

Pattern Programming

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5

0 1 2 3 4 0 1 2 3 0 1 2 0 1

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0 1 2 3 4 5
0 1 2 3 4
0 1 2 3
0 1 2
0 1
```

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77799999
a = [1,3,5,7,9]
for i in range(0,len(a)):
    for j in range(-1,i):
        print(a[i], end=' ')
    print()
```

1
3 3
5 5 5
7 7 7 7
9 9 9 9 9

4

```
print()
```

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

5.

```

1
3 2
6 5 4
10 9 8 7

```

6.

```

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1

```

7.

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

```

1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
6 12 18 24 30 36
7 14 21 28 35 42 49
8 16 24 32 40 48 56 64

```

9

```
*****
In [9]: for i in range(5,0,-1):
        for j in range(10-i):
            print(' ',end=' ')
        for j in range(i):
            print('x',end=' ')
        print()


        x x x x x
        x x x x x
        x x x x
        x x x
        x x
        x
```

10.

```

*****
in [10]: for i in range(7):
          for j in range(10-i-1):
            print(' ', end = ' ')
          for j in range(i+1):
            print('*', end = ' ')
          print()

```



11

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for i in range(7):
    for j in range(i):
        print('*', end = ' ')

    print()

for i in range(7,0,-1):
    if i == 7:
        continue
    for j in range(i):
        print('*', end = ' ')

    print()

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*****  
in [12]:   for i in range(6):  
           for j in range(i):  
               print('*', end = ' ')  
             print()  
  
           for i in range(4,0,-1):  
               for j in range(i):  
                   print('* ', end = ' ')  
                 print()
```

12

```
*****  
in [13]: for i in range(5):  
         for j in range(5-i-1):  
             print(' ', end = ' ')  
         for k in range(1+i):  
             print('*', end = ' ')  
         print()  
  
         for j in range(4):  
             for l in range(i + 1):  
                 print(' ', end = ' ')  
             for k in range(4,i,-1):  
                 print('*', end = ' ')  
             print()  
  
          *
```

22

```
*****  
in [14]: for i in range(5,0,-1):  
         for j in range(5-i):  
             print(' ',end = '')  
         for j in range(1):  
             print('* ', end = ' ')  
         print()  
  
         for i in range(5):  
             for j in range(5-i-1):  
                 print(' ',end = '')  
             for j in range(i+1):  
                 print('* ', end = ' ')  
             print()  
  
         *
```

15

```
***** ***** *****
in [16]: print('i * 16, end = '\n')
         i = (16 // 2) - 1
         j = 2
         while i != 0:
             while j <= (16 - 2):
                 print('i * i, end = '')
                 print('j, end = ')
                 print('i, end = '\n')
                 i = i - 1
                 j = j + 2

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