

Multinomial Distribution

Previous

Next >

Multinomial Distribution

Multinomial distribution is a generalization of binomial distribution.

It describes outcomes of multi-nomial scenarios unlike binomial where scenarios must be only one of two. e.g. Blood type of a population, dice roll outcome.

It has three parameters:

```
n - number of times to run the experiment.
```

pvals - list of probabilties of outcomes (e.g. [1/6, 1/6, 1/6, 1/6, 1/6] for dice roll).

size - The shape of the returned array.

Example

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Draw out a sample for dice roll:

```
from numpy import random
x = random.multinomial(n=6, pvals=[1/6, 1/6, 1/6, 1/6, 1/6])
print(x)
```



Note: Multinomial samples will NOT produce a single value! They will produce one value for each pval .

Note: As they are generalization of binomial distribution their visual representation and similarity of normal distribution is same as that of multiple binomial distributions.

Exercise?

The random.multinomial() method has three parameters, which ones?

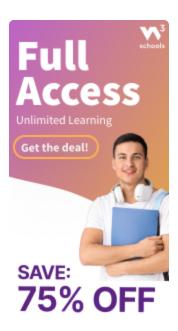
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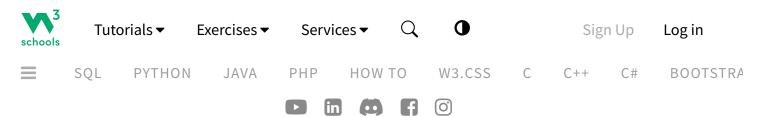
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