Distribución de Bernoulli

Curso de Estadística Descriptiva

21/1/2019

Función de densidad

Sea $X = Be(p = 0.7)$, la distribución que modela la probabilidad de obtener una cara usando una moneda trucada.

$$f(k) = p^k(1-p)^{1-p},\ k \in \{0, 1\}$$

En R

```
library(Rlab)
```

```
## Rlab 2.15.1 attached.
```

```
##
## Attaching package: 'Rlab'
```

```
## The following objects are masked from 'package:stats':
##
##     dexp, dgamma, dweibull, pexp, pgamma, pweibull, qexp, qgamma,
##     qweibull, rexp, rgamma, rweibull
```

```
## The following object is masked from 'package:datasets':
##
##     precip
```

```
dbern(0, prob= 0.7)
```

```
## [1] 0.3
```

```
dbern(1, prob = 0.7)
```

```
## [1] 0.7
```

```
pbern(0, prob = 0.7)
```

```
## [1] 0.3
```

```
pbern(1, prob = 0.7)
```

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

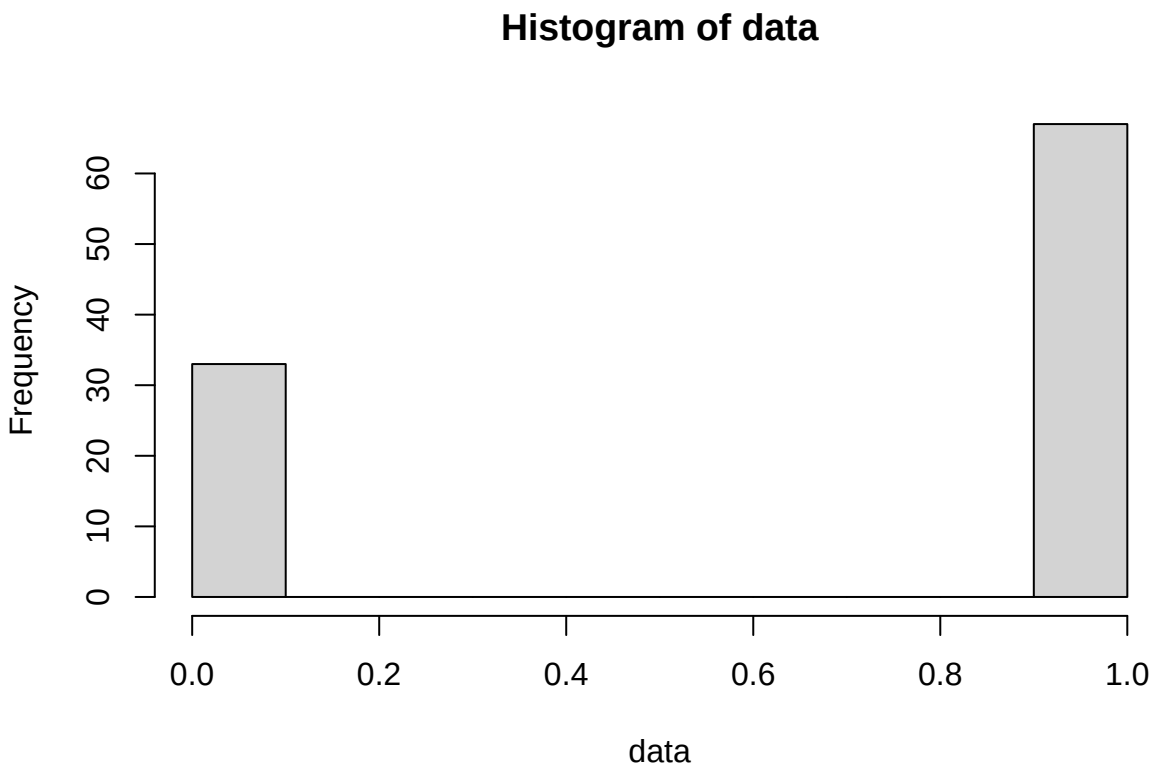
```
qbern(0.5, prob = 0.7)
```

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

```
qbern(0.25, prob = 0.7)
```

```
## [1] 0
```

```r
rbern(100, prob = 0.7) -> data
hist(data)
```



En Python

```python
from scipy.stats import bernoulli
import matplotlib.pyplot as plt
p = 0.7
mean, var, skew, kurt = bernoulli.stats(p, moments = 'mvsk')
print("Media %f"%mean)
```

```
## Media 0.700000
```

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

```
## Varianza 0.210000
```

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

```
## Sesgo -0.872872
```

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

```
## Curtosis -1.238095
```

```python
fix, ax = plt.subplots(1,1)
x = bernoulli.rvs(p, size = 1000)
ax.hist(x)
```

```
## (array([304.,   0.,   0.,   0.,   0.,   0.,   0.,   0.,   0., 696.]), array([0. , 0.1, 0.2, 0.3, 0.4
```

```
plt.show()
```