

# Chapter-2

# Information Retrieval

Data, Information, and Knowledge

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# Out Lines

- **Data**
- **Information**
- **News**
- **Knowledge**
- **Intelligence**
- **Meaning**

# Continue

- **Wisdom**
- **Relevance and Value**
- **Meta data**
- **Knowledge Base**
- **Summary**

# Data

- A datum is a string of elementary symbols, such as digits or letters. It is the value of an attribute. It need not have meaning to everyone, but it must be clear of what attribute a datum is a value.

# Information

- A very formal definition of information comes from the field of engineering. Claude Shannon (Shannon and Weaver, 1959, p. 19) defined it as essentially a measure of the absence of uncertainty or, mathematically,

$$\text{Information} = H = \sum p_i \log p_i$$

# News

- News is usually defined similarly to information. News is a message, unexpected to some extent, that is believed to be true. Even a statement that serves only to verify an earlier news statement may be, to some extent, unexpected; hence, it is itself news.

# knowledge

- In general usage, knowledge seems to represent a higher degree of certainty or validity than information.
- A typical desktop dictionary suggests that information is a set of facts, while knowledge connotes understanding, with the implication that not all information is necessarily understood.

# Intelligence

- One meaning of intelligence is a measure of reasoning capacity. Of more relevance here is the usage that intelligence is information.
- We use the term in the context of the results in the military, diplomatic, or industrial worlds of gathering information about adversaries.



# Meaning

- This is the most difficult of all the information-related descriptors to define.

# Wisdom

- A person who has wisdom does not necessarily have more data or facts than others, but the wise person's utterances are more likely to be accepted by a community of users and to provide insight into matters of importance.

# Relevance and Value

- Much of text information retrieval is concerned with these two terms: relevance and value. Basically, it is not so much a matter of what is retrieved being true or not, as whether or not it is of use to the searcher.

# Meta data

Refers to data about data or information about information. Typically, meta data is descriptive of the organization or content of a body of data, such as a record or database.

# knowledge base (KB)

- A database, however true or valid its content, is a collection of data that can be searched by a retrieval program as directed by a user.
- A knowledge base (KB) in this context is a set of information used by a person or program to perform a function.
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# Summary

The essence of this chapter has been to point out that information, when acquired by a person, leads to some kind of action.

- The action may be internal: making up one's mind, or making a decision, or it may be externally manifested by moving, buying, shooting, or some such act. These may also be viewed as the result of the act of deciding.
- It is also true that the nature of the action will be determined by the recipient's degree of belief in the information or understanding of its meaning.

# End of Chapter-2

- Please Read carefully the Chapter-2 in Text book, page37-50