Python nested loops
Python programming language allows to use one loop inside another loop.

Syntax

```
for [first iterating variable] in [outer loop]: # Outer loop
    [do something]  # Optional
    for [second iterating variable] in [nested loop]:   # Nested loop
        [do something]
```

In nested loops find the following facts:
1. X-axis always contains Y-axis
2. Y-axis contains actual data
3. A row contains n number of columns
4. A column contains n number characters
5. Outer loop represents X-axis (Rows)
6. Inner loop represents Y-axis (Columns)
7. Mathematically we are representing width, height (x,y)

Example:

```
for a in range(1,3):
       for b in range(1,3):
           print(a,b)
```

Example:

```
for x in range(1, 4):
    for y in range(1, 4):
        print('%d * %d = %d' % (x, y, x*y))
```

Example:

```
pattern=int(input("Enter Number of Rows: "))
for i in range(1, pattern+1):
    for j in range(1,i+1):
        print("*",end=" ")
    print()
```

Example: Reverse Pattern

```
pattern=int(input("Enter Number of rows: "))
for i in range(pattern,0,-1):
    for j in range(0,i):
        print("*",end="")
    print()
```

Example:Reverse Pattern

```
pattern=int(input("Enter Number of rows: "))
for i in range(1,pattern+1):
    for j in range(1,pattern+2-i):
        print("*",end="")
    print()
```

Example:(Printing Stars in Pyramid Shape)

```
pattern=int(input("Enter Number of rows: "))
for i in range(0,pattern):
    for j in range(0,pattern-i-1):
        print(end=" ")
```

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

Example:(Printing Stars in Reverse Pyramid Shape)

```
pattern=int(input("Enter Number of rows: "))
for i in range(pattern,0,-1):
    for j in range(0,pattern-i):
        print(end=" ")
    for j in range(0,i):
        print("*",end=" ")
    print()
```