Assignment 1

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Stats 123

Makefiles

Originally designed for compiling large software projects, Makefiles can automate the dependencies between data analysis steps, enabling **reproducible research**.[1]

Statistics- So hot right now.

1. This is a nested list.
2. We are shooting for highly nested stuff here.

Mathematics- Always classic.

R graphics

Display equations:

$$f(x) = x^2 + 5x + \pi$$

Inline equation $\sum x$, and so on.

You can generate simulated data with R or Python.

1 R for Graphics

Here is some R code.

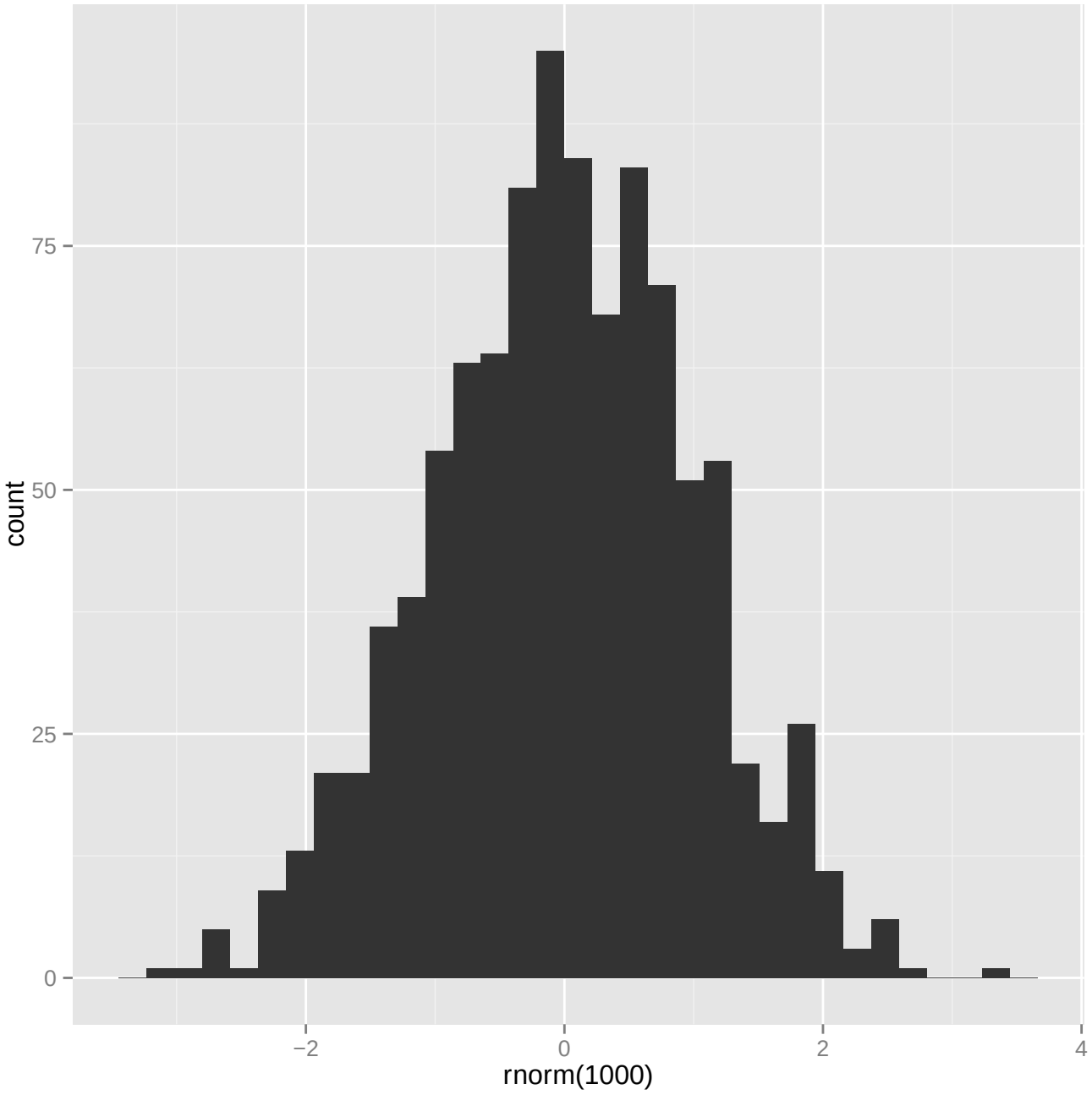
normal.R

```
library(ggplot2)

pdf('normal_R.pdf')
qplot(rnorm(1000))
dev.off()
```

[1]For more on reproducible research, check out the chapter on Open Source Scientific Practice by K. Jarrod Millman and Fernando Perez available at `https://osf.io/h9gsd/`.

Which generates the corresponding plot:



2 Python for Graphics

Here is some Python code.

normal.py

```
, , ,
```

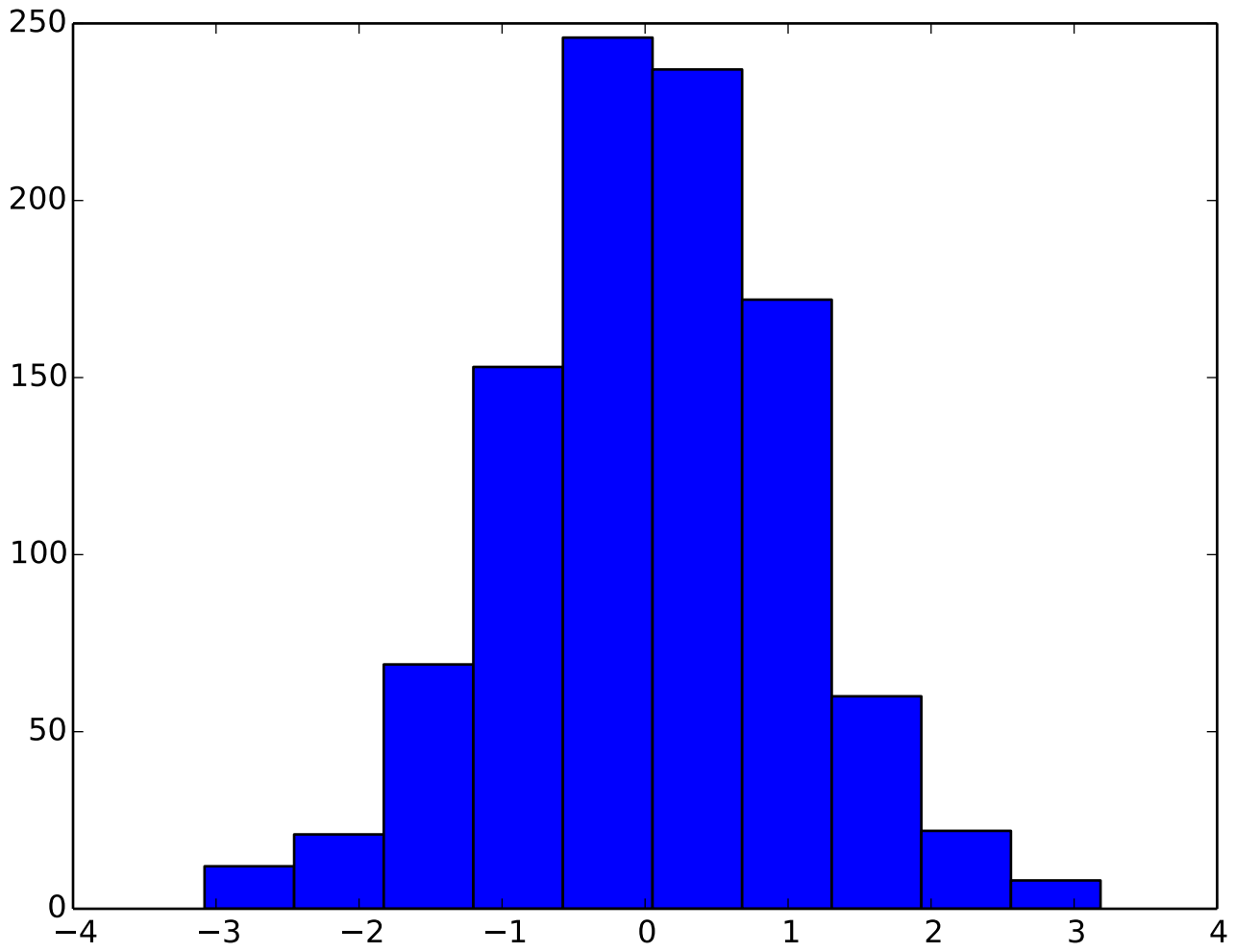
```
Creates a histogram of the normal distribution
'''

from matplotlib import pyplot as plt
from scipy.stats import norm

norm_pts = norm().rvs(1000)

plt.hist(norm_pts)
# Title looks ugly in tex paper.
#plt.title('standard normal')
plt.savefig('normal_py.pdf')
```

Which generates the corresponding plot:



As you can see, the usage is similar.