

# **SAMPLING DISTRIBUTION**

A black cat with bright yellow eyes is the central focus of the image. The cat is looking directly at the camera with a steady gaze. The background is dark and out of focus, making the cat stand out. The text 'SAMPLING DISTRIBUTION' is overlaid in large, bold, yellow letters across the upper portion of the image.

**SUDHEESH P**  
**M.Ed. First year**  
**Roll No:29**  
**NSS College ottappalam**

# What is Sampling Distribution ?.....

A black cat with yellow eyes is lying down, looking directly at the camera. The background is dark and out of focus.

- **Probability distribution**
- **Range of possible outcomes for a statistic**



Population

Sample



# Population

- **Elements**
- **Individuals**
- **Items**
- **Objectives**

A black cat is lying down, its face partially obscured by a semi-transparent dark grey rectangular box. The text 'POPULATION : Examples' is written in yellow on this box. The background is dark with some bokeh light effects on the right side.

# **POPULATION : Examples**



**population of  
ELEPHANT**



A photograph of four lionesses drinking water from a pool at night. The scene is dimly lit, with the water reflecting the light. The lionesses are positioned in a line, each with its head down to the water. The background is dark, making the water and the animals stand out.

# **Population** of LIONS



A collection of light bulbs hanging from above against a dark background. Some bulbs are lit, glowing with a warm yellow light, while others are unlit. The bulbs are arranged in a somewhat haphazard manner, with some in the foreground and others in the background. The lighting is dramatic, highlighting the glass and metal components of the bulbs.

**Population of light bulbs**





Variable

Parameter

# VARIABLE: Examples

## Population

Human Adult  
Population of India

Bulbs manufactured  
in a factory

Silver ring  
manufactured in a  
factory

## Variable

Height

Lifetime

Diameter



Population  
&  
Variable



# PARAMETERS: Examples

## Population

Human Adult  
Population of India

Light Bulbs  
manufactured in a  
factory

Silver ring  
manufactured in a  
factory

## parameter

Average Height of  
all Adult Indians

Median Lifetime of  
the bulbs

Diameter attained  
most of the time



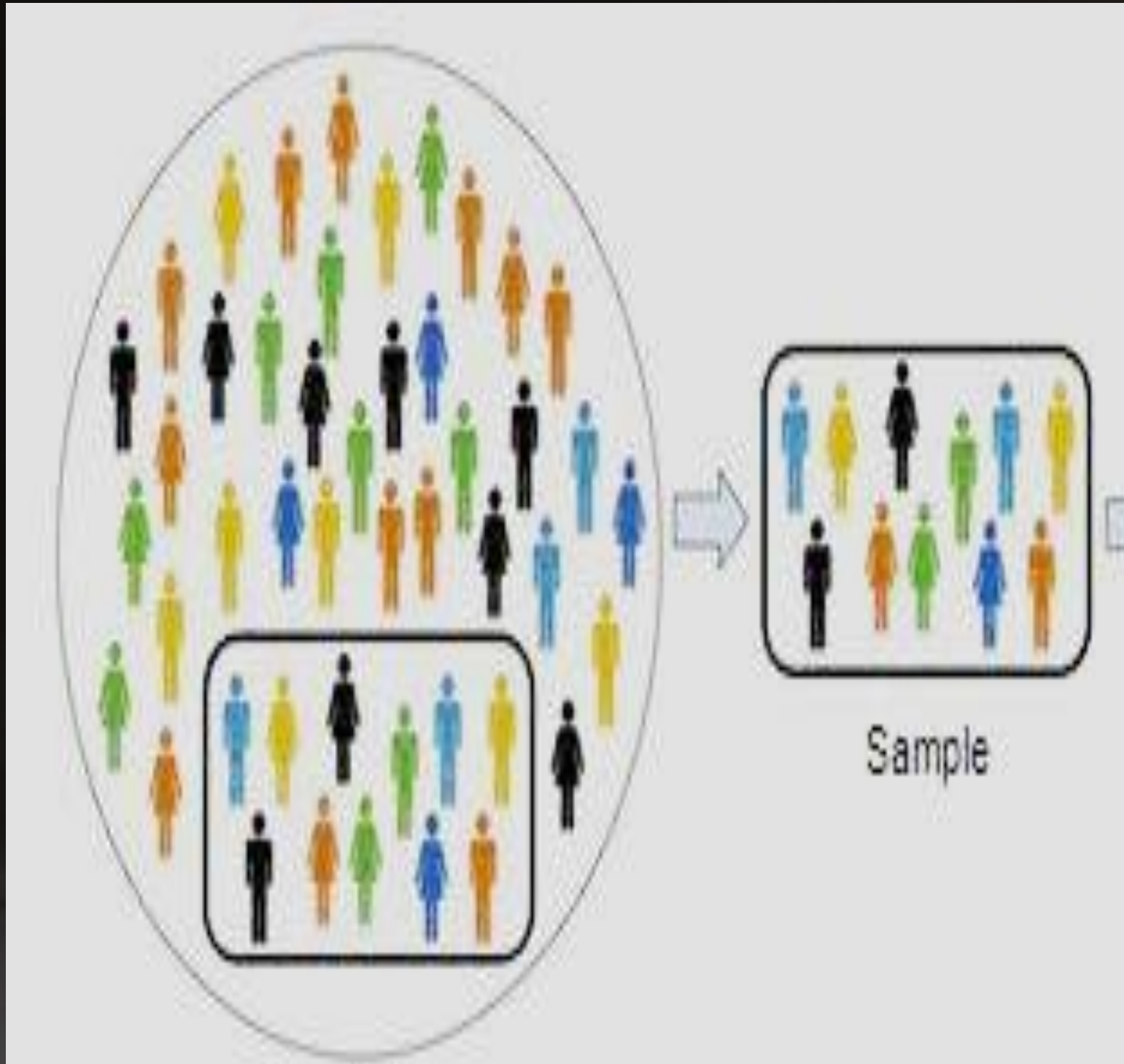
# Population

# &

# Parameter



# Sample



- Subset of population
- It contains the characteristics of a population





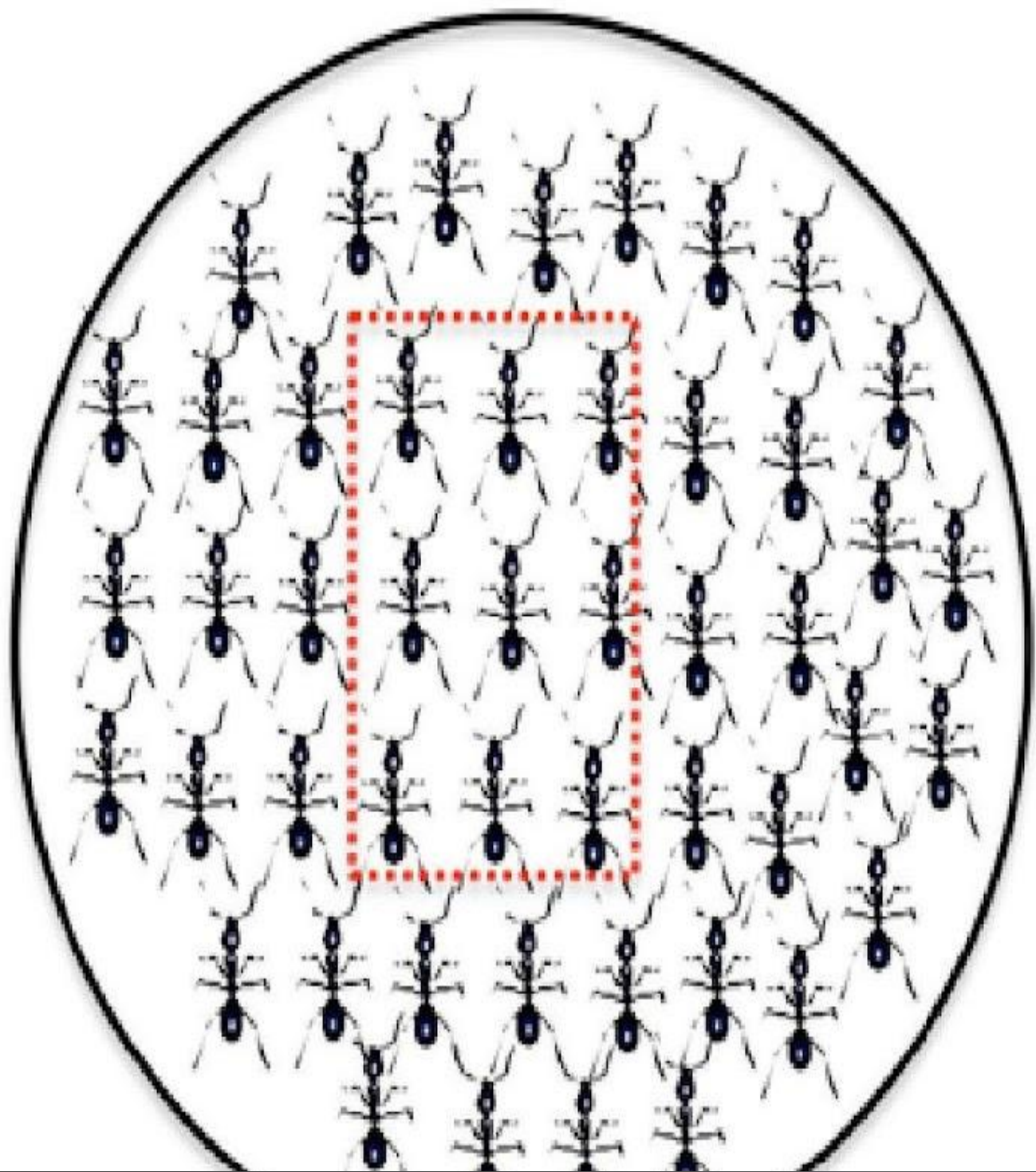
But how to get a representative sample?

There must be some objective method of choosing a sample

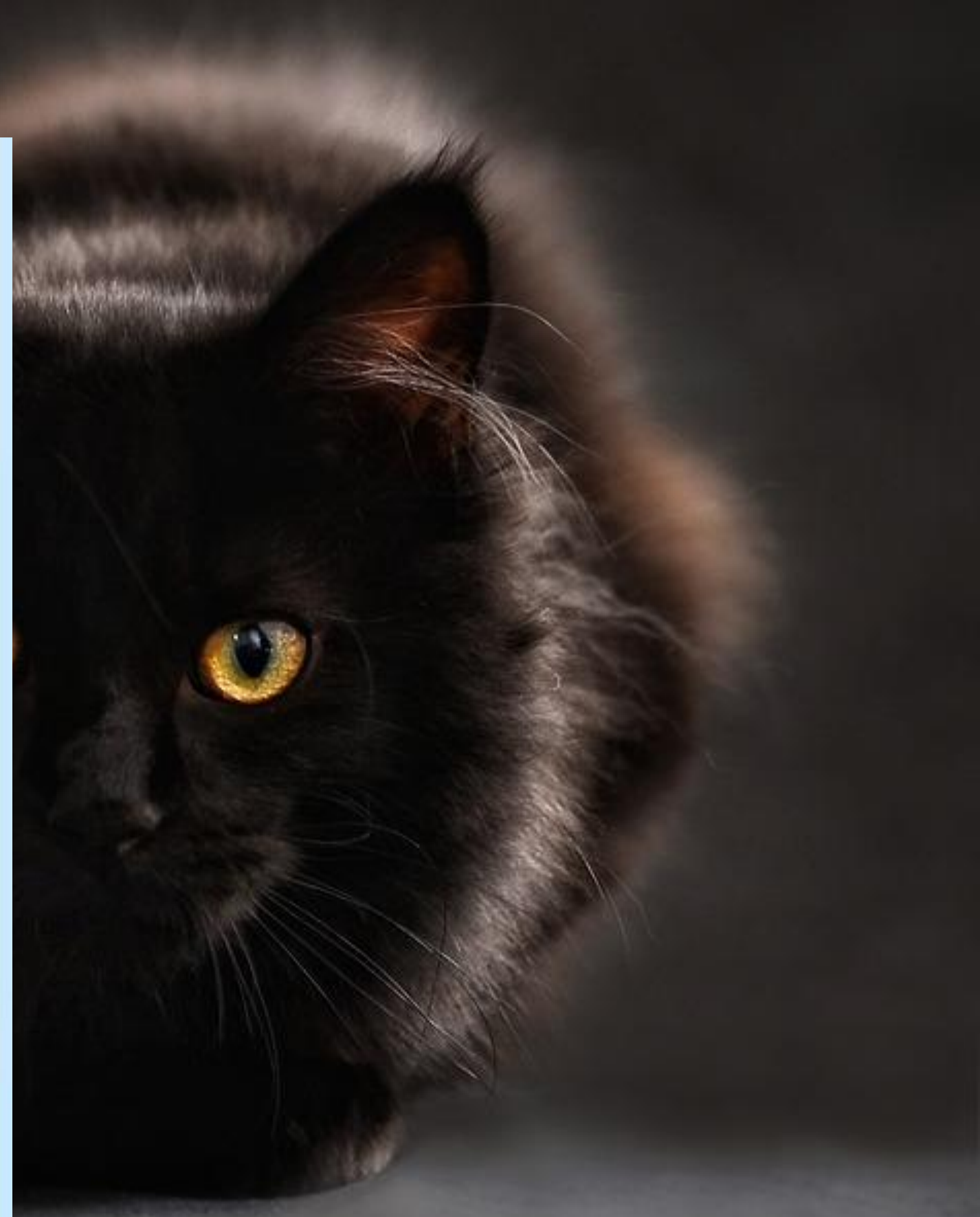
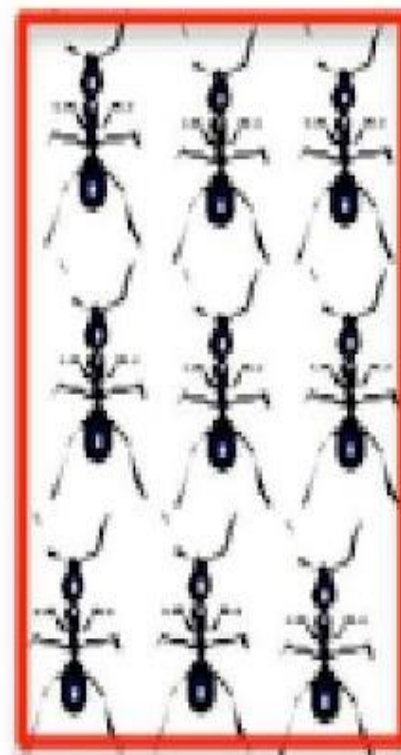




**Population (N)**

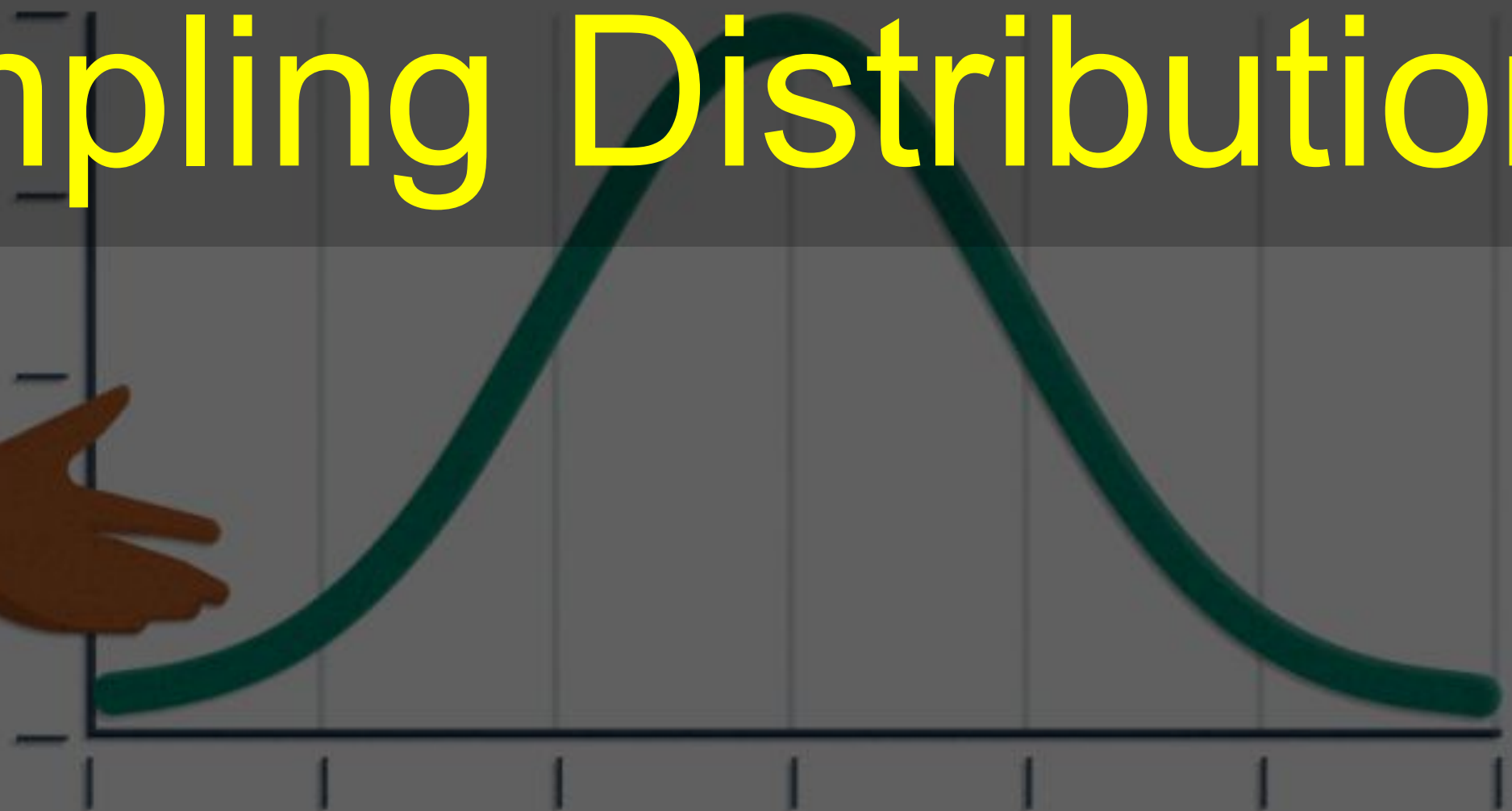


**Sample (n)**





# Sampling Distribution



# Types of Sampling Distribution

Mean

Proportion

T- distribution



A close-up, slightly blurred photograph of a black cat's face, looking directly at the camera. The cat's eyes are a striking yellowish-gold. The background is dark and out of focus.

## Mean

- Probabilistic spread of all the means of samples
- fixed size that users choose randomly from a particular population

# Proportion



- Select samples and calculate the sample proportions .
- Identify the proportions of the population



# T- distribution



- ❑ **Probability distribution**
- ❑ **Symmetric & bell shaped**
- ❑ **Population standard deviation is unknown**



Central Limit  
Theorem





# Central Limit Theorem

- Relationship between sample means & populations
- Population is normally distributed  
or standard error decreases.
- Normal population depends on the sample size

**Thank you**







