

# Problem: Random samples for a finite population of bitstrings

Given a number of bits, write the `get_sample` function to return a list `n` of random samples from a finite probability mass function defined by a dictionary with keys defined by a specified number of bits. For example, given 3 bits, we have the following dictionary that defines the probability of each of the keys. The values of the dictionary correspond of the probability of drawing any one of these. For example, if all of these were equally likely, then here is the corresponding dictionary `p`,

```
p={'000': 0.125,  
'001': 0.125,  
'010': 0.125,  
'011': 0.125,  
'100': 0.125,  
'101': 0.125,  
'110': 0.125,  
'111': 0.125}
```

Your `get_sample` function should return something like the following,

```
>>> get_sample(nbits=3,prob=p,n=4)  
['101', '000', '001', '100']
```

**Hint:** Validate your inputs thoroughly.

Function signature: `get_sample(nbits=3,prob=None,n=1)`. Keep the default values as given in the function signature.

Please put your Python code in a Python script file and upload it. Please retain your submitted source files! Remember to use all the best practices we discussed in class. You can use any module in the Python standard library, but third-party modules (e.g., Numpy, Pandas) are restricted to those **explicitly** mentioned in the problem description.

## Tips:

- After you have submitted your file, do **not** use the browser back or reload buttons to navigate or open the page in multiple browser tabs, as this may cause your `attempts` to decrease unexpectedly. It may take up to thirty seconds for your code to be processed, so please be **patient**.
- If you find yourself back at the main page without any feedback or change in your `attempts` then it means that your code timed out or crashed in some unexpected way.
- Ensure that your development environment does not presume the existence of certain packages for the autograder. The autograder does not have anything other than the standard library and those third-party libraries **explicitly** named in the problem description.
- Do not leave extraneous statements in your code like test cases, print statements, or anything else besides what is needed to evaluate your submission because the the autograder will spend its limited time executing those lines, which may result in unexpected crashes or timeouts.

浏览... 0401.py

Upload Python source code file

Correct! Back to assignments. functional points = 14 /14 and validation points = 6/6