "
        + str(res))
```

```
Count of all characters in Hellotohello is :
 Counter({'l': 4, 'o': 3, 'e': 2, 'H': 1, 't': 1, 'h': 1})
```

In [ ]: