

## Q.1) Write a Python Program to print below Patterns using For and While Loop:

```
1 *
2 * *
3 * * *
4 * * * *
5 * * * * *
```

In [2]:

```
1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print("* " * i ,end = " ")
5     print()
6
```

Enter the no of rows: 5

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

In [3]:

```
1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     print("* " * i ,end = " ")
6     print()
7     i+=1
8
9
```

Enter the no of rows: 5

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

## Q.2) Write a Python Program to print below Patterns using For and While Loop:

```
1          *
2        * *
3      * * *
4    * * * *
5  * * * * *
```

In [6]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print(" " * (n-i),end = " ")
5     print("* " * i ,end = " ")
6     print()

```

Enter the no of rows: 5

```

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

```

In [7]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     print(" " * (n-i),end = " ")
6     print("* " * i ,end = " ")
7     print()
8     i+=1

```

Enter the no of rows: 5

```

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

```

**Q.3) Write a Python Program to print below Patterns using For and While Loop:**

```

1      *
2     * *
3    * * *
4   * * * *
5  * * * * *

```

In [8]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print(" " * (n-i),end = " ")
5     print("* " * i ,end = " ")
6     print()

```

Enter the no of rows: 5

```

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

```

In [9]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     print(" " * (n-i),end = " ")
6     print("* " * i ,end = " ")
7     print()
8     i+=1
9

```

Enter the no of rows: 5

```

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

```

**Q.4)Write a Python Program to print below Patterns using For and While Loop:**

```

1 1
2 1 2
3 1 2 3
4 1 2 3 4
5 1 2 3 4 5

```

In [17]:

```
1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     for j in range(1,i+1):
5         print(j ,end = " ")
6     print()
```

Enter the no of rows: 5

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

In [39]:

```
1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     j = 1
6     while(j<=i):
7         print(j ,end = " ")
8         j+=1
9     print()
10    i +=1
```

Enter the no of rows: 5

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

**Q.5)Write a Python Program to print below Patterns using For and While Loop:**

```
1 1
2 2 3
3 4 5 6
4 7 8 9 10
5 11 12 13 14 15
```

In [57]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num = 1
4 for i in range(1,n+1):
5     for j in range(i):
6         print(num ,end = " ")
7         num +=1
8     print()

```

Enter the no of rows: 5

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

```

In [43]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 num = 1
5 while (i<=n):
6     j = 1
7     while(j<=i):
8         print(num ,end = " ")
9         j+=1
10    num +=1
11    print()
12    i +=1

```

Enter the no of rows: 5

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

```

**Q.6)Write a Python Program to print below Patterns using For and While Loop:**

```

1 A
2 B B
3 C C C
4 D D D D
5 E E E E E

```

In [49]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num = 65
4 for i in range(1,n+1):
5     print((chr(num) + " ") * i, end = " ")
6     num +=1
7     print()

```

Enter the no of rows: 5

```

A
B B
C C C
D D D D
E E E E E

```

In [51]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 num = 65
4 i = 1
5 while (i<=n):
6     print((chr(num) + " ") * i, end = " ")
7     num +=1
8     print()
9     i += 1
10

```

Enter the no of rows: 5

```

A
B B
C C C
D D D D
E E E E E

```

**Q.7)Write a Python Program to print below Patterns using For and While Loop:**

```

1 A
2 B C
3 D E F
4 G H I J
5 K L M N O

```

In [56]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num = 65
4 for i in range(1,n+1):
5     for j in range(i):
6         print((chr(num) + " "), end = " ")
7         num +=1
8     print()

```

Enter the no of rows: 5

```

A
B C
D E F
G H I J
K L M N O

```

In [58]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 num = 65
4 i = 1
5 while (i<=n):
6     j = 1
7     while(j<=i):
8         print((chr(num) + " "),end = " ")
9         j+=1
10        num +=1
11    print()
12    i +=1

```

Enter the no of rows: 5

```

A
B C
D E F
G H I J
K L M N O

```

**Q.8)Write a Python Program to print below Patterns using For and While Loop:**

```

1 K
2 K K
3 K K K
4 K K K K
5 K K K K K

```

In [1]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     for j in range(i):
5         print(("K" + " "), end = " ")
6     print()

```

Enter the no of rows: 5

```

K
K K
K K K
K K K K
K K K K K

```

In [2]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     j = 1
6     while(j<=i):
7         print(("K" + " "),end = " ")
8         j+=1
9     print()
10    i +=1

```

Enter the no of rows: 5

```

K
K K
K K K
K K K K
K K K K K

```

**Q.9)Write a Python Program to print below Patterns using For and While Loop:**

```

1 A
2 A B
3 A B C
4 A B C D
5 A B C D E

```



In [65]:

```

1 # Using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     num = 65
5     for j in range(i):
6         print((chr(num) + " "), end = " ")
7         num +=1
8     print()

```

Enter the no of rows: 5

```

A
A B
A B C
A B C D
A B C D E

```

In [67]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     num =65
6     j = 1
7     while(j<=i):
8         print((chr(num) + " "), end = " ")
9         num +=1
10        j+=1
11    print()
12    i+=1
13

```

Enter the no of rows: 5

```

A
A B
A B C
A B C D
A B C D E

```

**Q.10)Write a Python Program to print below Patterns using For and While Loop:**

```

1 P
2 Py
3 Pyt
4 Pyth
5 Pytho
6 Python

```

In [76]:

```
1 # using for loop
2 str1 = "Python"
3 str2 = ""
4 for i in str1:
5     str2 = str2 + i
6     print(str2)
```

P  
Py  
Pyt  
Pyth  
Pytho  
Python

In [74]:

```
1 # using while loop
2 str1 = "Python"
3 str2 = ""
4 i = 0
5 while i < len(str1):
6     str2 = str2 + str1[i]
7     print(str2)
8     i+=1
9
10
```

P  
Py  
Pyt  
Pyth  
Pytho  
Python

**Q.11)Write a Python Program to print below Patterns using For and While Loop:**

```
1 1 1 1 1 1
2 2 2 2 2
3 3 3 3
4 4 4
5 5
```

In [12]:

```
1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num = 1
4 for i in range(n,0,-1):
5     print((str(num) + " ") * i,end = " ")
6     print()
7     num += 1
8
```

Enter the no of rows: 5

```
1 1 1 1 1
2 2 2 2
3 3 3
4 4
5
```

In [15]:

```
1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 num = 1
4 i = n
5 while (i>=1):
6     print((str(num) + " ") * i,end = " ")
7     print()
8     num += 1
9     i -= 1
10
```

Enter the no of rows: 5

```
1 1 1 1 1
2 2 2 2
3 3 3
4 4
5
```

**Q.12)Write a Python Program to print below Patterns using For and While Loop:**

```
1 6 6 6 6 6 6
2 5 5 5 5 5
3 4 4 4 4
4 3 3 3
5 2 2
6 1
```

In [16]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num = n
4 for i in range(n,0,-1):
5     print((str(num) + " ") * i,end = " ")
6     print()
7     num -= 1

```

Enter the no of rows: 6

```

6 6 6 6 6 6
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1

```

In [18]:

```

1 ## using while loop
2 n = int(input("Enter the no of rows: "))
3 num = n
4 i = n
5 while (i>=1):
6     print((str(num) + " ") * i,end = " ")
7     print()
8     num -= 1
9     i -= 1

```

Enter the no of rows: 6

```

6 6 6 6 6 6
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1

```

**Q.13)Write a Python Program to print below Patterns using For and While Loop:**

```

1 0 1 2 3 4 5
2 0 1 2 3 4
3 0 1 2 3
4 0 1 2
5 0 1

```

In [29]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3
4 for i in range(n,0,-1):
5     for j in range(i+1):
6         print((str(j) + " ") ,end = " ")
7     print()
8

```

Enter the no of rows: 5

```

0 1 2 3 4 5
0 1 2 3 4
0 1 2 3
0 1 2
0 1
0 1

```

In [35]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = n
4 while (i>=1):
5     j = 0
6     while (j<=i):
7         print((str(j) + " ") ,end = " ")
8         j += 1
9     print()
10    i -= 1
11

```

Enter the no of rows: 5

```

0 1 2 3 4 5
0 1 2 3 4
0 1 2 3
0 1 2
0 1
0 1

```

**Q.14)Write a Python Program to print below Patterns using For and While Loop:**

```

1 1
2 2 3 4
3 5 6 7 8 9

```

In [48]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num =1
4 for i in range(0,n*2,2):
5     for j in range(i+1):
6         print(str(num) + " ",end = " ")
7         num +=1
8     print()
9

```

Enter the no of rows: 3

```

1
2 3 4
5 6 7 8 9

```

In [49]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 num =1
4 i = 1
5 while (i<=(n*2)):
6     j = 1
7     while (j<=i):
8         print(str(num) + " ",end = " ")
9         num +=1
10        j +=1
11    print()
12    i +=2
13
14

```

Enter the no of rows: 3

```

1
2 3 4
5 6 7 8 9

```

**Q.15)Write a Python Program to print below Patterns using For and While Loop:**

```

1 6 5 4 3 2 1
2 5 4 3 2 1
3 4 3 2 1
4 3 2 1
5 2 1
6 1

```

In [55]:

```
1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(n,0,-1):
4     for j in range(i,0,-1):
5         print(j,end = " ")
6     print()
7
```

Enter the no of rows: 6

```
6 5 4 3 2 1
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1
```

In [56]:

```
1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = n
4 while (i>=1):
5     j=i
6     while (j>=1):
7         print(j,end = " ")
8         j-=1
9     print()
10    i-=1
```

Enter the no of rows: 6

```
6 5 4 3 2 1
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1
```

**Q.16)Write a Python Program to print below Patterns using For and While Loop:**

```
1 1
2 3 3
3 5 5 5
4 7 7 7 7
5 9 9 9 9 9
```

In [57]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 num=1
4 for i in range(1,n+1):
5     for j in range(i):
6         print(str(num) + " ",end = " ")
7         num +=2
8     print()

```

Enter the no of rows: 5

```

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

```

In [58]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 num = 1
5 while (i<=n):
6     j = 1
7     while (j<=i):
8         print(str(num) + " ",end = " ")
9         j +=1
10    print()
11    num +=2
12    i+=1

```

Enter the no of rows: 5

```

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

```

**Q.17)Write a Python Program to print below Patterns using For and While Loop:**

```

1      1
2     1 2
3    1 2 3
4   1 2 3 4
5  1 2 3 4 5

```



In [88]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print(" " * (n-i) ,end = " ")
5     for j in range(1,i+1):
6         print(j ,end = " ")
7     print()

```

Enter the no of rows: 5

```

      1
     1 2
    1 2 3
   1 2 3 4
  1 2 3 4 5

```

In [90]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i <=n):
5     print(" " * (n-i) ,end = " ")
6     j = 1
7     while (j <= i):
8         print(j ,end = " ")
9         j+=1
10    print()
11    i +=1
12
13

```

Enter the no of rows: 5

```

      1
     1 2
    1 2 3
   1 2 3 4
  1 2 3 4 5

```

**Q.18)Write a Python Program to print below Patterns using For and While Loop:**

```

1 1 2 3 4 5
2 2 2 3 4 5
3 3 3 3 4 5
4 4 4 4 4 5
5 5 5 5 5 5

```

In [94]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print(i,end= " ")
5     for j in range(2,n+1):
6         if j <= i:
7             print(i,end = " ")
8         else:
9             print(j,end = " ")
10    print()

```

Enter the no of rows: 5

```

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

```

In [95]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     print(i,end= " ")
6     j = 2
7     while (j<=n):
8         if j <= i:
9             print(i,end = " ")
10        else:
11            print(j,end = " ")
12        j+=1
13    print()
14    i +=1
15
16

```

Enter the no of rows: 5

```

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

```

**Q.19)Write a Python Program to print below Patterns using For and While Loop:**

```

1 1
2 2 4
3 3 6 9
4 4 8 12 16
5 5 10 15 20 25
6 6 12 18 24 30 36
7 7 14 21 28 35 42 49
8

```

In [133]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print(i,end= " ")
5     for j in range(2,i+1):
6         print((str(i*j) + " ") ,end = " ")
7     print()
8

```

Enter the no of rows: 7

```

1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
6 12 18 24 30 36
7 14 21 28 35 42 49

```

In [134]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     print(i,end = " ")
6     j = 2
7     while (j<=i):
8         print(str(i*j) + " ",end = " ")
9         j +=1
10    print()
11    i +=1

```

Enter the no of rows: 7

```

1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
6 12 18 24 30 36
7 14 21 28 35 42 49

```

**Q.20)Write a Python Program to print below Patterns using For and While Loop:**

```

1      1
2     2 1
3    4 2 1
4   8 4 2 1
5  16 8 4 2 1
6 32 16 8 4 2 1
7 64 32 16 8 4 2 1
8 128 64 32 16 8 4 2 1

```

In [170]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     x = 2**(i-1)
5     for j in range(i):
6         print(x,end=" ")
7         x //=2
8     print()

```

Enter the no of rows: 8

```

1
2 1
4 2 1
8 4 2 1
16 8 4 2 1
32 16 8 4 2 1
64 32 16 8 4 2 1
128 64 32 16 8 4 2 1

```

In [179]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = 1
4 while (i<=n):
5     j = 1
6     x = 2**(i-1)
7     while (j <= i):
8         print(x,end=" ")
9         j+=1
10        x //= 2
11    print()
12    i+=1

```

Enter the no of rows: 8

```

1
2 1
4 2 1
8 4 2 1
16 8 4 2 1
32 16 8 4 2 1
64 32 16 8 4 2 1
128 64 32 16 8 4 2 1

```

**Q.21)Write a Python Program to print below Patterns using For and While Loop:**

```

1 * * * * * * * * * * * * * *
2 * * * * * *      * * * * * *
3 * * * * *      * * * * *
4 * * * *      * * * *
5 * * *      * * *
6 * *      * *
7 *      *

```

In [213]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(n,0,-1):
4     print("* " * i,end = "")
5     print(" " * ((n-i)*2),end = "")
6     print("* " * i,end = "")
7     print()

```

Enter the no of rows: 7

```

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

```

In [216]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i = n
4 while (i >=1):
5     print("* " * i,end = "")
6     print(" " * ((n-i)*2),end = "")
7     print("* " * i,end = "")
8     print()
9     i-=1
10

```

Enter the no of rows: 7

```

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

```

**Q.22)Write a Python Program to print below Patterns using For and While Loop:**

```

1 *
2 * *
3 * * *
4 * * * *
5 * * * * *
6 * * * * * *
7 * * * * * * *
8 * * * * * * *
9 * * * * * *
10 * * * * *
11 * * * *
12 * * *
13 * *

```

14 \*

In [219]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print("* " * i,end = " ")
5     print()
6 for i in range(n,0,-1):
7     print("* " * i,end = " ")
8     print()

```

Enter the no of rows: 7

```

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

```

In [222]:

```

1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i =1
4 while (i<=n):
5     print("* " * i,end = " ")
6     print()
7     i+=1
8 j = n
9 while (j>=1):
10    print("* " * j,end = " ")
11    print()
12    j-=1

```

Enter the no of rows: 7

```

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

```

## Q.23)Write a Python Program to print below Patterns using For and While Loop:

```

1 *
2 * *
3 * * *
4 * * * *
5 * * * * *
6 * * * * * *
7
8 * * * * * *
9 * * * * *
10 * * * *
11 * * *
12 * *
13 *
```

In [223]:

```

1 # using for loop
2 n = int(input("Enter the no of rows: "))
3 for i in range(1,n+1):
4     print("* " * i,end = " ")
5     print()
6 print()
7 for i in range(n,0,-1):
8     print("* " * i,end = " ")
9     print()
```

Enter the no of rows: 6

```

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

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

In [224]:

```
1 # using while loop
2 n = int(input("Enter the no of rows: "))
3 i =1
4 while (i<=n):
5     print("* " * i,end = " ")
6     print()
7     i+=1
8 print()
9 j = n
10 while (j>=1):
11     print("* " * j,end = " ")
12     print()
13     j-=1
```

Enter the no of rows: 6

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

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

In [ ]:

1