TECNOLÓGICO NACIONAL DE MÉXICO INSTITUTO TECNOLÓGICO DE TIJUANA

SUBDIRECCIÓN ACADÉMICA

DEPARTAMENTO DE SISTEMAS Y COMPUTACIÓN

SEMESTRE FEBRERO-JUNIO 2022

CARRERA
Ingeniería en informática

MATERIA
Minería de datos

TÍTULO
Práctica #1
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NOMBRE DEL MAESTRO
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Test the Law Of Large Numbers for N random normally distributed numbers with mean = 0, stdev=1:

Create an R script that will count how many of these numbers fall between -1 and 1 and divide
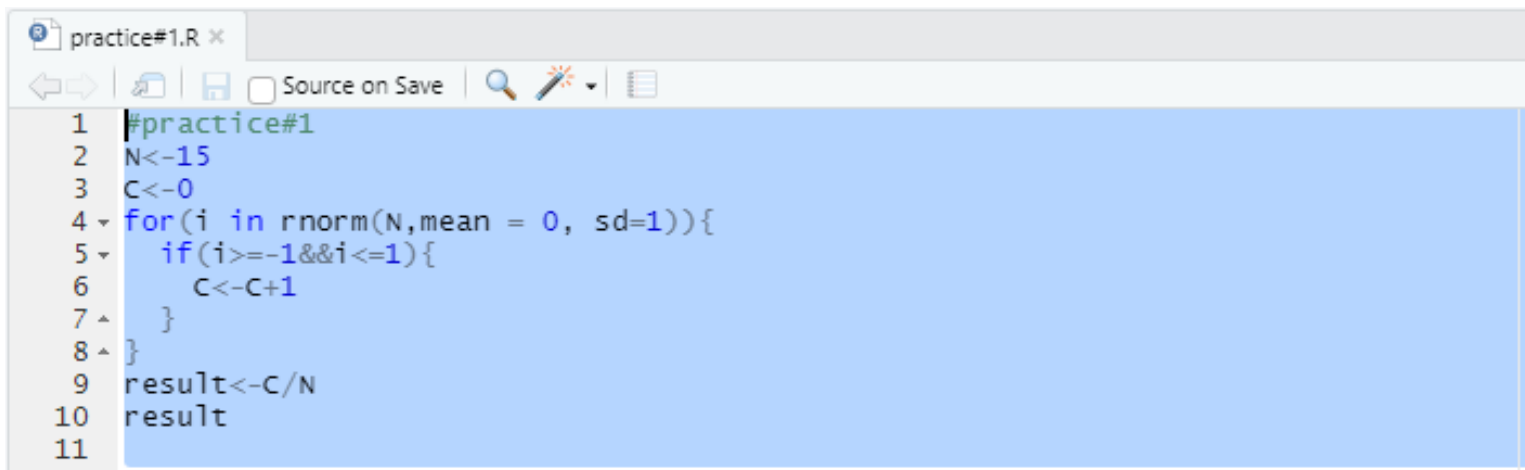by the total quantity of N

You know that E(X) = 68.2%
Check that Mean(Xn)->E(X) as you rerun your script while increasing N

Hint:
1. Initialize sample size
2. Initialize counter
3. loop for(i in rnorm(size))
4. Check if the iterated variable falls
5. Increase counter if the condition is true
6. return a result <- counter / N

Input:

```
1  #practice#1
2  N<-15
3  C<-0
4 ▾ for(i in rnorm(N,mean = 0, sd=1)){
5 ▾   if(i>=-1&&i<=1){
6        C<-C+1
7 ▲   }
8 ▲ }
9  result<-C/N
10 result
11
```

Output:

```
Console   Terminal ×   Jobs ×
R  R 3.6.2 · ~/
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

>
>
> #practice#1
> N<-15
> C<-0
> for(i in rnorm(N,mean = 0, sd=1)){
+     if(i>=-1&&i<=1){
+       C<-C+1
+     }
+ }
> result<-C/N
> result
[1] 0.6666667
>
```

Environment   History   Connections   Tutorial

Import Dataset ▾   120 MiB ▾

R ▾   Global Environment ▾

values

C	10
i	-0.48750010200956
N	15
result	0.666666666666667