Definitions:

Data: Raw facts and numbers without meaning; it could be unprocessed and not make sense on its own.

Information: Processed, organized or structured data that has some meaning or context. Information is useful and meaningful data.

Characterstics:

Data:

- It can be either qualitative or quantitative.
- Usually disorganized and has no structure.
- E.g., A record of temperature readings taken at different times.

Information:

- Structured and organized data.
- It provides a background to something specific and is relevant as such.
- E.g., Weather report summarizing temperature trends over a week

Data Types:

Structured Data:

- This is often found in pre-specified forms like tables or databases.
- For instance; database records shown in tabular format

Unstructured Data:

- There is no predefined model for its organization
- For example textual data, images, audio files

Data Sources:

Primary Data:

- This type of data is collected directly for a particular purpose.
- For example: surveys, experiments

Secondary Data:

- Data collected by someone else for a different reason but used for another purpose.
- For example existing research studies, government reports.

Data Life Cycle:

1. Collection: Gathering basic raw data
2. Storage: Keeping data for future use in storage
3. Processing: Analyzing and converting it into useful information
4. Output: It refers to the presentation of processed information.
5. Feedback: This is used to improve the process of collecting and refining data.

Data Security and Privacy:

- Security: Protecting data from unauthorized access, change, or destruction.

- Privacy: Dealing with personal information of individuals righteously.

Information Processing:

- Input: Raw data going into a system
- Processing: Transforming the data into meaningful form
- Output: Processed information that contains valuable content . Reportings, visualizations for example.

Information Quality:

- Accuracy: The extent to which the data are free from errors and reliable.
- Relevance: Appropriateness of the information to the task at hand.
- Timeliness: The currency of the information indicates how recently it was updated.

Information Systems:

- Components: Hardware, software, procedures/data and people
- Purpose: To gather process store and distribute information.

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