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PRAGYA INSTITUTE OF IT & RESEARCH

Est.2011

Data & Information

24 HOURS

WHAT IS DATA

Data refers to raw, unorganized facts, figures, or details that can be collected, measured, and analyzed. It serves as the foundation for information and is often used as input for computational processes. Data on its own has no inherent meaning until it is processed, organized, or interpreted.

Characteristics of Data:

- Raw Form: Data is unprocessed and unstructured until analyzed or organized.
- Representation: Can be represented in various forms such as numbers, text, images, audio, and video.
- Variety: Data can be structured, semi-structured, or unstructured.
- Value: Gains meaning only when processed to produce information.

Types of Data:

1. Based on Form:

- Numerical Data: Numbers and values (e.g., 25, 100.5).
- Textual Data: Letters, words, and symbols (e.g., "Hello", "Data").
- Multimedia Data: Images, audio, and video.

2. Based on Structure:

- Structured Data: Organized in a defined format like rows and columns (e.g., database tables).
- Unstructured Data: No predefined format (e.g., social media posts, videos).
- Semi-Structured Data: Partially organized, like XML or JSON files.

3. Based on Nature:

- Qualitative Data: Descriptive and categorical (e.g., colors, opinions). Quantitative Data: Numerical and measurable (e.g., height, age).

Examples of Data:

- A list of temperatures recorded every hour: 22°C, 23°C, 21°C.
- A set of customer names: John, Maria, Ahmed.
- A collection of website click rates: 1000, 1200, 1100.

WHAT IS INFORMATION

Information is processed, organized, or structured data that is meaningful and useful for decision-making or analysis. Unlike raw data, information provides context, relevance, and purpose, making it more valuable and actionable.

Characteristics of Information:
1.Organized:
Information is derived from arranging and processing raw data logically.
2.Meaningful:
It has context and conveys a clear message or insight.
3.Useful:
Information is actionable and aids in problem-solving, decision-making, or understanding a situation.
4. Contextual:
Its value depends on the purpose or the situation.

"जो लोग खुद पर विश्वास करते हैं, वे ही दुनिया को बदल सकते हैं।"

Examples of Information:

Data: 150, 200, 250

Information: "Sales increased from 150 units in January to 250 units in March."

Data: 22°C, 23°C, 21°C

Information: "The average temperature for the day was 22°C."

Data: John, 75%; Maria, 85%; Ahmed, 90%

Information: "Ahmed scored the highest in the exam with 90%."

Characteristics of High-Quality Information:
1. Accuracy: Free from errors.
2. Relevance: Applicable to the purpose.
3. Timeliness: Delivered at the right time.
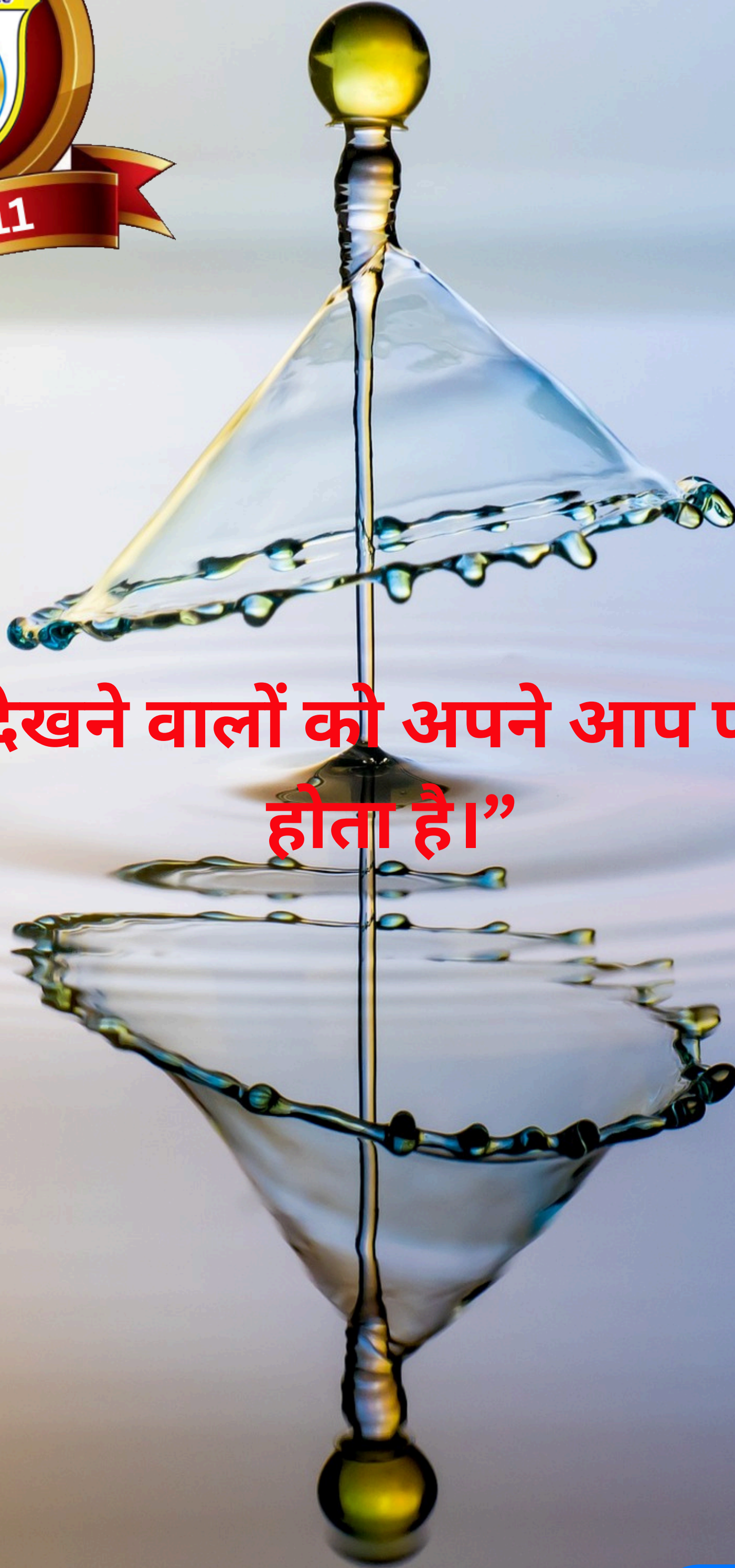4. Completeness: Contains all necessary details.
5. Clarity: Easy to understand.

Applications of Information:

- Business: Generating reports to improve decision-making.
- Science: Analyzing experimental data to draw conclusions.
- Education: Converting raw test scores into performance insights.

"सपने देखने वालों को अपने आप पर विश्वास होता है।"

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