



Statistical Distributions

Random Experiment



Statistical Distributions

Random Experiment 



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment →



Statistical Distributions

Random Experiment \rightarrow Random Variable

Statistical Distributions





Statistical Distributions

Random Experiment → Random Variable

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary ▶

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →

Statistical Distributions

Random Experiment → Random Variable

Multiple
possibilities of
CEO Salary →



Statistical Distributions

Random Experiment → Random Variable

Multiple possibilities of CEO Salary → the “**Salary**”

Statistical Distributions

Random Experiment → Random Variable

Multiple possibilities of CEO Salary → the “**Salary**”

A Statistical Distribution is a tool to help us ‘characterize’ or ‘model’ the random variable



Statistical Distributions

Beta

Binomial

Gamma

Poisson

Normal

t distribution

...

...



Statistical Distributions

Beta

Binomial

Gamma

Poisson

Normal

t distribution

...

...



Statistical Distributions

Beta

Binomial

Gamma

Poisson

Normal the Bell curve

t distribution

...

...

Statistical Distributions

Discrete distribution

Continuous distribution

Statistical Distributions

Discrete distribution

- A statistical distribution used for *Discrete* data

Continuous distribution

Statistical Distributions

Discrete distribution

- A statistical distribution used for *Discrete* data

Continuous distribution

- A statistical distribution used for *Continuous* data



Discrete versus Continuous data



Discrete versus Continuous data

- number of students in class



Discrete versus Continuous data

- number of students in class
- number of patients admitted to a hospital

Discrete versus Continuous data

- number of students in class
- number of patients admitted to a hospital
- number of companies with revenue > 1 b\$

Discrete versus Continuous data

Discrete Data

- number of students in class
- number of patients admitted to a hospital
- number of companies with revenue > 1 b\$

Discrete versus Continuous data

Discrete Data

- number of students in class
- number of patients admitted to a hospital
- number of companies with revenue > 1 b\$

Test of Discreteness

- The data is Discrete if between any two realizations a **finite** number of outcomes can occur

Discrete versus Continuous data

Discrete Data

- number of students in class
- number of patients admitted to a hospital
- number of companies with revenue > 1 b\$

Test of Discreteness

- The data is Discrete if between any two realizations a **finite** number of outcomes can occur
- The data is Continuous if between any two realizations an **infinite** number of outcomes can occur



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)

Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



(heights of men and women)

Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



(heights of men and women)



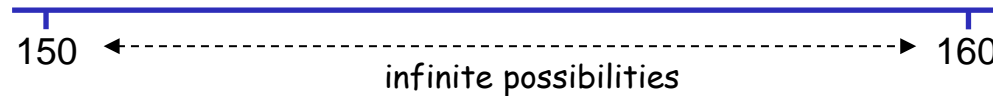
Discrete versus Continuous data

Test of Discreteness

(number of students in a class)



(heights of men and women)



Discrete versus Continuous data

It is common in business applications to use a continuous distribution such as the Normal (the Bell curve) for discrete data

Discrete versus Continuous data

It is common in business applications to use a continuous distribution such as the Normal (the Bell curve) for discrete data

- Normal distribution
- t - distribution