Template_Rmd

Victor Huang

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Part 1: explanatio of the variables and the parameters of the population:

nSims: number of simulation
N: Population size
n: Sample size
y: population generated from N(theta,sigma2)
theta: Mean of y
sigma2: Variance of y
Y: Sample selected without replacement from y
theta_bar: Mean of sample
theta_var: Variance of Monte Carolo Draws

Part 2: Presenting the findings

```
nSims=10000
theta=2
sigma2=1
N=10000
n=c(100,1000,5000,9000,9900)
```

```
for (i in 1:length(n)){
  print(simulation(nSims,theta,sigma2,N,n[i]))
}
```

```
##              sampleMean   sampleVar
## Observed       2.012355 0.009807261
## Theorethical   2.000000 0.009900000
##              sampleMean    sampleVar
## Observed       2.001414 0.0009209435
## Theorethical   2.000000 0.0009000000
##              sampleMean    sampleVar
## Observed       2.004771 0.0001058052
## Theorethical   2.000000 0.0001000000
##              sampleMean    sampleVar
## Observed       2.018586 1.114908e-05
## Theorethical   2.000000 1.111111e-05
##              sampleMean    sampleVar
## Observed       1.994833 1.006481e-06
## Theorethical   2.000000 1.010101e-06
```