Distribución Uniforme

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```
import os
os.environ['QT_QPA_PLATFORM_PLUGIN_PATH'] = 'C:/Users/jxsje/anaconda3/Library/plugins/platforms'
```

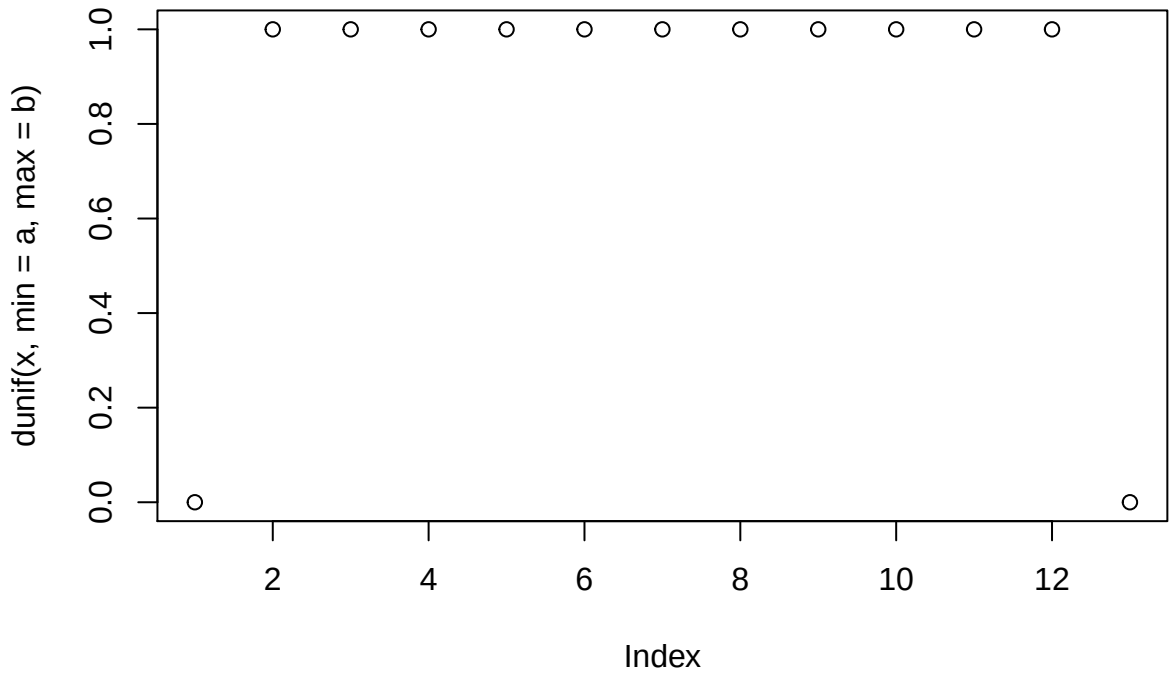
Distribución Uniforme

Supongamos que $X \sim U([0,1])$ entonces podemos estudiar sus parámetros.

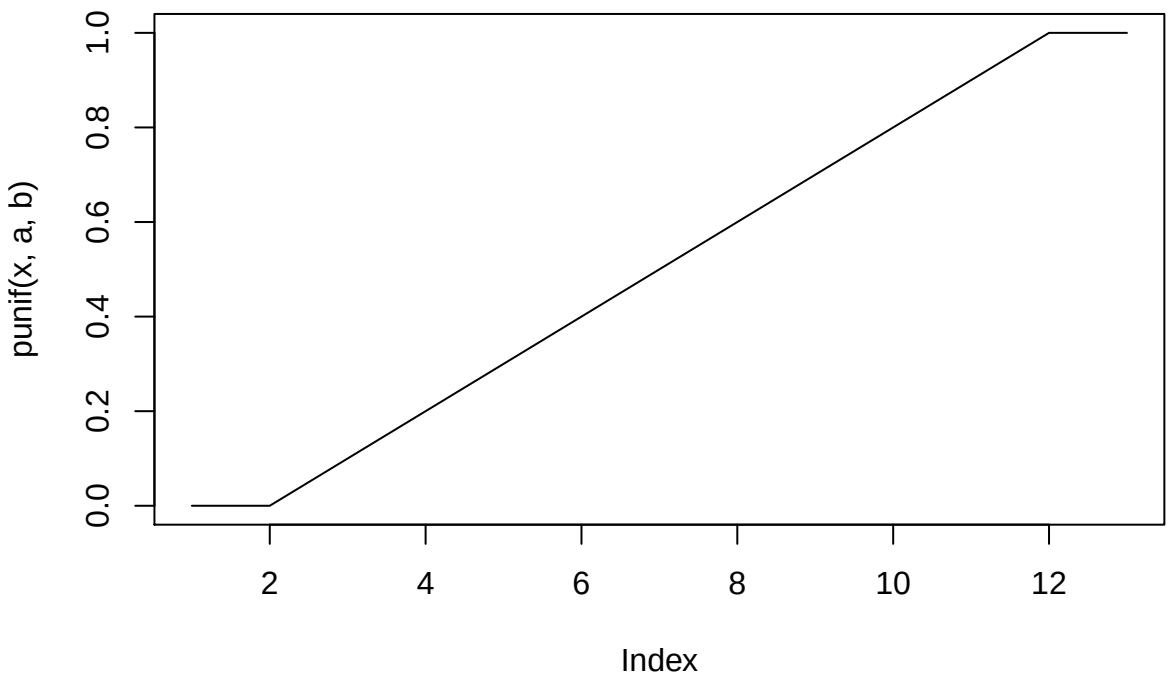
En R

```
a = 0
b = 1

x = seq(-0.1,1.1, 0.1)
plot(dunif(x, min = a, max = b))
```



```r
plot(punif(x, a, b), type = 'l')
```



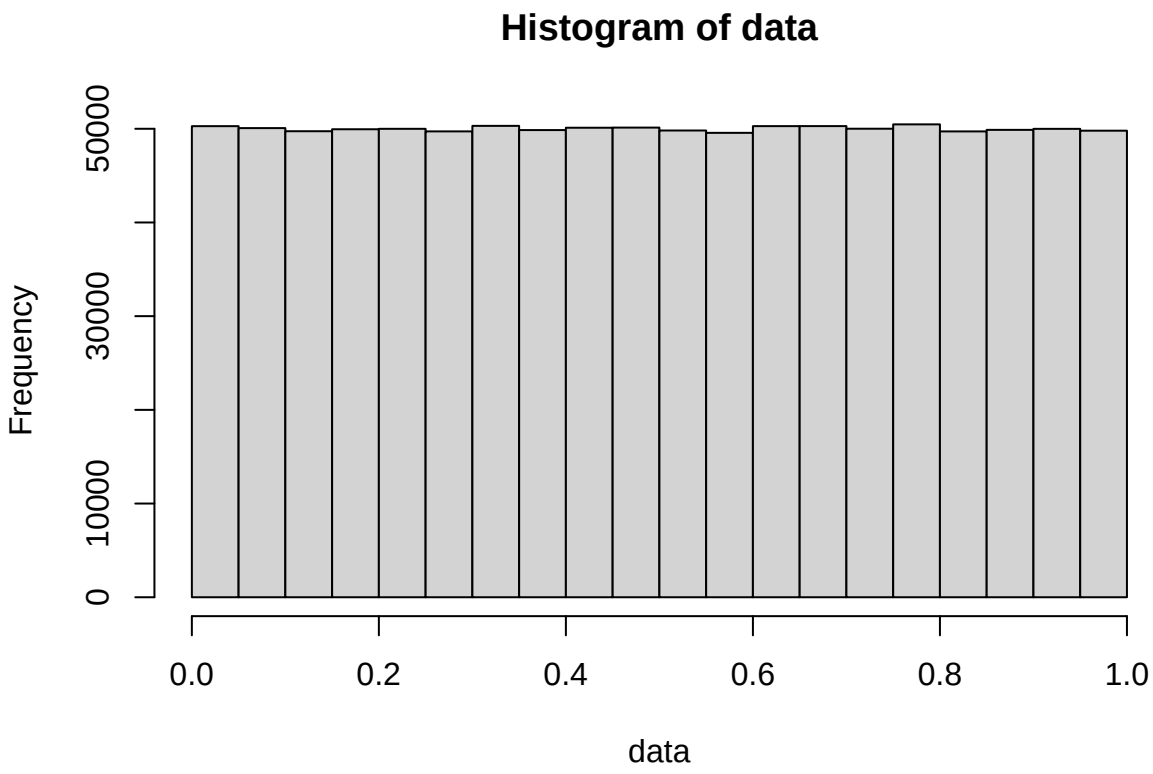

```r
qunif(0.5, a,b)
```

```
## [1] 0.5
```

```r
qunif(0.25, a,b)
```

```
## [1] 0.25
```

```r
runif(1000000, a,b) -> data
hist(data)
```



En Python

```
from scipy.stats import uniform
import matplotlib.pyplot as plt
import numpy as np

a = 0
b = 1

loc = a
scale = b-a

fig, ax = plt.subplots(1,1)

rv = uniform(loc = loc, scale = scale)

mean, var, skew, kurt = uniform.stats(moments = 'mvsk')
print("Media %f"%mean)
```

```
## Media 0.500000
```

```
print("Varianza %f"%var)
```

```
## Varianza 0.083333
```

```
print("Sesgo %f"%skew)
```

```
## Sesgo 0.000000
```

```
print("Curtosis %f"%kurt)
```

```
## Curtosis -1.200000
```

```
x = np.linspace(-0.1, 1.1, 120)
ax.plot(x, rv.pdf(x), 'k-', lw = 2, label = "U(0,1)")

r = rv.rvs(size = 100000)
ax.hist(r, density = True, histtype = "stepfilled", alpha = 0.25)
```

```
## (array([0.98583241, 0.99823281, 0.97613209, 1.00433301, 1.0129333 ,
##         1.01273329, 1.00253295, 1.00353299, 1.003833  , 1.00023288]), array([3.10293981e-05, 1.000277
##         4.00017881e-01, 5.00014594e-01, 6.00011307e-01, 7.00008019e-01,
##         8.00004732e-01, 9.00001445e-01, 9.99998158e-01]), <a list of 1 Patch objects>)
```

```
ax.legend(loc = "best", frameon = False)
plt.show()
```