**Mean-Variance-Standard Deviation Calculator**

Create a function named calculate() in mean\_var\_std.py that uses Numpy to output the mean, variance, standard deviation, max, min, and sum of the rows, columns, and elements in a 3 x 3 matrix.

The input of the function should be a list containing 9 digits. The function should convert the list into a 3 x 3 Numpy array, and then return a dictionary containing the mean, variance, standard deviation, max, min, and sum along both axes and for the flattened matrix.

The returned dictionary should follow this format:

{

'mean': [axis1, axis2, flattened],

'variance': [axis1, axis2, flattened],

'standard deviation': [axis1, axis2, flattened],

'max': [axis1, axis2, flattened],

'min': [axis1, axis2, flattened],

'sum': [axis1, axis2, flattened]

}

If a list containing less than 9 elements is passed into the function, it should raise a ValueError exception with the message: "List must contain nine numbers." The values in the returned dictionary should be lists and not Numpy arrays.

For example, calculate([0,1,2,3,4,5,6,7,8]) should return:

{

'mean': [[3.0, 4.0, 5.0], [1.0, 4.0, 7.0], 4.0],

'variance': [[6.0, 6.0, 6.0], [0.6666666666666666, 0.6666666666666666, 0.6666666666666666], 6.666666666666667],

'standard deviation': [[2.449489742783178, 2.449489742783178, 2.449489742783178], [0.816496580927726, 0.816496580927726, 0.816496580927726], 2.581988897471611],

'max': [[6, 7, 8], [2, 5, 8], 8],

'min': [[0, 1, 2], [0, 3, 6], 0],

'sum': [[9, 12, 15], [3, 12, 21], 36]

}

The unit tests for this project are in test\_module.py.

[FreeCodeCamp](https://www.freecodecamp.org/learn/data-analysis-with-python/data-analysis-with-python-projects/mean-variance-standard-deviation-calculator)