

```
#demonstration of central limit theorem
```

```
#First generate a population with a logarithmic distribution
```

```
#population has N = 500,000
```

```
library(dplyr)
```

```
population<-rlnorm(500000,5,1)
```

```
population<-data.frame(population)
```

```
population<-tbl_df(population)
```

```
hist(population$population)
```

```
#A function that creates a vector called "sampleMean" of the sample means
```

```
sample_means<-function(population,samples=100,sampleSize=10){
```

```
  sampleMean<-nrow(samples)
```

```
  for(i in 1:samples){
```

```
    temp<-sample_n(population,sampleSize)
```

```
    mean<-mean(temp$population,na.rm=TRUE)
```

```
    sampleMean <- append(sampleMean,mean)
```

```
  }
```

```
  sampleMean
```

```
}
```

```
#histogram of sampleMean
```

```
hist(sampleMean)
```