np.meshgrid

$$X, Y = np.meshgrid(x, y)$$

$$X = \begin{pmatrix} 1 & 2 \\ 1 & 2 \end{pmatrix}$$

$$Y = \begin{pmatrix} 4 & 4 \\ 3 & 3 \end{pmatrix}$$

Y

4 —   1,4   2,4

3 —   1,3   2,3

             1   2   x

Generate all these points with nested loops

for x in [1, 2]:
    for y in [3, 4]:
        Do something with (x, y) e.g. z = x + 1j*y

Generate all points with meshgrid

x = np.array([1, 2])
y = np.array([3, 4])
X, Y = np.meshgrid(x, y)
Z = X + 1j * Y