

Patterns

Logic:

Case 1: Varying Columns per Row

Row	Clo1	Clo2	Clo3	Clo4	Clo5	Formula	Alternative	General Formula
Row1	1					range(1,2)	range(1, 1+1)	range(1, i+1)
Row2	1	2				range(1,3)	range(1, 2+1)	range(1, i+1)
Row3	1	2	3			range(1,4)	range(1, 3+1)	range(1, i+1)
Row4	1	2	3	4		range(1,5)	range(1, 4+1)	range(1, i+1)
Row5	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, i+1)

Case 2: Full Columns per Row

Row	Clo1	Clo2	Clo3	Clo4	Clo5	Formula	Alternative	General Formula
Row1	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
Row2	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
Row3	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
Row4	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)
Row5	1	2	3	4	5	range(1,6)	range(1, 5+1)	range(1, n+1)

```
# Example 1:  
# 1 2 3 4 5  
# 1 2 3 4 5  
# 1 2 3 4 5  
# 1 2 3 4 5  
# 1 2 3 4 5  
n = int(input("Enter how many rows you want"))
```

```
for i in range(1,n+1):
    j=1
    for x in range(1,n+1):
        print(j,end=" ")
        j=j+1
    print()
# Example 2:
# 1
# 1 2
# 1 2 3
# 1 2 3 4
# 1 2 3 4 5
n = int(input("Enter how many rows you want"))
for i in range(1,n+1):
    j=1
    for x in range(1,i+1):
        print(j,end=" ")
        j=j+1
    print()

# Example 3:
# 2
# 2 4
# 2 4 6
# 2 4 6 8
# 2 4 6 8 10
n = int(input("Enter how many rows you want"))
for i in range(1,n+1):
    j=1
    for x in range(1,i+1):
        print(2*j,end=" ")
        j=j+1
    print()

# Example 4:
# 1
# 1 3
# 1 3 5
# 1 3 5 7
# 1 3 5 7 9
n = int(input("Enter how many rows you want"))
for i in range(1,n+1):
    j=1
```

```

for x in range(1,i+1):
    print(2*j-1,end=" ")
    j=j+1
print()

# Example 5:
# 2
# 2 4
# 2 4 6
# 2 4 6 8
# 2 4 6 8 10
n = int(input("Enter how many rows you want"))
for i in range(1,n+1):
    j=1
    for x in range(1,i+1):
        print(2*j,end=" ")
        j=j+1
    print()

# Example 6:
# 1
# 2 3
# 4 5 6
# 7 8 9 10
n = int(input("Enter how many rows you want"))
j=1
for i in range(1,n+1):
    for x in range(1,i+1):
        print(j,end=" ")
        j=j+1
    print()

# Example 7:
# 1
# 3 5
# 7 9 11
# 13 15 17 19
n = int(input("Enter how many rows you want"))
j=1
for i in range(1,n+1):
    for x in range(1,i+1):
        print(2*j-1,end=" ")
        j=j+1

```

```

print()

# Example 8:
# A B C D E
# A B C D E
# A B C D E
# A B C D E

# A B C D E
n = int(input("Enter how many rows you want"))

for i in range(1,n+1):
    j='A'
    for x in range(1,n+1):
        print(j,end=" ")
        j=chr(ord(j)+1)
    print()

# Example 9:
# A
# A B
# A B C
# A B C D
# A B C D E

n = int(input("Enter how many rows you want"))
for i in range(1,n+1):
    j='A'
    for x in range(1,i+1):
        print(j,end=" ")
        j=chr(ord(j)+1)
    print()

# Example 10:
# A
# B C
# D E F
# G H I J
# K L M N O

n = int(input("Enter how many rows you want"))
j='A'
for i in range(1,n+1):
    for x in range(1,i+1):

```

```

print(j,end=" ")
j=chr(ord(j)+1)
print()

# Example 11:
#      A
#      B C
#      D E F
#      G H I J
#      K L M N O

n = int(input("Enter how many rows you want"))
j = 'A' # start from 'A'
for i in range(1, n + 1):
    print(' ' * (n - i), end=' ')
    line = []
    for _ in range(i):
        line.append(chr(ord(j)))
        j = chr(ord(j)+1)
    print(' '.join(line))

# Example 12:
#      A
#      A B
#      A B C
#      A B C D
#      A B C D E

n = int(input("Enter how many rows you want"))
for i in range(1, n + 1):
    j = 'A' # start from 'A'
    print(' ' * (n - i), end=' ')
    line = []
    for _ in range(i):
        line.append(chr(ord(j)))
        j = chr(ord(j)+1)
    print(' '.join(line))

# Example 13:
#      1
#      1 2
#      1 2 3
#      1 2 3 4

```

```
# 1 2 3 4 5

n = int(input("Enter how many rows you want"))
for i in range(1, n + 1):
    j = 1 # start from 1
    print(' ' * (n - i), end=' ')
    line = []
    for _ in range(i):
        line.append(str(j))
        j = j+1
    print(' '.join(line))
```

Example 14:

```
#     1
#     2 3
#   4 5 6
# 7 8 9 10
```

```
j = 1 # start from 1
n = int(input("Enter how many rows you want"))
for i in range(1, n + 1):
    print(' ' * (n - i), end=' ')
    line = []
    for _ in range(i):
        line.append(str(j))
        j = j+1
    print(' '.join(line))
```

Example 15:

```
# *
# **
# ***
# ****
# *****

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print("*"*i)
```

Example 16:

```
# *
# * *
# * * *
# * * * *
# * * * * *
```

```
n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print("* "*i)
```

Example 17:

```
#      *
#      **
#      ***
#      ****
#      *****

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "**(n-i),"*"*i)
```

Example 18:

```
#      *
#      ***
#      *****
#      ******
#      *****

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "**(n-i),"*"*{(2*i)-1})
```

Example 19:

```
#      *
#      * *
#      * * *
#      * * * *
#      * * * * *

n=int(input("Enter the number of rows: "))
for i in range(1,n+1):
    print(" "**(n-i),"*"*i)
```

Example 20:

```
# *****
# ****
# ***
# **
# *

n=int(input("Enter the number of rows: "))
for i in range(n,0,-1):
    print(" "**(n-i),"*"*i)
```

```
# Example 21:  
# *****  
# ****  
# ***  
# **  
# *  
  
n=int(input("Enter the number of rows: "))  
for i in range(n,0,-1):  
    print("*"*i)
```

```
# Example 22:  
# * * * * *  
# * * * *  
# * * *  
# * *  
# *  
  
n=int(input("Enter the number of rows: "))  
for i in range(n,0,-1):  
    print(" "* (n-i), "*"*i)
```

```
# Example 23:  
# *  
# * *  
# * * *  
# * * * *  
# * * * * *  
# * * * *  
# * * *  
# * *  
# *  
  
n=int(input("Enter the number of rows: "))  
for i in range(1,n+1):  
    print(" "* (n-i), "* " * i)  
m=n-1  
for i in range(m,0,-1):  
    print(" "* (m-i), "*"*i)
```

```
# Example 24:  
# *
```

```
# **
# ***
# ****
# *****
# ****
# ***
# **
# *
n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print(" "**(n-i),"*"*i)
for i in range(n,0,-1):
    print("*"*i," "**(n-i))
```

```
# Example 25:
# *
# * *
# * * *
# * * * *
# * * * * *
# * * * *
# * *
# *
# *
n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print("* "*i)
m=n-1
for i in range(m,0,-1):
    print("* "*i)
```

```
# Example 26:
# *
# **
# ***
# ****
# *****
```

```
n=int(input("Enter the number of rows: "))
for i in range(0,n+1):
    print(" "**(n-i),"**"*i)
for i in range(n,0,-1):
    print(" "**(n-i),"**"*i)
```