1️⃣ WHAT IS FREQUENCY?

🔹 Professional Definition

Frequency is the number of times a particular value or observation occurs in a dataset.

🔹 Simple Explanation

Frequency matlab:

Koi value kitni baar repeat hui hai

🔹 Example

Marks of students:

50, 60, 70, 70, 80, 70, 90

Frequency of 70 = 3

🔹 Real Life Example (Data Science)

Example: Website visits per day

Visits	Frequency
100	5 days
200	10 days

Meaning:

200 visits → occurred 10 times

2️⃣ WHAT IS FREQUENCY DISTRIBUTION?

🔹 Professional Definition

A **frequency distribution is a tabular or graphical representation showing how often each value or group of values occurs in a dataset.**

🔹 Simple Explanation

Data ko table me arrange karna with count.

🔹 **Example**

Marks of 10 students:

10, 20, 20, 30, 30, 30, 40, 40, 50, 50

Frequency Table:

Marks	Frequency
10	1
20	2
30	3
40	2
50	2

🔹 **Why Frequency Distribution is Important**

Without frequency distribution:

Data is messy.

With frequency distribution:

Patterns become clear.

🔹 **Data Science Example**

Customer purchase dataset:

Instead of seeing 10,000 rows,

we summarize:

| Purchase Amount | Frequency |

Helps in:

Customer segmentation
Business analysis

3️⃣ **TYPES OF FREQUENCY DISTRIBUTION**

A) Ungrouped Frequency Distribution

Each value shown separately.

Example:

| Age | Frequency |

B) Grouped Frequency Distribution

Data grouped into class intervals.

Example:

Age Group	Frequency
10-20	5
20-30	10

Used when dataset is large.

4️⃣ WHAT IS CUMULATIVE FREQUENCY?

🔹 Professional Definition

Cumulative frequency is the running total of frequencies up to a particular value or class interval.

🔹 Simple Explanation

Frequency ko add karte jana step by step.

🔹 Example

Marks	Frequency	Cumulative Frequency
10	2	2
20	3	5
30	4	9
40	1	10

Explanation:

2
2+3=5
5+4=9
9+1=10

5️⃣ TYPES OF CUMULATIVE FREQUENCY

Less Than Cumulative Frequency

Add from top to bottom

Greater Than Cumulative Frequency

Add from bottom to top

6️⃣ Real Life Example (Important for Masters)

Example: Salary Distribution

Salary	Frequency
20000	5
30000	10
40000	15

Cumulative Frequency:

Salary	CF
20000	5
30000	15
40000	30

Interpretation:

30 employees earn ≤ 40000

7️⃣ Data Science Connection

Frequency distribution helps in:

Data Analysis
Feature Understanding
Data Visualization
Histogram creation
Probability distribution

Used in:

Machine Learning
EDA (Exploratory Data Analysis)