

1. Program to print different patterns.

Pattern 1: Right angle triangle

```
In [26]: rows = int(input("Enter the number of rows: "))
for i in range(1, rows + 1):
    for j in range(i):
        print("*", end="")
    print()
```

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

Pattern 2: Z-shape

```
In [32]: def z_pattern(n):
    for i in range(n):
        for j in range(n):
            # Print '+' at the top, bottom, and diagonally
            if i == 0 or i == n - 1 or i + j == n - 1:
                print("+", end="")
            else:
                print(" ", end="")
        print()

n = int(input("Enter the size of Z pattern: "))
z_pattern(n)
```

```
+++++++
      +
     +
    +
   +
  +
 +
+++++++
```

```
In [30]: def z_pattern(n):
    for i in range(n):
        for j in range(n):

            if i == 0 or i == n - 1 or i + j == n - 1:
                print("+", end="")
            else:
                print(" ", end="")
        print()
```

```
n = int(input("Enter the size of Z pattern: "))  
z_pattern(n)
```

```
++++++  
  +  
  +  
  +  
  +  
++++++
```

2.Program to find factorial of number.

```
In [17]: def fact(n):  
          if n==0:  
              return 1  
          return n * fact(n-1)  
          n = int(input("Enter value of n: "))  
          print(fact(n))
```

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In []: