In [4]:
```
#Armstrong number
n=int(input("Enter number :"))
l=0
temp=n
for i in str(n):
    l+=1
sum=0
while n!=0:
    d=n%10
    sum=sum+(d**l)
    n=n//10
if sum==temp:
    print("Given number is an armstrong number.")
else:
    print("Given number is not an armstrong number.")
```

```
Enter number :370
Given number is an armstrong number.
```

In [8]:
```
#Prime number
a=int(input("Enter Number :"))
flag=0
for i in range(2,n):
    if n%i==0:
        flag=1
        break
if flag==0:
    print(a," is a prime number")
else:
    print(a," is not a prime number")
```

```
Enter Number :13
13  is a prime number
```

In [14]:
```
#Prime number
a=int(input("Enter Starting Number :"))
a1=int(input("Enter Ending Number :"))
count=0
for i in range(a,a1+1):
    flag=0
    for j in range(2,i):
        if i%j==0:
            flag=1
    if flag==0:
        print(i,end=" ")
```

```
Enter Starting Number :1
Enter Ending Number :50
1 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

In [24]:
```
#Patterns
'''*
   * *
   * * *
   * * * *
   * * * * *'''
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print("*",end=" ")
    print()
```

```
Enter rows. :5
*
* *
* * *
* * * *
* * * * *
```

In [25]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(j,end=" ")
    print()
```

```
Enter rows. :5
1
```

```
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

In [26]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(i,end=" ")
    print()
```

```
Enter rows. :5
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

In [29]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(i+j-1,end=" ")
    print()
```

```
Enter rows. :5
1
2 3
3 4 5
4 5 6 7
5 6 7 8 9
```

In [31]:
```
n=int(input("Enter rows. :"))
k=1
for i in range(1,n+1):
    for j in range(1,i+1):
        print(k,end=" ")
        k+=1
    print()
```

```
Enter rows. :5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

In [32]:
```
n=int(input("Enter rows. :"))
k=65
for i in range(1,n+1):
    for j in range(1,i+1):
        print(chr(k),end=" ")
        k+=1
    print()
```

```
Enter rows. :6
A
B C
D E F
G H I J
K L M N O
P Q R S T U
```

In [38]:
```
n=int(input("Enter rows. :"))
k=97
for i in range(1,n+1):
    for j in range(1,i+1):
        print(chr(k),end=" ")
        k+=1
    print()
```

```
Enter rows. :5
a
b c
d e f
g h i j
```

```
k l m n o
```

In [41]:
```
n=int(input("Enter rows. :"))
k=97
b=1
for i in range(1,n+1):
    for j in range(1,i+1):
        if i%2==0:
            print(chr(k),end=" ")
            k+=1
        else:
            print(b,end=" ")
            b+=1
    print()
```

```
Enter rows. :5
1
a a
1 2 3
a a a a
1 2 3 4 5
```

In [42]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        if i%2==0:
            print("*",end=" ")
        else:
            print("#",end=" ")
    print()
```

```
Enter rows. :5
#
* *
# # #
* * * *
# # # # #
```

In [44]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        if (i+j)%2==0:
            print("1",end=" ")
        else:
            print("0",end=" ")
    print()
```

```
Enter rows. :5
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

In [46]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,n+2-i):
        print("#",end=" ")
    print()
```

```
Enter rows. :5
# # # # #
# # # #
# # #
# #
#
```

In [52]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(" ",end=" ")
    for k in range(i,n+1):
        print("#",end=" ")
    print()
```

```
Enter rows. :5
```

```
  # # # # #
    # # # #
      # # #
        # #
          #
```

In [59]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(" ",end=" ")
    for k in range(i,n+1):
        print("#",end="   ")
    print()
```

```
Enter rows. :6
  #   #   #   #   #   #
    #   #   #   #   #
      #   #   #   #
        #   #   #
          #   #
            #
```

In [4]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,n+1-i):
        print(" ",end=" ")
    for k in range(1,i+1):
        print("#",end=" ")
    print()
```

```
Enter rows. :5
        #
      # #
    # # #
  # # # #
# # # # #
```

In [5]:
```
n=int(input("Enter rows. :"))
for i in range(1,n+1):
    for j in range(1,n+1-i):
        print(" ",end=" ")
    for k in range(1,i+1):
        print("#",end="   ")
    print()
```

```
Enter rows. :5
        #
      #   #
    #   #   #
  #   #   #   #
#   #   #   #   #
```

CH.-3 Functions.

1. Built in function.
2. User defined function.

Syntax

```
1. def function_name(parameter):
2.          body of function
3.          return value
```

In [7]:
```
def wish(name):
    print("Hello ",name," Good monring!!")
name=input("Enter Name :")
wish(name)
```

```
Enter Name :jenil
Hello  jenil  Good monring!!
```

Different categories of user defined functions.

Different categories of user defined functions:

1. Function with no parameter and no return type.

In [ ]:
```
def printline():
    print("Jenil")
printline()
```

1. Function with parameters and no return type.

In [ ]:
```
def wish(name):
    print("Hello ",name," Good monring!!")
name=input("Enter Name :")
wish(name)
```

1. Function with parameter and with return type.

In [8]:
```
def printline(s):
    return s
s=input("Enter name :")
t=printline(s)
print(t)
```

```
Enter name :jenil
jenil
```

1. Function with no parameter and with return type.

In [ ]:
```
def printline():
    s=input("Enter name :")
     return s
t=printline()
print(t)
```

In [9]:
```
a=int(input("Enter num. :"))
a1=int(input("Enter num. :"))

def summation(a,a1):
    return (a+a1)

sum=summation(a,a1)
print(sum)
```

```
Enter num. :1
Enter num. :2
3
```

In [10]:
```
a=int(input("Enter num. :"))
def EveOdd(a):
    if a%2==0:
        print("Even")
    else:
        print("Odd")
EveOdd(a)
```

```
Enter num. :52
Even
```

In [11]:
```
print(print("jenil"))
```

```
jenil
None
```

In [15]:
```
a=int(input("Enter num. :"))
a1=int(input("Enter num. :"))

def summation(a,a1):
    sum=a+a1
    sub=a-a1
    mul=a*a1
    return sum,sub,mul
```

```
t=summation(a,a1)
for i in t:
    print(i)
```

```
Enter num. :5
Enter num. :63
68
-58
315
```

Function Specifications.

1. Dockstring
    A. Text between the trple quotation mark is called dockstrindg.
    B. Provide specifications of the finction.