

Pattern 5

```
In [1]: n=int(input("enter numbers of rows :"))
for i in range(n):
    for j in range(n,i,-1):
        print("*",end=" ")
    for k in range(0,i*2):
        print(" ",end=" ")
    for q in range(n,i,-1):
        print("*",end=" ")
    print(" ")
for i in range(n-1,-1,-1):
    for j in range(n,i,-1):
        print("*",end=" ")
    for k in range(0,i*2):
        print(" ",end=" ")
    for q in range(n,i,-1):
        print("*",end=" ")
    print(" ")
```

enter numbers of rows :5

```
* * * * *
* * * *   * * * *
* * *     * * *
* *       * *
*         *
*         *
* *       * *
* * *     * * *
* * * *   * * * *
* * * * * * * * *
```

extra

```
In [21]: for i in range(1,6):
    for j in range(1,5-i+1):
        print(" ",end=" ")
    for k in range(1,2*i):
        print("*",end=" ")
    print(" ")
```

```
      *
    * * *
  * * * * *
* * * * * *
* * * * * * * *
```

Pattern 4: Hollow Diamond

```
In [33]: for i in range(1,6):
          for j in range(1,5-i+1):
              print(" ",end=" ")
          for k in range(1,2*i):
              if k==1 or k==(2*i-1):
                  print("*",end=" ")
              else:
                  print(" ",end=" ")
          print(" ")
      for i in range(1,6):
          for j in range(1,i+1):
              print(" ",end=" ")
          for k in range(1,2*(5-i)):
              if k==1 or k==(2*(5-i)-1):
                  print("*",end=" ")
              else:
                  print(" ",end=" ")
          print(" ")
```

```

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

```

Pattern 1: floyd's triangle

```
In [36]: num = 1
          stop = 2
          for i in range(7):
              for j in range(1,stop):
                  print(num,end=" ")
                  num = num+1
              print(" ")
              stop=stop+1
```

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28

```

pattern 3

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

for i in range(2,0,-1):
    print("*",end=" ")
    for j in range(1,i+1):
        print(j,end=" ")
    for j in range(i-1,0,-1):
        print(j,end=" ")
    print("*")
    print(" ")
print("*")
```

```
*
* 1 *

* 1 2 1 *

* 1 2 3 2 1 *

* 1 2 1 *

* 1 *

*
```

Pattern 2: Pascal's Triangle

```
In [6]: n = int(input("Enter no. of rows: "))
list1 = []

for i in range(n):
    list1.append([])
    list1[i].append(1)
    for j in range(1,i):
        list1[i].append(list1[i-1][j-1] + list1[i-1][j])
    if i > 0:
        for k in range(i-(i-1)):
            list1[i].append(1)
print(list1)
for i in range(len(list1)):
    for j in list1[i]:
        print(j,end = " ")
    print()
```

```
Enter no. of rows: 3
[[1], [1, 1], [1, 2, 1]]
1
1 1
1 2 1
```