In [2]:
```
#fibonacci number
n=int(input())
a=0
b=1
for i in range(1,n):
    print(a,end=" ")
    c=a+b
    a=b
    b=c
```

```
8
0 1 1 2 3 5 8
```

In [5]:
```
#given number is fibonacci or not
import math
n=4
a=5*n*n+4
b=5*n*n-4
c=int(math.sqrt(a))
d=int(math.sqrt(b))
if c*c==a or d*d==b:
    print('fib')
else:
    print('not fib')
```

```
not fib
```

In [6]:
```
#ASCII Values
a='g'
print(ord(a))
```

```
103
```

In [11]:
```
#sum of the numbers
a=3
b=a*(a+1)/2
print(b)
```

```
6.0
```

In [13]:
```
#sum of squares
n=3
print((n * (n + 1) * (2 * n + 1)) // 6)
```

```
14
```

In [16]:
```
#cube of numbers
a=3
b=0
for i in range(1,a+1):
    b=b+i*i*i
print(b)
```

```
36
```

In [57]:
```
#sum of list
a=[11,12,13]
b=0
for i in a:
    b=b+i
print(b)
```

```
36
```

In [58]:
```

a=[1,2,3]
b=0
for i in range(len(a)):
    b=b+a[i]
print(b)
```

```
6
```

In [59]:
```
#multiply numbers
a=[1,2,3,4]
b=1
for i in a:
    b=b*i
print(b)
```

```
24
```

In [21]:
```
#rotate array
a=[1,2,3,4,5]
b=a[1:]+a[:1]
print(b)
```

```
[2, 3, 4, 5, 1]
```

In [26]:
```
#Python Program to Find remainder of array multiplication divided
a=[1,2,3,4]
b=4
c=1
for i in range(len(a)):
    c=c*a[i]
print(c)
d=c%b
print(d)
```

```
24
0
```

In [33]:
```
#monotic array
a=[1,2,3,4]
b=sorted(a)
print(a)
c=a[::-1]
print(c)
if a==b or a==c:
    print('True')
else:
    print('false')
```

```
[1, 2, 3, 4]
[4, 3, 2, 1]
True
```

In [40]:
```
#Python program to interchange first and last elements in a list
a=[1,2,3,4,5,6]
b=a.pop(0)
c=a.pop(-1)
d=a.insert(0,c)
e=a.append(b)
print(a)
```

```
[6, 2, 3, 4, 5, 1]
```

In [41]:
```
a=[1,2,3,4,5,6]
a[0],a[-1]=a[-1],a[0]
print(a)
```

```
[6, 2, 3, 4, 5, 1]
```

In [44]:
```
#swap two numbers
a=10
b=20
a,b=b,a
print(a)
print(b)
```

```
20
10
```

In [45]:
```
a=10
b=20
temp=a
a=b
b=temp
print(a)
print(b)
```

```
20
10
```

In [47]:
```
a=[1,2,3,4,4,5]
a.reverse()
print(a)
```

```
[5, 4, 4, 3, 2, 1]
```

In [49]:
```
a=[3,5,2,1,7]
b=sorted(a,reverse=True)
print(b)
```

```
[7, 5, 3, 2, 1]
```

In [63]:
```
#Python program to find N largest elements from a list
a=[1,8,5,4,7]
b=3
a.sort()
print(a)
print(a[-b:])
```

```
[1, 4, 5, 7, 8]
[5, 7, 8]
```

In [67]:
```
#Python program to print all odd numbers in a range
a=1
b=5
for i in range(a,b+1):
    if i%2==1:
        print(i,end=" ")
```

```
1 3 5
```

In [68]:
```
#Python program to print positive numbers in a list
a=[-1,3,5,-4,6]
for i in a:
    if i>0:
        print(i,end=" ")
```

```
3 5 6
```

In [69]:
```
#Python program to print all positive numbers in a range
a=-5
b=4
for i in range(a,b+1):
    if i>0:
        print(i,end=" ")
```

```
1 2 3 4
```

In [71]:
```
#Remove multiple elements from a list in Python
# Original list
a = [1, 2, 3, 4, 5, 6, 7, 8, 9]

# Elements to remove
remove_elements = [2, 4, 6, 8]

# Remove elements
for element in remove_elements:
    if element in a:
        a.remove(element)

print("Modified list:", a)
```

```
Modified list: [1, 3, 5, 7, 9]
```

In [72]:
```
a=10
for i in range(1,a+1,2):
    print(i)
```

```
1
3
5
7
9
```

In [73]:
```
a=[1,2,3,4,[],7,[]]
b=[]
for i in a:
    if b in a:
        a.remove(b)
print(a)
```

```
[1, 2, 3, 4, 7]
```

In [74]:
```
# Python program to print duplicates from
# a list of integers
lis = [1, 2, 1, 2, 3, 4, 5, 1, 1, 2, 5, 6, 7, 8, 9, 9]

uniqueList = []
duplicateList = []

for i in lis:
    if i not in uniqueList:
        uniqueList.append(i)
    elif i not in duplicateList:
        duplicateList.append(i)

print(duplicateList)
```

```
[1, 2, 5, 9]
```

In [76]:
```
#cummulative sum
a=[10,20,30,40,50]
c=0
b=[]
for i in a:
    c=c+i
    b.append(c)
print(b)
```

```
[10, 30, 60, 100, 150]
```

In [79]:
```
#Sum of number digits in List
a=[12,34,56,55,67]
b=[]

for i in a:
    c=0
    for j in str(i):
        c=c+int(j)
    b.append(c)
print(b)
```

```
[3, 7, 11, 10, 13]
```

In [ ]:
```

```