Qualitative Data

Definition: Non-numerical data that describes qualities or categories. It is often descriptive and cannot be measured in numbers.

Examples:

1. Eye color (e.g., blue, green, brown)
2. Type of pet (e.g., cat, dog, bird)
3. Names of students
4. Vehicle types (e.g., sedan, SUV, truck)
5. Gender (e.g., male, female, non-binary)
6. Favorite programming language (e.g., Python, Java)
7. Types of cuisine (e.g., Italian, Chinese, Mexican)
8. Clothing sizes (e.g., small, medium, large)
9. Blood type (e.g., A, B, AB, O)
10. Preferred mode of transportation (e.g., car, bus, bicycle)

Quantitative Data

Definition: Numerical data that can be measured or counted. It represents quantities.

Examples:

1. Age of individuals
2. Number of pets owned
3. Weight of an object
4. Distance traveled in kilometers
5. Annual income in dollars
6. Temperature in Celsius
7. Number of books read in a year
8. Height of students in centimeters
9. Population of a city
10. Time taken to complete a task in seconds

Discrete Data

Definition: Countable numerical data that takes specific values and cannot have decimals.

Examples:

1. Number of pets owned

2. Number of students in a class
3. Number of cars in a parking lot
4. Number of siblings a person has
5. Number of goals scored in a match
6. Number of steps taken in a day
7. Number of pages in a book
8. Number of items sold in a store
9. Number of votes received by a candidate
10. Number of errors on a test

Continuous Data

Definition: Measurable numerical data that can take any value within a range and include decimals.

Examples:

1. Weight of an object (e.g., 65.5 kg)
2. Height of individuals (e.g., 170 cm)
3. Temperature (e.g., 22.3°C)
4. Distance traveled (e.g., 10.75 km)
5. Time taken to finish a race (e.g., 12.34 seconds)
6. Speed of a car (e.g., 80 km/h)
7. Blood pressure readings (e.g., 120/80 mmHg)
8. Volume of water used per day (e.g., 15 liters)
9. Annual rainfall in millimeters (e.g., 1200 mm)
10. Length of an object (e.g., 15.6 cm)

Nominal Data

Definition: Qualitative data with no inherent order or ranking among the categories.

Examples:

1. Types of fruit (e.g., apple, banana, orange)
2. Marital status (e.g., single, married, divorced)
3. Eye color (e.g., blue, green, brown)
4. Car brands (e.g., Toyota, Ford, BMW)
5. Nationality (e.g., Irish, American, Indian)
6. Types of beverages (e.g., tea, coffee, juice)

7. Blood type (e.g., A, B, AB, O)
8. Sports teams (e.g., Lakers, Yankees)
9. Programming languages (e.g., Python, JavaScript)
10. Types of flowers (e.g., rose, tulip)

Ordinal Data

Definition: Qualitative data with an inherent order or ranking among the categories but without consistent intervals between them.

Examples:

1. Education level (e.g., high school, bachelor's degree, master's degree)
2. Customer satisfaction ratings (e.g., very satisfied to very dissatisfied)
3. Movie ratings (e.g., 1 star to 5 stars)
4. Military ranks (e.g., private, sergeant, captain)
5. Class grades (e.g., A+, A-, B+)
6. Economic status levels (low income, middle income, high income)
7. Pain severity scale (mild, moderate, severe)
8. Hotel star ratings (1-star to 5-star hotels)
9. Priority levels for tasks (low priority to high priority)
10. Fitness levels in competitions (beginner to advanced)

Interval Data

Definition: Quantitative data with equal intervals between values but no true zero point.

Examples:

1. Temperature in Celsius or Fahrenheit
2. Time on a clock or calendar year
3. IQ scores
4. SAT scores
5. pH levels on the acidity scale
   6-10: These are less common; interval scales are primarily used for specific scientific or standardized measurements like those above.

Ratio Data

Definition: Quantitative data with equal intervals between values and a meaningful zero point.

Examples:

1-10: Most examples from quantitative continuous/discrete data also qualify as ratio data because they have true zero points:

- Weight
- Height
- Income