

Statistical Inference Course Project: PART 1

1. Simulation Exercise

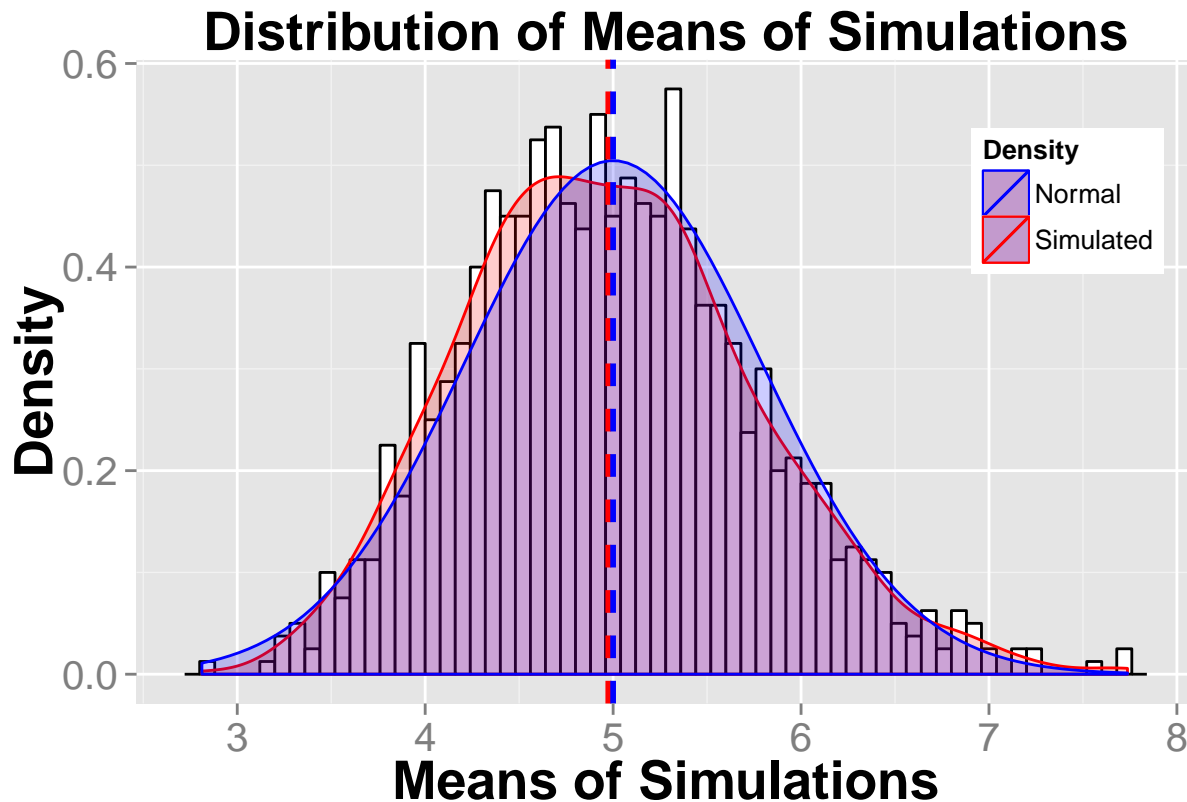
1. Show where the distribution is centered at and compare it to the theoretical center of the distribution

```
##      [,1] [,2]                                [,3]
## [1,] "1"  "Theoretical Centre of distribution" "5"
## [2,] "1"  "Centre of Simulation Distribution"  "4.97423877125153"
```

2. Show how variable it is and compare it to the theoretical variance of the distribution.

```
##      [,1] [,2]                                [,3]
## [1,] "2"  "Theoretical Variance of Distribution" "25"
## [2,] "2"  "Vairance of Simulation Distribution"  "23.3726136368744"
```

3. Show that the distribution is approximately normal. See image below: This shows the distribution of means of the 1000 sample Simulations is approximately normally distributed



4. Evaluate the coverage of the confidence interval

Confidence Interval

```
## [1] 4.675 5.274
```

Confidence Interval Coverage

```
## [1] 0.04947
```