462_HW3

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R Markdown

My code for creating a simulation of a sample of 15 from a exponential distribution with parameter lambda = 1. Doing the simulation 1000 times to compile a list of lambda-hat statistics in order to find our confidence interval.

```
lambhat_list = 1:1000
for (i in 1:1000){
  X = rexp(15, 1)
  lamb_hat = 1/mean(X)
  lambhat_list[i] = lamb_hat
}
```

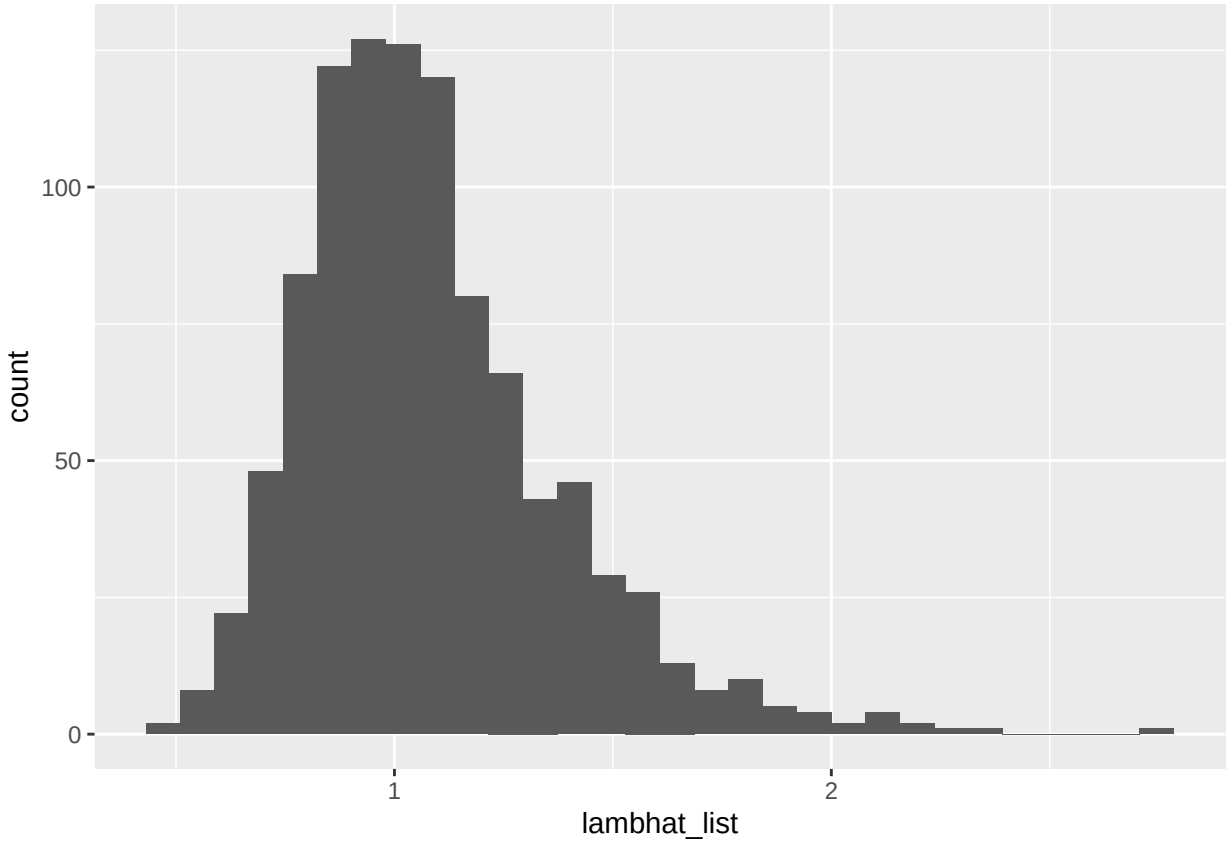
After running this code, I used the following command and variations of it to estimate the 95% confidence interval for (lamb_hat)/(lambda):

sum(as.numeric(lambhat_list > 2))/length(lambhat_list) ”

Including Plots

Plotting our data for visualization purposes. Code for visualization included below

```
library(ggplot2)
mydata = data.frame(lambhat_list)
ggplot(mydata,aes(lambhat_list))+geom_histogram(bins = 30)
```


100
50
0
count
1
2
lambhat_list