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)

```python
# 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"))
```

```python
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
```

```python
    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
```

```python
    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):
```

```python
        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
```

```python
# 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)
```

```python
# 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:
#        *
```

```python
#      **
#     ***
#    ****
#   *****
# *****
# ****
# ***
# **
# *
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:
#        *
#       **
#      ***
#     ****
#    *****
#    *****
#     ****
#      ***
#       **
#        *
```

```python
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)
```