



< Previous	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Next >
------------	---	---	---	---	---	---	---	---	---	---	--------

Exercise 3

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Exercise 3

5.0/5.0 points (graded)

Write a function, `stdDevOfLengths(L)` that takes in a list of strings, `L`, and outputs the standard deviation of the lengths of the strings. Return `float('NaN')` if `L` is empty.

Recall that the standard deviation is computed by this equation:

$$\sqrt{\frac{\sum_{t \in X} (t - \mu)^2}{N}}$$

where:

- μ is the mean of the elements in X .
- $\sum_{t \in X} (t - \mu)^2$ means the sum of the quantity $(t - \mu)^2$ for t in X .

That is, for each element (that we name t) in the set X , we compute the quantity $(t - \mu)^2$. We then sum up all those computed quantities.

- N is the number of elements in X .

1. Test case: If `L = ['a', 'z', 'p']`, `stdDevOfLengths(L)` should return 0.

2. Test case: If `L = ['apples', 'oranges', 'kiwis', 'pineapples']`, `stdDevOfLengths(L)` should return 1.8708.

Note: If you want to use functions from the math library, be sure to `import math`. If you want to use numpy arrays, you should add the following lines at the beginning of your code for the grader:

```
import os
```

```
os.environ["OPENBLAS_NUM_THREADS"] = "1"
```

Then, do `import numpy as np` and use `np.METHOD_NAME` in your code.

```
1 import math
2 def stdDevOfLengths(L):
3     """
4     L: a list of strings
5
6     returns: float, the standard deviation of the lengths of the strings,
7     or NaN if L is empty.
8     """
9     if L == []:
10         return float("NaN")
11     lenlist = []
12     for ele in L:
13         lenlist.append(len(ele))
14
15     lenmean = sum(lenlist)/len(lenlist)
```

Press ESC then TAB or click outside of the code editor to exit

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< Previous

Next >

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