

REGex- Datascience- Assignment-1

Task 1

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--> PATTERN-1

```
In [3]: for i in range(5,0,-1):
        for j in range(0,i):
            print("5", end=" ")
            print("\n ")
```

55555
5555
555
55
5

--> PATTERN-2

```
In [4]: for i in range(6,1,-1):
        for j in range(0,i):
            print(j, end=" ")
            print("\n ")
```

012345
01234
0123
012
01

--> PATTERN-3

```
In [5]: for i in range(1,6):
        for j in range(1,i):
            print(i*2-1, end=" ")
            print("\n ")
```

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

--> PATTERN-4

```
In [6]: rows = int(input("Enter the number of rows"))
        for row in range(1, rows+1):
            for column in range(row, 0, -1):
                print(column, end=" ")
                print("\n ")
```

Enter the number of rows6
1
2 1
3 2 1
4 3 2 1
5 4 3 2 1
6 5 4 3 2 1

--> PATTERN-5

```
In [ ]: n=int(input("Enter the number of rows :"))
        k=0
        for i in range(1,n+1):
            k=k+i
            for j in range(k,k-i,-1):
                print(j, end=" ")
                print("\n ")
```

--> PATTERN-6

```
In [46]: def pascal_triangle(n):
        trow = [1]
        y = [0]
        for x in range(max(n,0)):
            print(trow)
            trow=[1+r for l,r in zip(trow+y, y+trow)]
        return n>=1
        pascal_triangle(6)
```

[1]
[1, 1]
[1, 2, 1]
[1, 3, 3, 1]
[1, 4, 6, 4, 1]
[1, 5, 10, 10, 5, 1]

Out[46]: True

--> PATTERN-7

```
In [8]: for i in range(1,6):
        for j in range(1,6):
            if j<=i:
                print(i, end=" ")
            else:
                print(j,end=" ")
            print("\n ")
```

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

--> PATTERN-8

```
In [9]: for i in range(1,9):
        for j in range(1,i+1):
            print(j*i, end=" ")
            print("\n ")
```

1
2 4
3 9 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

--> PATTERN-9

```
In [22]: rows = int(input("Enter the number of rows: "))
        k = 2 * rows - 2
        for i in range(rows, -1, -1):
            for j in range(k, 0, -1):
                print(end=" ")
                k = k + 1
            for j in range(0, i + 1):
                print("*", end=" ")
                print("\n ")
```

Enter the number of rows: 5
* * * * *
* * * * *
* * * * *
* * *
* *
*

--> PATTERN-10

```
In [11]: n = 0
        r = 7
        for m in range(1, r+1):
            for gap in range(1, (r-m)+1):
                print(end=" ")
            while n != (2*m-1):
                print("* ", end="")
                n = n + 1
            n = 0
            print()
```

*
* *
* * *
* * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *

--> PATTERN-11

```
In [12]: for i in range(1,6):
        for j in range(1,i+1):
            print("*", end=" ")
            print("\n ")
        for k in range(1,6):
            for l in range(6,k,-1):
                print("*", end=" ")
                print("\n ")
```

*
*
* *
* * *
* * * *

* * * *
* * * *
* * *
* *
*

--> PATTERN-12

```
In [77]: def pattern(n):
        for i in range(0, n):
            for j in range(0, i + 1):
                print(" * ", end="")
                print("\r")
            for i in range(n, 0, -1):
                for j in range(0, i + 1):
                    print(" * ", end="")
                    print("\r")
        pattern(4)
```

*
* *
* * *
* * * *
* * * * *
* * * * *
* * * *
* * *
* *
*

--> PATTERN-13

```
In [75]: def pattern(n):
        k = 2 * n - 2
        for i in range(0, n-1):
            for j in range(0, k):
                print(end=" ")
                k = k - 2
            for j in range(0, i + 1):
                print(" * ", end="")
                print("\r")
            k = -1
            for i in range(n-1,-1,-1):
                for j in range(k,-1,-1):
                    print(end=" ")
                    k = k + 2
                for j in range(0, i + 1):
                    print(" * ", end="")
                    print("\r")
        pattern(5)
```

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

--> PATTERN-14

```
In [14]: row = int(input("Enter number of rows: "))

print("Generated Hourglass Pattern is: ")
# Upper-half
for i in range(row, 0, -1):
    for j in range(row-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()

# Lower-half
for i in range(2, row+1):
    for j in range(row-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
```

Enter number of rows: 5
Generated Hourglass Pattern is:

--> PATTERN-15

```
In [1]: for i,j in zip(range(0,0,-1), range(0,8)):
        print("****i+_"*(2*j) + "****i")
```

*****_*****
*****_*****
****_****
_
_
_

```
In [ ]:
```