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1 Math

Here are some brilliant maths:

$$A \sum_{i=0}^{\infty} y_i x_i^2$$

Please also see Figure 1. Another cool plot can be seen in Figure 2. See also, Figure 3. Consider even more maths:

$$\mathcal{B}_\epsilon(\mathbf{u}) = \{\mathbf{x} \in \mathbb{R} || \mathbf{x} - \mathbf{u} || < \epsilon \}$$

I would also like to express the solution to the least squares problem:

$$\hat{\beta} = (\mathbf{X}'\mathbf{X})^{-1}\mathbf{X}'\mathbf{Y}$$

Hopefully, this works. Here is a change. Hooray! Now everytime I save my .Rnw file, knitr and latexmk are called by watchman from my Makefile.

2 Code

```
sample(LETTERS[1:5], 10, replace = TRUE)

## [1] "B" "A" "B" "E" "A" "B" "A" "E" "C" "B"

hello_world <- function() {
  print('Hello World!')
}
hello_world()

## [1] "Hello World!"

head(rw.df)

##      path period phase
## 1 0.27538280      1    A
## 2 -1.42617511      2    A
## 3 -0.91183677      3    A
## 4 0.32759316      4    A
## 5 0.97533127      5    A
## 6 -0.08553271      6    A
```

3 Figures

```
ggplot(data = data, aes(x = V1, fill = V4)) +  
  geom_histogram(colour = 'white') +  
  facet_wrap(~ V4)
```

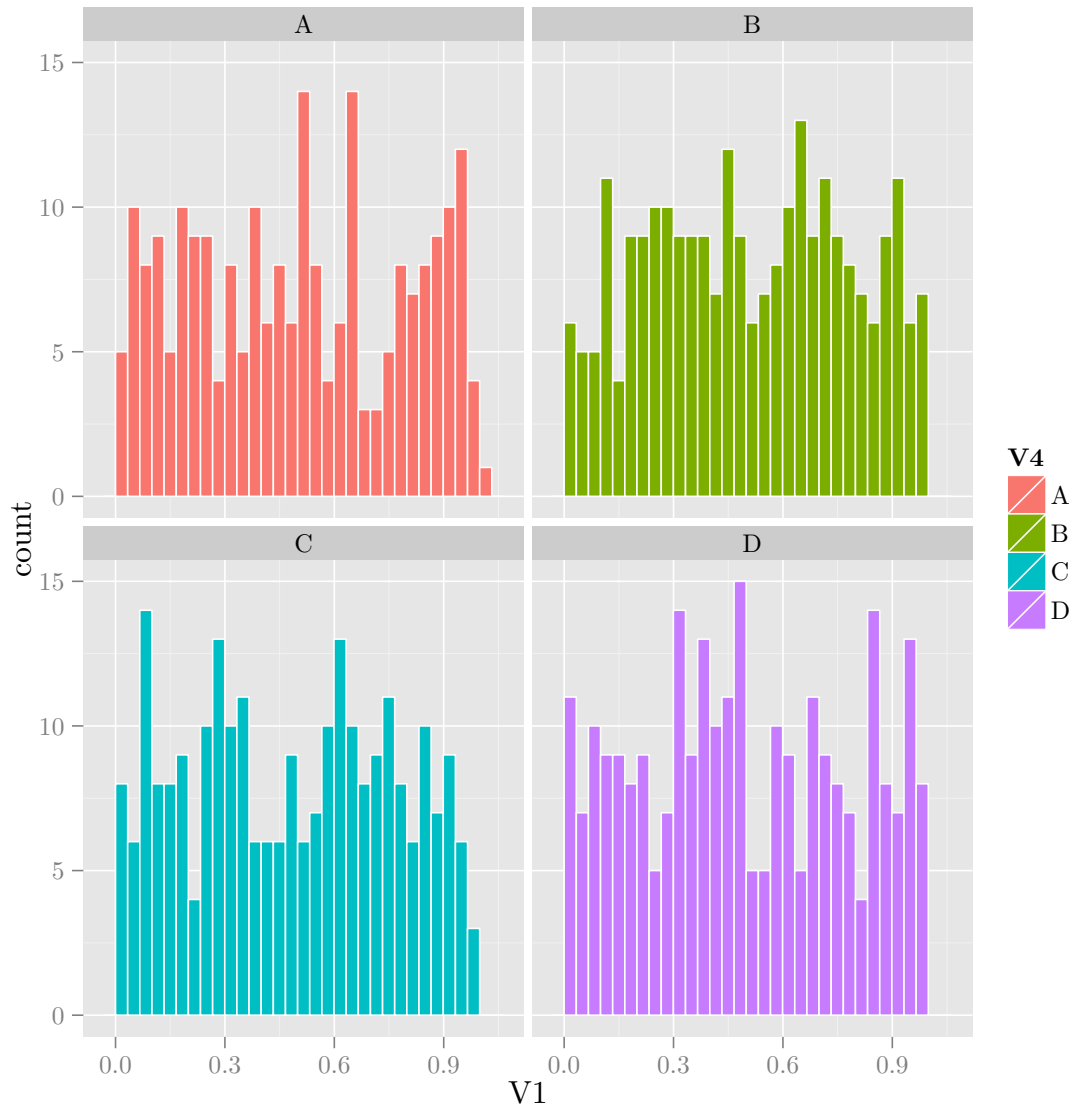


Figure 1: Some Distributions

```
ggplot(data = data, aes(x = V1, y = V2, size = V5, fill = V4)) +  
  geom_point(colour = 'white', alpha = 0.8, pch = 21)
```

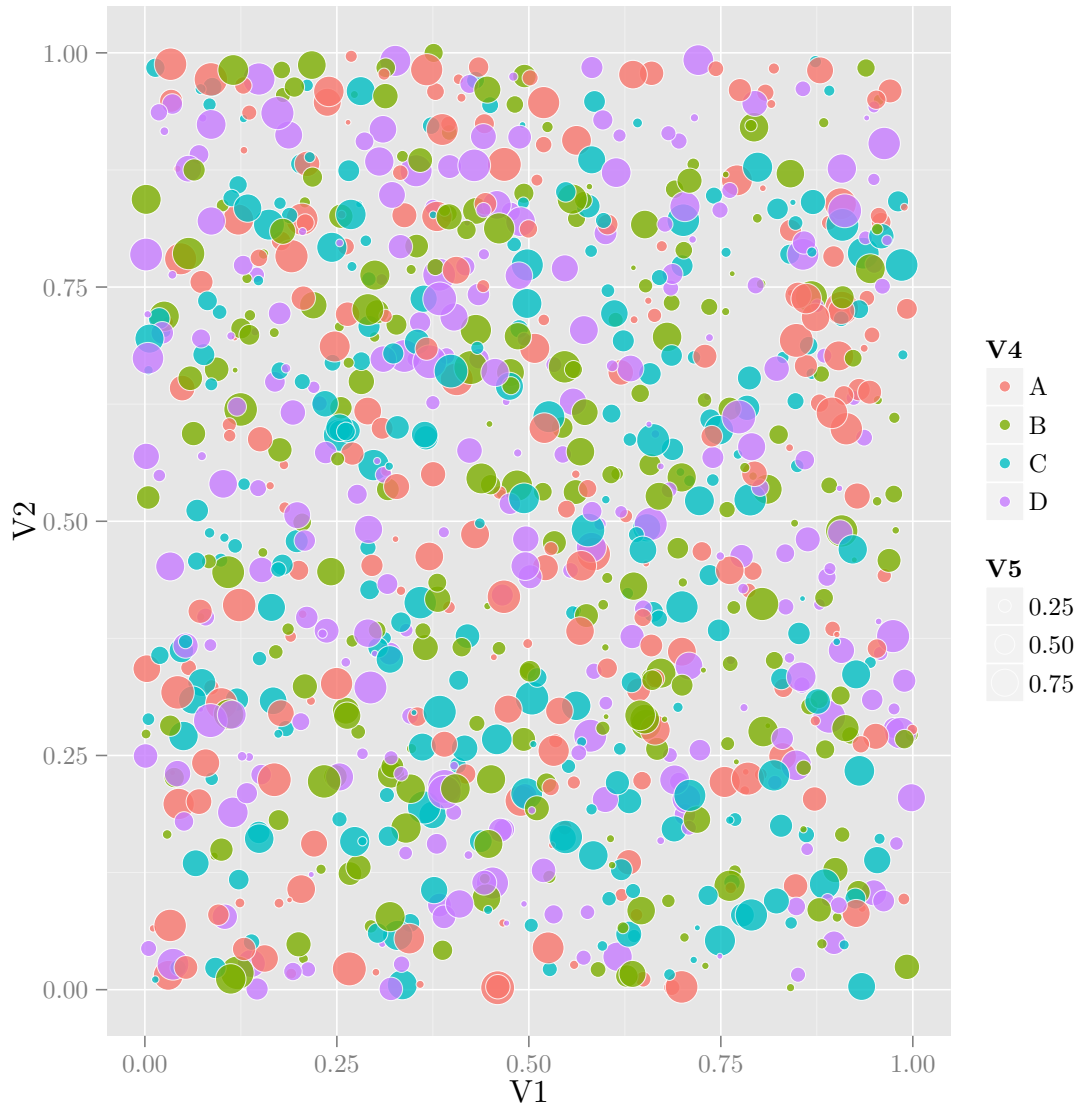


Figure 2: Some Scatterplots

```
map('state', projection = 'albers', par = c(lat0 = 30, lat1 = 40))
```



Figure 3: A Map

```
ggplot(data = rw.df) +  
  geom_line(aes(x = period, y = path, colour = phase))
```

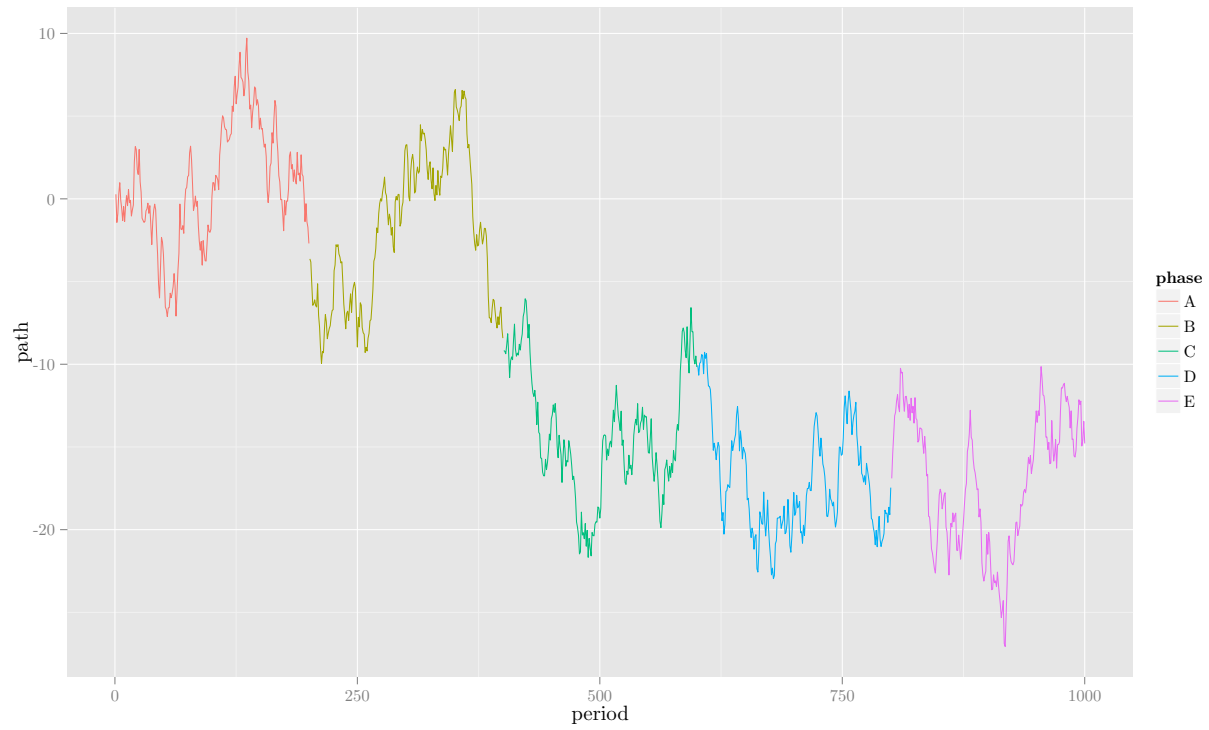


Figure 4: A Random Walk