Half-Pyramid Pattern Program

```python
def pattern(n):
    for i in range(0,n):
        for j in range(0, i+1):
            print("* " , end="")
        print("\r")

pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms
*
* *
* * *
* * * *
* * * * *


Process finished with exit code 0
```

Simple Numbers Program

```python
def pattern(n):
    x = 0
    for i in range(0 , n):
        x += 1
        for j in range(0, i + 1):
            print(x , end=" ")
        print("\r")
pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

Process finished with exit code 0
```

Half-Pyramid Pattern With Numbers

```python
def pattern(n):
    for i in range(1, n):
        for j in range(1, i + 1):
            print(j, end= " ")
        print("\r")
pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms
1
1 2
1 2 3
1 2 3 4

Process finished with exit code 0
```

Left Half-Pyramid Pattern Program

```python
def pattern(n):
    k = 2 * n - 2
    for i in range(0, n):
        for j in range(0, k):
            print(end=" ")
        k = k - 2
        for j in range(0, i + 1):
            print("* ", end="")
        print("\r")

pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms`
        *
       * *
      * * *
     * * * *
    * * * * *

Process finished with exit code 0
```

Descending Order Pattern Program

```python
def pattern(n):
    for i in range(n, 0, -1):
        for j in range(1, i + 1):
            print(j, end=" ")

        print("\r")

pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms'
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1

Process finished with exit code 0
```

Downward Half-Pyramid Pattern Program

```python
def pattern(n):
    for i in range(n, -1, -1):
        for j in range(0, i + 1):
            print("* ", end="")
        print("\r")

pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternprograms'
* * * * * *
* * * * *
* * * *
* * *
* *
*


Process finished with exit code 0
```

Pyramid Pattern Program

```
1   def pattern(n):
2       k = 2 * n - 2
3       for i in range(0,n):
4           for j in range(0,k):
5               print(end=" ")
6           k = k - 1
7           for j in range(0, i+1):
8               print("*", end=" ")
9           print("\r")
10
11  pattern(5)
```

Output:

```
C:\Users\Waseem\PycharmProjects\patternpr
        *
       * *
      * * *
     * * * *
    * * * * *


Process finished with exit code 0
```

Reverse Pyramid Pattern Program

```python
def pattern(n):
    k = 2*n -2
    for i in range(n,-1,-1):
        for j in range(k,0,-1):
            print(end=" ")
        k = k +1
        for j in range(0, i+1):
            print("*", end=" ")
        print("\r")

pattern(5)
```

Output: