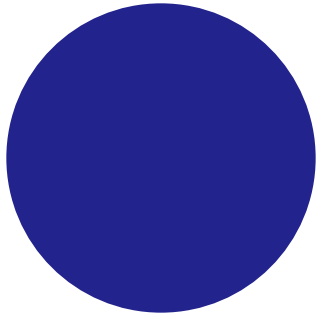


Population and a Sample

Population



Sample from that Population



Population and a Sample

Population

- Collection of people
- Collection of items
- Group of measurements
- Set of events

...

...

...

Population and a Sample

Population

- Collection of people
- Collection of items
- Group of measurements
- Set of events

...

...

...

Def:

It is the complete set of numerical information on a particular quantity in which we as an analyst are interested



Population and a Sample

% of votes that a candidate will get in the upcoming
Mayor's election in your city



Population and a Sample

% of votes that a candidate will get in the upcoming
Mayor's election in your city

Relevant Population

set of all voting people
in the city

Population and a Sample

% of votes that a candidate will get in the upcoming Mayor's election in your city

Impact of menu changes on sales in Texas McDonalds restaurants

Relevant Population

**set of all voting people
in the city**

**all franchisee McDonalds
restaurants in Texas**

Population and a Sample

% of votes that a candidate will get in the upcoming Mayor's election in your city

Impact of menu changes on sales in Texas McDonalds restaurants

F.D.A. of the United States needs to test and clear food items being imported inside the United States

Relevant Population

**set of all voting people
in the city**

**all franchisee McDonalds
restaurants in Texas**

**all food items being
imported**

Population and a Sample

Sample

Def:

It is a subset of the relevant population and is used to make inferences about the population.

Population and a Sample

Relevant Population

set of all voting people
in the city

A **sample** from this population is used to make inferences about the elections.

all franchisee McDonalds
restaurants in Texas

all food items being
imported

Population and a Sample

Relevant Population

set of all voting people
in the city

all franchisee McDonalds
restaurants in Texas

all food items being
imported

A **sample** from this population is used to make inferences about the elections.

F.D.A. may not test all food items, rather it could inspect a **sample** of items and draw a conclusion about **all** the items.

Population and a Sample

Relevant Population

set of all voting people
in the city

all franchisee McDonalds
restaurants in Texas

all food items being
imported

A **sample** from this population is used to make inferences about the elections.

McDonalds may analyze only a **sample** of restaurants rather than the entire set of restaurants.

F.D.A. may not test all food items, rather it could inspect a **sample** of items and draw a conclusion about **all** the items.

Population and a Sample

Why do we take a Sample ?

- Practicality and cost concerns
- Many a times it just may be not possible to access the entire population

Population and a Sample

Why do we take a Sample ?

- Practicality and cost concerns
- Many a times it just may be not possible to access the entire population

Counting the number of black spots on oranges picked at a large orange farm



May not be feasible to count the spots on every orange picked

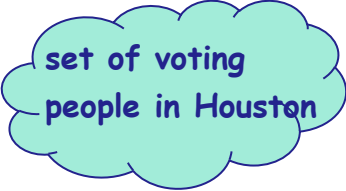


Population and a Sample

- Populations and Samples are context driven

Population and a Sample

- Populations and Samples are context driven

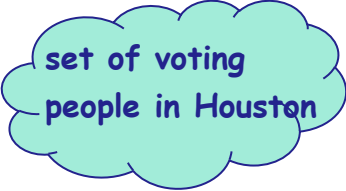


set of voting
people in Houston

Is a **sample** when analyzing the voting behavior in the
Presidential election across the United States

Population and a Sample

- Populations and Samples are context driven



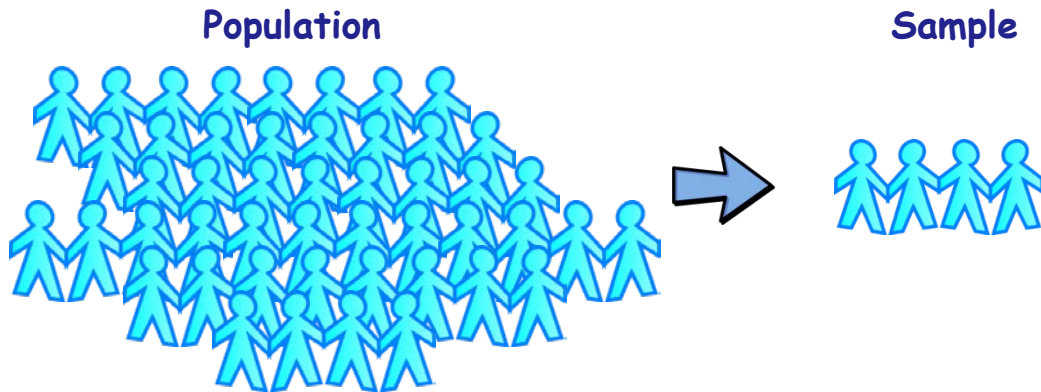
set of voting
people in Houston

Is a **sample** when analyzing the voting behavior in the Presidential election across the United States

Is a **population** when analyzing the voting behavior for Houston's Mayor elections.

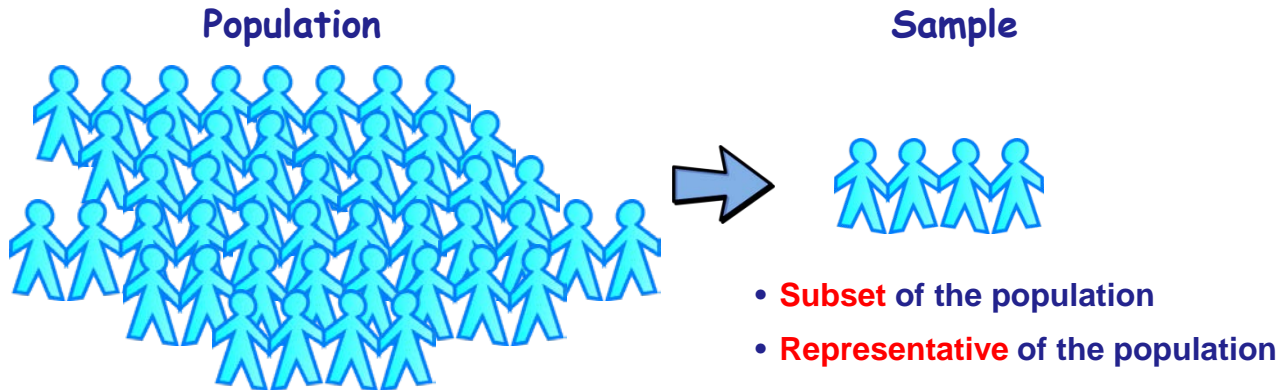
Population and a Sample

Making inference about the Population using a Sample



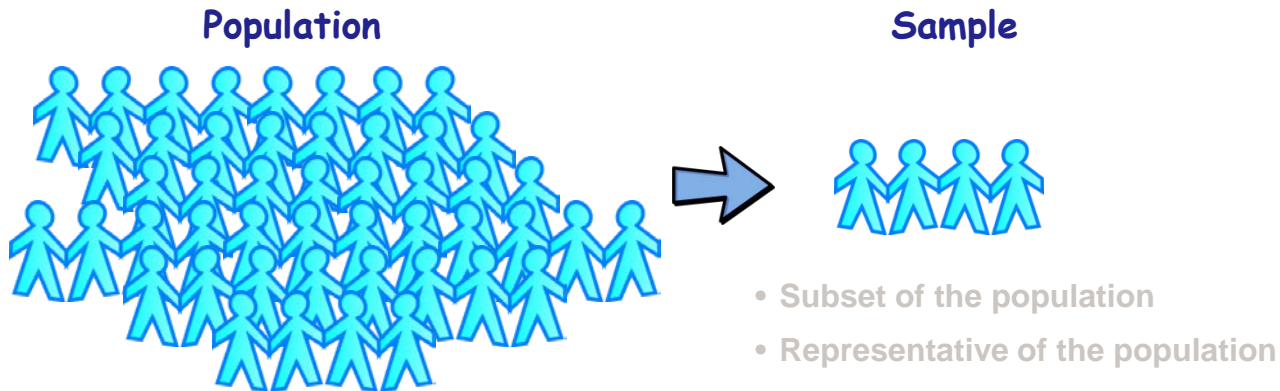
Population and a Sample

Making inference about the Population using a Sample



Population and a Sample

How do we get a representative sample ?



Population and a Sample

How do we get a representative sample ?

