

22/09/2025, Monday.

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```

$i = 1, 2, 3, 4, 5$

```
for i in range(1, 6, 1):
```

```
    for j in range(5, i, -1):
```

```
        print(" ", end = " ")
```

```
        for k in range(1, i+1, 1): (1, 1+1, 1) (1, 2, 1) (1 time only)
            print("x", end = " ")
```

```
        print()
```

$i = 1$

$j = 5, 4, 3, 2$

$i = 3$

$j = 5, 4, 3$

$i = 2$

$j = 5, 4, 3, 2$

$i = 4$

$j = 5, 4$

$i = 5$

$j = 5$

```
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* *
*
```

```
for i in range(1, 6, 1):
```

```
    for j in range(1, i+1, 1):
```

```
        print("*", end = " ")
```

```
    print()
```

```
for x in range(1, 5, 1):
```

```
    for y in range(5, x, -1):
```



print ("x", end = " ")

print()

for increasing  $\Delta l$

$i = 1, 2, 3, 4, 5$

$i = 1$   $i = 2$   $i = 3$   $i = 4$   $i = 5$   
 $j = 1$   $j = 1, 2$   $j = 1, 2, 3$   $j = 1, 2, 3, 4$   $j = 1, 2, 3, 4, 5$

for decreasing  $\Delta l$

$x = 1, 2, 3, 4$

$x = 1$

$y = 5, 4, 3, 2$

$x = 2$

$y = 5, 4, 3$

$x = 3$

$y = 4, 3$

$x = 4$

$y = 2$

Butterfly pattern:

```

x
x x
x x x
x x x x
x x x x x
x x x x x
x x x
x x
x

```

x

$i = 1$

\*

for  $i$  in range(1, 6, 1):  
 print("x" \* i, end = " ") # Starting point Star  
 print(" " \* (2 \* (5 - i)), end = " ") # this print is used to leave space b/w 2 star  
 print("x" \* i, end = " ") # ending point Star  
 print("\n")

for  $j$  in range(4, 0, -1):  
 print("x" \* j, end = " ")  
 print(" " \* (2 \* (5 - j)), end = " ")  
 print("x" \* j, end = " ")  
 print("\n")